Dimensions of Business Resilience in the Context of Post-Disaster Recovery in Davao City, Philippines

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Review of Integrative Business & Economics Research

ABSTRACT

This study determined the dimensions of business resilience in the context of post-disaster recovery among business establishments in Davao City and developed a post-disaster business resilience and recovery framework based on the findings. Descriptive method was used to characterize or describe the factors or attributes of business resilience of businesses, while multivariate analysis via exploratory factor analysis discovered and determined the underlying factor structure in various analysis and techniques. The survey questionnaire was administered to 392 respondents who are proprietors and managers of businesses that were affected by the highest water level rise (flashflood) recorded and experienced by the city last June 28, 2011. The exploratory factor analysis yielded five (5) valid dimensions of business resilience in the context of post-disaster recovery in the case of Davao City. These five factors are labelled as (a) institutional control, (b) planning and preparedness, (c) philosophy and integrity, (d) external support and linkages, and (e) communication and media. These five dimensions are the components that typify a realistic business resilience model that would benefit the businesses concerned in withstanding the future onslaughts of disasters.

Keywords: business resilience, exploratory factor analysis, post-disaster context

1. INTRODUCTION

1.1 Background of the Study

On a daily basis, organizations are expected to conduct their operations under normal conditions, following regular processes and activities. Businesses, non-profit organizations, and public agencies are key stakeholders in communities as they provide goods and services, employment opportunities, cash flow, and community supports. As a result, these organizations play critical roles in maintaining public health and well-being. It is therefore of utmost importance to ensure that these organizations function continually when a disaster occurs.

Organizational resilience is a continuously moving target, which contributes to performance during business-as-usual and crisis situations (Mitroff, 2005). It requires organizations to adapt and to be highly reliable (Vogus & Sutcliffe, 2007), and enables them to manage disruptive challenges (Durodie, 2003).Disasters such as the recent parliament shooting in Ottawa, Canada in October 2014, Super storm Sandy in October 2012, the Great Japan Sea Earthquake and tsunami in March 2011, and Hurricane Katrina (August 2005) are reminders of the need for business communities to engage in emergency preparedness initiatives to enhance their resilience in the event of a disaster. Most Micro, Small, Medium Enterprises (MSMEs) in developing countries are characterized by informality and noncompliance with industry norms and regulations, limiting their capacity to adopt risk management tools and

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

expand customer and supply base. The situation is further aggravated as governments focus more on relief, search and rescue operations, and social services (Ballesteros & Domingo, 2015). The impacts of natural disasters can be devastating to business operation and viability. MSMEs suffer the most as they are relatively resource-constrained and less resilient. Recent studies show that MSMEs in the Philippines, while relatively flexible, have limited access to a broader set of coping strategies and are generally not prepared for nature-related disasters.

In 2014, the onset of super typhoon Yolanda had left the Philippines with Php 31.13 billion pesos of damage in the agricultural industry, with the coconut subsector sustaining the greatest damage (Poverty Reduction and Economic Management Unit, 2014). Latest data released by the Department of Agriculture showed that to date, the coconut industry in the Visayas provinces affected by the typhoon incurred production losses valued at Php17.8 billion. Demolished by the typhoon were 441,517 hectares of coconut plantation. The rice subsector incurred production losses of Php3.23 billion equivalent to 199,199 metric tons (MT) of palay (unhusked rice) planted in 106,414 hectares of rice fields. The banana industry also sustained significant production losses valued at Php1.49 billion as Yolanda pummelled 14,775 hectares of banana plantation damaging 102, 178 MT of produce. The livestock industry sustained Php2.24 billion in production losses, while the fisheries sector incurred losses of Php1.49 billion. Damage to agriculture facilities and infrastructure was valued at Php4.06 billion (Valencia, 2014). This raised the concern for the industry as well as other industries in the country to bolster their preparation as well as to speed up its recovery.

A natural disaster not only damages property and devastates communities, but it alters the composition of a city. Such was the case with the Barangay Matina flash flood last June 28, 2011 and subsequent storm-related flooding, which displaced hundreds of household and caused more than 11 million pesos in property damage in the greater Davao City area (NDRMMC, 2011). Although some affected communities in the area were on their way to recovery, some are not; and the composition of the city had been drastically altered. With such problems that are glaringly evident in the locality, it is also but right that businesses ensure operational viability and seek to forecast its capacity to be resilient in times of disasters and *force majeure* (acts of nature). Business owners and entrepreneurs need to consider and prepare for these factors as crucial part of the macro-environment.

Several studies had been conducted in the Region that assess disaster preparedness. Numerous policies, too, had been formulated to equip the local governments and their respective communities to face disasters. Virtually no study, to the best knowledgeof this researcher, has been done on the characterization of business resilience in the context of post-disaster recovery, despite the fact that it has become a growing body of knowledge in the global arena. This study, thenwas proposed to address this research gap.

1.2 Objectives of the Study

This study aimed to determine the dimensions of business resilience in the context of post-disaster recovery among the business establishments in Davao City and develop a post-disaster business resilience and recovery framework based on the findings.

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2. REVIEW OF LITERATURE AND THEORY BASE

This section includes the review of related literature and studies, which pertains to business resilience in post-disaster recovery, and the factors that characterize business resilience in a post-disaster context.

2.1 Related Literature

Business Resilience

Our world is more technologically advanced and interdependent, risks are increasingly shared across local, regional and national boundaries and we are more culturally diverse than ever before. As a result, communities are increasingly confronted with emergencies and crises which challenge their social and economic stability.

Somers (2009) describes resilience as a reaction to an event and argues that resilience is demonstrated after an event or crisis has occurred. As a result, to measure resilience during business-as-usual, he focused on measuring latent resilience or resilience potential. However, this ignores the positive role that resilience can play in helping organizations to avoid crises. This could include monitoring and detection of early warning signals which help organizations to avoid or prevent crisis or decline.

Weick and Sutcliffe (2011) discussed high reliability as a key characteristic of resilience and present a series of nine audits to measure resilience. Each resilience audit consists of questions based on high reliability and organizational theory. Likewise, Smith et al. (2005) advocated the use of Weick and Sutcliffe's resilience audits to organizational managers to create mindfulness and to diagnose areas that need specific attention. However, the audits have yet to be fully quantitatively tested .

Lastly, Fiksel (2003) discussed the resilience approach and note that resilient organizations recognize that it is impossible to prevent all crises and disasters all of the time. Instead, they monitor their organization as a system with inputs and outputs, the characteristics of which can provide information about the health of the system.

Attributes of Business Resilience

There has been increasing body of knowledge that reports various components of frameworks about disaster preparedness, risk reduction and recovery, both in the context of the community and the businesses in them. As disasters are integral considerations by businesses, being a macro-environment force, the frameworks should be realistic as to their components. They must also outline the context of the business being studied.

In this study, post-disaster recovery of businesses in Davao City were drawn for related literature that would support the framework derived which will be presented in the later analysis of this paper. Such factors include institutional control, planning and preparedness, philosophy and integrity, external support and linkages, and communication and media.

Institutional Control. Miyan (2014) verbalized that an ineffective response may be due to a total lack of capacity, or no experience of how to respond. In either case, the challenge facing policy makers is increased, further exhausting response capacity. However, the scale of the crisis can be minimized and dealt with effectively if

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institutions are flexible to circumstance. They should be able to learn from their operational environment, integrate experience as it is accrued, and adapt accordingly.

Cavallo, Galiani, Noy and Pantano (2013) argued that the institutional setting significantly affects these patterns. Better pre-quake institutions might be more capable of withstanding the shock and managing the recovery period. Moreover, when institutions are weaker, the huge inflow of financial aid is more likely to be misallocated and diverted to less productive activities, negatively affecting the technical efficiency of the economy and further deteriorating institutional quality. Overall, in the long-term, the earthquake might exacerbate regional disparities in both economic and social development.

More so, Turnbull, Sterrett and Hilleboe (2013) espoused that disaster resilience can be manifested by company's processes for designing, implementing, and evaluating strategies, policies and measures to improve the understanding of disaster risk, foster disaster risk reduction and transfer, and promote continuous improvement in disaster preparedness, response, and recovery practices, with the explicit purpose of increasing human security, well-being, quality of life, and sustainable development. It is concerned with both disaster and disaster risk of differing levels and intensities.

Lastly, Manzoor (2013) averred that risk reduction denotes both a policy or objective, and the strategic and instrumental measures employed for anticipating future disaster risk, reducing existing exposure, hazards or vulnerability, and improving resilience. This includes lessening the vulnerability of people, livelihoods, and assets and ensuring the appropriate sustainable management of land, water, and other components of environment. A strong relationship between disaster risk and reduction, and development planning has been established and validated, but not in developing countries.

Planning and Preparedness. Cowan and Simpson (2011) mentioned that in making the business prepared for impending disasters, it should first and foremost consider the soundness of the preparations. This can be manifested in the business' awareness-raising, which is required in many hazard-prone countries to secure a solid appreciation and understanding of the relevance of disaster risk reduction to sustainable development and poverty reduction. Awareness-raising should be tackled, first and foremost, via the development of a solid, rigorous body of evidence on hazard mapping and physical exposure, on disaster losses, on the socio-economic impact of disasters at national and community levels, and on the scope for enhanced resilience. This body of evidence is required to establish the case for proactive disaster risk management and to develop appropriately risk-sensitive development policies and initiatives.

As with the study of Aldrich (2012), a rapid assessment of disaster management of a business organization indicates that disaster management systems tend to rely on a reactive approach, i.e., institutional arrangements and hardware for post-disaster emergency response; preparedness measures such as evacuation plans and stockpiling of emergency supplies; and the provision of relief. International experience has shown that this is an ineffective manner to deal with disaster risk which detracts from development objectives. This reactive approach is in contrast to a more effective proactive approach, in which disasters are avoided by appropriate land-use planning, construction and other pre-event measures.

In the same manner, Birkland (2006) elucidated that efforts to define and acknowledge accountability for disaster-related human, physical and economic losses and related areas of responsibility are also required. The pace and success of awareness-

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raising initiatives can be greatly aided by the emergence of strong political advocates for risk reduction.

Miyan (2014) espoused that disaster risk management is concerned with both disaster and disaster risk of differing levels and intensities. Disaster risk reduction denotes both a policy or objective, and the strategic and instrumental measures employed for anticipating future disaster risk, reducing existing exposure, hazards or vulnerability, and improving resilience. This includes lessening the vulnerability of people, livelihoods, and assets and ensuring the appropriate sustainable management of land, water, and other components of environment. A strong relationship between disaster risk and DRR, and development and development planning has been established and validated, but not in developing countries.

Philosophy and Integrity. The United Nations International Strategy for Disaster Reduction (2009) reported that organizations and institutions that seek to protect their business interest against disasters should include disaster risk reduction as part of their corporate objectives. It should likewise be delineated in their company handbooks. Priority for disaster preparedness and recovery should be embedded as part of public policies that address disaster risk publically owned, managed or regulated services and infrastructures and the environment, but also that regulates or provides incentives for actions by the households, communities, businesses and individuals and the public policies on risk management need to be underpinned by appropriate governance frameworks incorporating national and local governments civil society, private sector, the science and academic sectors and thus similarly the mechanisms for information and knowledge generation on risk and on risk management alternatives which is available to policy and policy makers at different levels, from individuals and households to international organizations.

Meanwhile, the Bangladesh Standing Orders on Disaster (2010) reported that disaster management vision must instill the aim of reducing the risk of people, especially the poor and the disadvantaged, from the effects of natural, environmental and human induced hazards, to a manageable and acceptable humanitarian level, and to have in place an efficient emergency response system capable of handling large scale disasters. The report outlines disaster management arrangements in Bangladesh, defines detailed roles and responsibilities of the government and other organizations involved in disaster risk reduction and emergency response management.

External Support and Linkages. As for Benson and Clay (2003), coordination and implementing capacity of the businesses' management with agencies involved in disaster management is synonymous to faster recovery of their operations. In keeping with the shifting focus to a more proactive role, the type of coordination needed should be less of a top-down oversight function to one that is more participatory. Greater organizational, management and task synchronization would be prerequisites at both national and international levels. As risk reduction also requires that the resilience of the most vulnerable communities to hazard impacts be enhanced to help them cope with the hazards when they occur, the approach taken must emphasize a bottom-up approach with participation of all stakeholders.

Yet, Rahman and Rahman (2013) reported that there are some drawbacks in the policies and in the implementation of business risk reduction plans because of the sore lack of support from the external organizations. Lack of coordination among the agencies and among the government departments hampers quick response in times of

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emergency. In all situations, the role of each agency should be clearly defined. Confusion about jurisdiction of work destroys the congenial atmosphere.

Communication and Media. In a disaster situation, information must be disseminated quickly to people affected by the disaster as well as to those responding to the disaster (Paton, Kelly & Doherty, 2006). Communication during a disaster requires many standard crisis communication techniques. But, in order to understand how a crisis and disaster are related, their relationship must be understood (Adkins, 2010; Ulmeret al., 2007). Disasters, unlike crises, are solely external crises caused by natural events in which it is not the fault of an organization (Foster, 2012).

According to Nicholls (2012), before a crisis or disaster occurs, organizations should establish relationships with other credible sources, as well as various stakeholders. The media, as a communicator with the public, should be viewed as a resource throughout a crisis. A designated spokesperson should interact with the media to provide continuity and this person should continue a dialogue with the media throughout the crisis or disaster.

Semple (2009) averred that social media gives all of organizations the opportunity to communicate in an immediate and direct manner throughout their disaster relief efforts. Just like a corporation in crisis, emergency relief and government organizations need a focused and detailed crisis communication plan for their tactics during a disaster.

On the other hand, Pearson and O'Connell (2010) made mention that some organizations cannot afford these resources to improve their social media use. When these resources are unavailable, there are important practices for organizations to follow. Organizations should only use social media tools that can contribute to the success of their social media campaigns. In addition, they should only use tools they have the time to plan and execute the use of. Organizations should have a plan for their messages and make those messages clear and coherent.

Lastly, Goldfine (2011) made pronouncements that all organizations need a crisis communication plan that utilizes and understands the importance of social media. Just like any other organization, companies involved in disaster relief efforts need a crisis plan that incorporates social media. Emergency relief organizations play an integral part in aid following a disaster or emergency, and, as such, they are experts in crisis communication. They are first responders in a disaster situation, they facilitate medical care, and they aid in the placement of displaced peoples.

2.2 Theory Base

This study utilized various theories and concepts as legal basis and foundation in its conduct:

The study hinged on the systems thinking and theory espoused by Stead and Smallman (1999). Accordingly, crisis management and organizational resilience are dominated by systems thinking and a general systems approach. Systems thinking involves viewing organizations and groups as though they were systems, made up of components, which together have a value which is more than just the sum of their parts. In the context of organizational resilience, system thinking is useful because it considers the relationships between components as a potential source of failure or alternatively strength. In particular, the speed of impact of the relationships between components and the critical path of relationships between components for the system to

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function are important. Two of the key concepts within systems thinking are complexity and coupling which refer to the speed of the relationship between component parts.

Another basis is the Disaster Research Center (DRC) typology which was one of the first typologies developed to study organizational responses to crises. Five approaches to organizations' response to crises are then presented and reviewed. The five approaches are adaptive fit, the edge of chaos, power laws, crisis turnarounds and high reliability organizations. Organizations respond to disruption and uncertainty in ways which may show different levels of resilience or alternatively failure: (a) They centralize internal controls (LaPorte, 1996); (b) they adapt (Ashkanasy, et al., 2002; Webb, 1999); (c) they learn (Carroll, 1998; Weick, et al., 2005); and (d) they are creative (Kendra &Wachtendorf, 2003).

2.3 Research Framework

Figure 1 illustrates the conceptualized framework of the study, which contains the multiple observed (explored) factors that characterize the latent variable of the study, which is the business resilience in a post-disaster recovery phase. It shows that there are underlying factors or components of the latent variable, which can be represented as Factor 1, Factor 2, Factor 3,…Factor *n*. These factors are not yet definite because further analysis of this study will yield the explored factors and name them based on commonality of the themes.

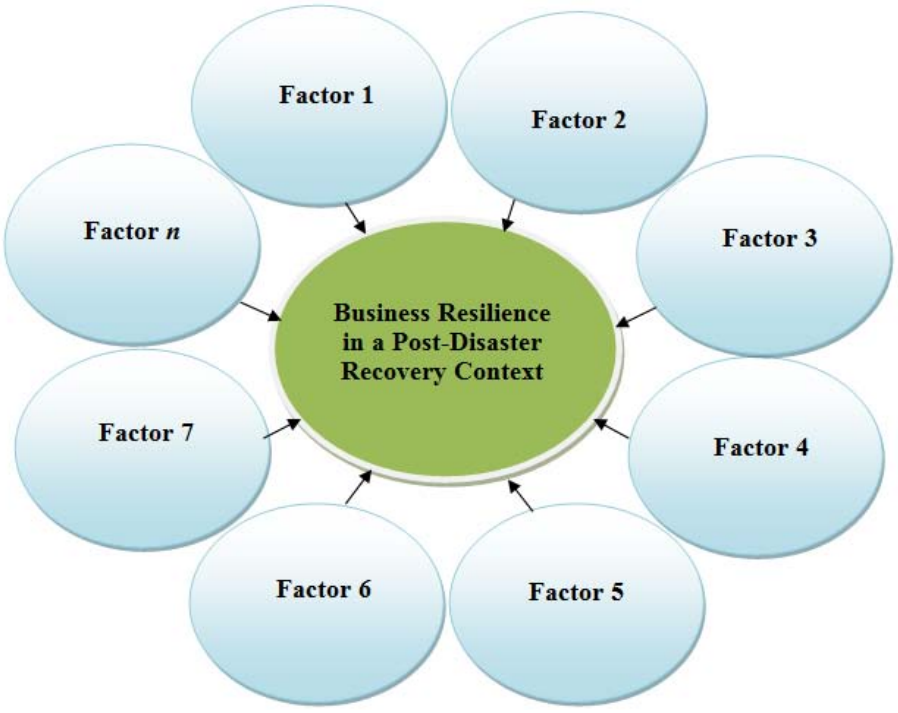

Figure 1. The Conceptual Paradigm of the Study

2.4 Hypothesis

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This study tested the hypothesis, which stated that business resilience in a post-disaster recovery context is a function of sets of factors, namely Factor 1, 2, 3… Factor *n*.

3. METHODOLOGY

This study explored the dimensions of business resilience in the context of post-disaster recovery. To address this quandary, this study made use of both qualitative and quantitative approaches. Quantitative research is characterized, *inter alia*, by deductive reasoning, objectivity and use of a structured instrument and statistical data analysis procedures (Gay, 1992). On the other hand, the qualitative method investigates the why and how of decision making, not just what, where or when (Denzin & Lincon, 2002).

In this study, descriptive method was used to describe the factors or attributes of business resilience of businesses in Davao City, while multivariate analysis via exploratory factor analysis discovered and determined the underlying factor structure in various analysis and techniques.

Primary data was utilized in this study both from the key informants' interview and the respondents of the study. The key informants' interview was conducted in separate times to elicit responses, which formed part to the possible dimensions of business resilience in the context of post-disaster recovery. Based on the response items gathered, a survey questionnaire was developed and responded by the business establishments through their owners, managers and proprietors.

This study utilized an interview guide in the first phase and survey questionnaire in the second phase in gathering the necessary data. The first phase was the key informants' interview wherein qualitative open-ended questions was used to elicit responses from key informants of which the resulting transcripts was used in order for the researcher to formulate the final items of the questionnaire to be used for the next phase.

The survey questionnaire in the second phase consisted of two parts: Part I asks the business profile and Part II guides the respondents to rate the items on the items that are continuously numbered. Face validity of the questionnaires was reviewed by experts in disaster preparedness, planning and emergency rescues. A validation sheet was provided to each of the three validators to evaluate the appropriateness of the items and the appearance, style and content of the questionnaire. The validation sheet follows a semantic pairing of 1-5 in Likert form, wherein 5 indicated 'Excellent' and 1, 'Poor'.

The questionnaire was also tested for reliability using Cronbach's α for internal consistency based on the average inter-item correlation. Also, the researcher conducted pilot-testing of the survey questionnaire, involving fifteen (15) proprietors and managers of businesses in a separate barangay (Barangay Talomo), which was also reported to have experienced disaster on the same fated day. For a highly-reliable instrument, a score of .70 must be achieved (Hair, et. al., 2006). The alpha value of the questionnaire was found to be 0.983. This means that the questionnaire is highly-reliable.

For the final form of the questionnaire, a 7-point Likert attitudinal scale was used, since a 7-point Likert scaling is more accurate, easier to use and a better indication

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

of the reflection of the respondent's true evaluation than other scales (Finstad, 2010). The 7-point Likert Scale was anchored between the semantic differential pairs of "Strongly Agree or Strongly Disagree". The degree of responses were categorized and interpreted as shown in Table 1, as follows:

Table 1. 7-Point Likert Scale

Score	Range of Means	Description	Interpretation
7	6.50 – 7.00	Strongly Agree	The measure described is very high.
6	5.50 – 6.49	Agree	The measure described is moderately high.
5	4.50 – 5.49	Somewhat Agree	The measure described is slightly high.
4	3.50 – 4.49	Neither	The measure described is neither high nor low.
3	2.50 – 3.49	Somewhat Disagree	The measure described is slightly low.
2	1.50 – 2.49	Disagree	The measure described is moderately low.
1	1.00 – 1.49	Strongly Disagree	The measure described is very low to an extent.

3.1 Sampling Technique

The researcher used stratified random sampling in determining the respondents of the study.

In this study, a final sample of 392 respondents was derived after computing the given population of businesses from the Department of Trade and Industry Region XI Office. However, of the 392 questionnaires handed, only 316 were returned; thus an 80.61% response rate. Of this rate, 12 were discarded for incomplete responses and 4 were further disregarded because of lack of business information provided. Thus, the response validity rate was found to be 76.53%. Note further that the final sample size is dependent on the number of items in the final survey questionnaire.

3.2 Procedure of the Study

The first phase of the study was the identification of the problem. After the identification of the problem and with the consultation of the research adviser, the researcher identified supporting literature and studies based on the problem with reference to theoretical studies and researches.

Consequently, a conceptual framework was hypothetically-created to present the hypothesized factor structure of business resilience in the context of post-disaster recovery. Organization of the manuscript was finalized for proposal defense. The manuscript containing the proposed research was then submitted to the researcher's adviser and members of the Thesis Advisory Committee for comments, revisions, further development and approval for proposal hearing.

After securing the approval of the research proposal, the key informant interview (KII) was conducted involving 15 business owners and managers in a proximal

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barangay in Talomo Proper which encountered the same disaster to elicit responses, which was then used as items for the questionnaire to be crafted. A guide set of open-ended questions was used to formulate possible answers leading to the identification of the dimensions of business resilience.

After the conduct of key informant interview (KII), responses were treated in a thematic manner and irrelevant items were dropped from the final formulated item count. Items were numerically-placed and subjected for grammatical improvement and validation by the experts. The survey instrument was subjected to reliability testing before utilizing for the statistical process.

Consequently, request letter/s addressed to the *punong barangays* (elected community leaders)of MatinaAplaya, Matina Crossing and MatinaPangi were sent to secure endorsement in the conduct of the study. Upon approval, the researcher proceeded in the distribution of the questionnaires. Questionnaires were retrieved immediately after the respondents answered them. The researcher checked if questionnaires were completely responded before retrieving.

Before proceeding with the data analysis, all variables were screened for possible missing values and outliers. All variables were also examined for missing values. The responses were then analyzed using data reduction procedure and results were drawn thereinafter. Lastly, conclusions and recommendations were formulated and a proposed business resilience framework was developed.

3.3 Statistical Treatment

The researcher made use of the following statistical tools for the analysis of the data:

Descriptive statistics (frequency and percentage in pie chart) was used to present the institutional and operational profile of the businesses.

Weighted mean was used to present the extent or level of truancy of the statements that characterize business resilience in a post-disaster recovery phase.

Data reduction via exploratory factor analysis (EFA) was used to identify the salient factor structures characterizing the dimensions of business resilience. Dimensionality of the constructs was attained using principal component factor analysis (PCA) platform, choosing an eigenvalue of not less than 1.0. Coefficients less than $\pm$0.50 were suppressed upon rotation of the factors using VARIMAX rotation with 50 iterations. The goal of EFA is to provide a means of explaining variation among variables (items) using a few newly-created factors and to define the content or meaning of factors, e.g., latent constructs (Suhr, 2006).

4. PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This chapter presents the analysis of the results based in the data gathered from the respondents which include: (1) the institutional profile of the businesses included in the survey, which are characterized in terms of nature of business, ownership type, years in operation, establishment type, and number of employees; (2) the factor structures that

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define the salient attributes or dimensions of business resilience in the context of post-disaster recovery; and (3) the proposed business resilience framework.

4.1 Profile of the Businesses in Davao City

The institutional profile of businesses included in the survey are presented in this part in the form of pie charts to graphically represent their distribution in terms of nature of business, ownership type, years in operation, establishment type, and number of employees.

4.1.1 Nature of Business. Based on the results displayed in Figure 2, most of the businesses are engaged in accommodation and food service (18.67%), followed by manufacturing (16.67%), merchandise and grocery distribution (15%), agriculture (14%), hardware and furniture stores (11.67%), wholesale, retail trade and repair of vehicles (9.33%), financial and insurance activities (4%), education (2.67%), arts, entertainment and recreation (2.67%), construction (2%), administrative and support services (1.67%) and professional and technical services (0.67%). There are also businesses who engaged with business lines not mentioned (1%). This implies that businesses in Davao City specifically in Matina Area (Aplaya, Crossing and Pangi) are distributed diversely. This means that the area chosen is indeed a melting pot of commerce and trade due to the presence of businesses with different product and service lines.

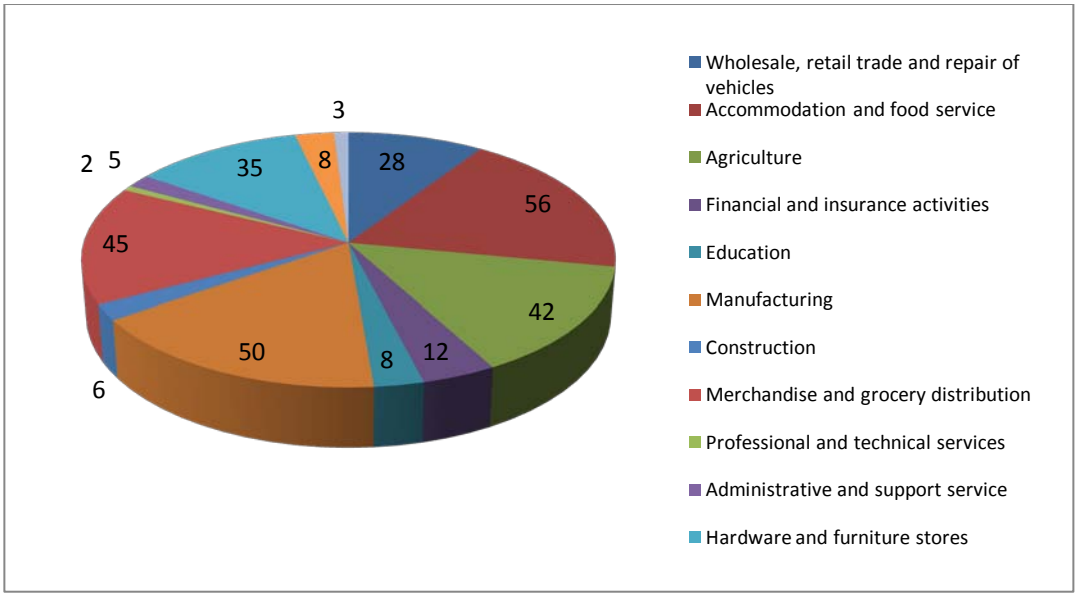

Figure 2. Distribution of Respondents in Terms of Nature of Business

4.1.2 Ownership Type. Based on the results displayed in Figure 3, 68.33% are established as sole proprietorship, 17.33% are cooperatives, 8.33% are corporations and 6% are partnerships. The distribution according to ownership type is varied and provides a spectrum of the typology of business types. The result further confirms that majority of the businesses in Davao City specifically in the Matina area are run by a single person.

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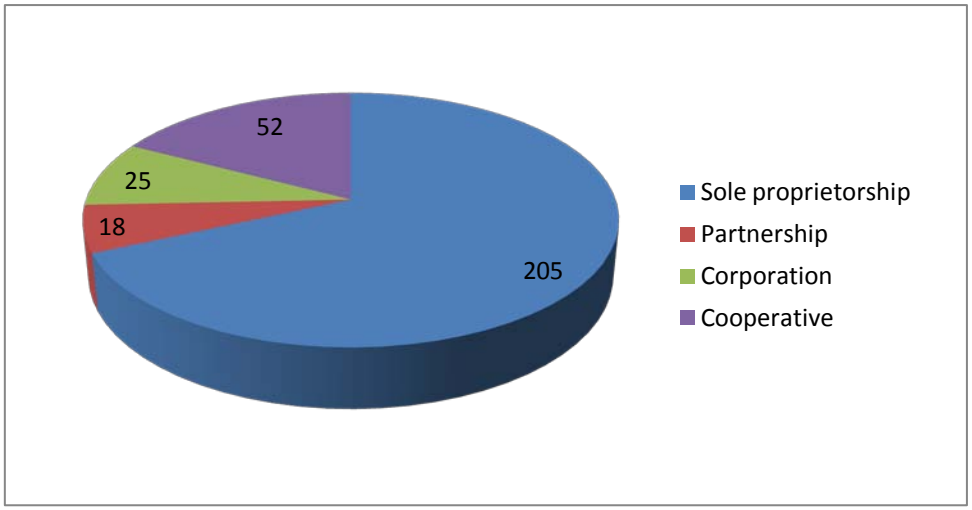

Figure 3. Distribution of Respondents in Terms of Ownership Type

4.1.3 Years in Operations. Based on the results displayed in Figure 4, 54.67% of the business have been into business for one to five years, followed by those who have just started the business or have been around for less than a year (23.67%), those that are 11 years and above in years of operations, and those who have been in the business for six to ten years (8.67%). This means that predominantly, businesses are still in their initial phase of operations and are considered to be in the growth and market acceptance phase.

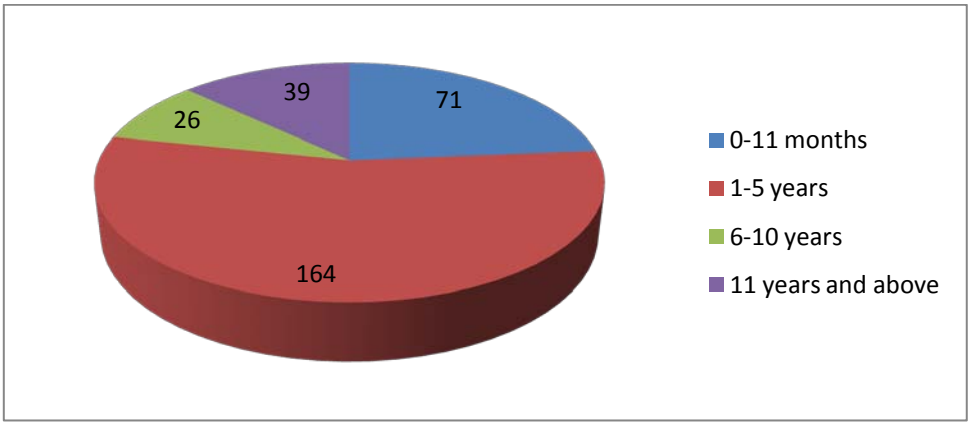

Figure 4. Distribution of Respondents in Terms of Years of Operation

4.1.4 Establishment Type. Based on the results displayed in Figure 5, The results indicate that 34.67% of the respondent businesses are categorized as medium enterprises with total assets of more than Php 15 million up to Php 100 million, followed by 29% categorized as micro-businesses with total assets of not more than Php 3 million, 21.33% categorized as small businesses with total assets of more than Php 3 million to Php 15 million, 10.33% categorized as cottage firm/industry with total assets less than Php 3 million, and 4.67% categorized as large businesses with total assets above Php 100 million. The predominant existence of medium enterprises denote that Matina area is indeed a growing center of commerce and trade and that investments are pouring within the range of total asset requirements.

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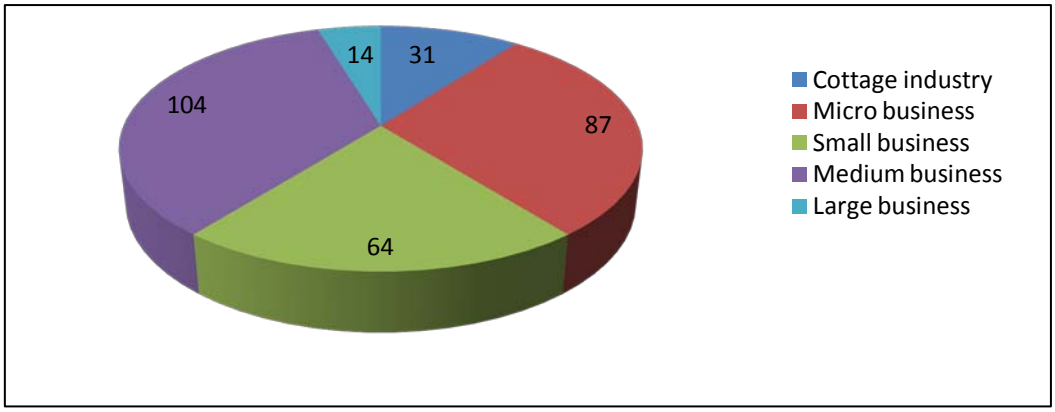

Figure 5. Distribution of Respondents in Terms of Establishment Type

4.2 Determining the Attributes of Business Resilience

To test the factorability of business resilience, the following tests that include the KMO measure and Bartlett's test, latent roots criterion, Catell's scree plot and principal component analysis illustrated in the rotated component matrix were used. The results of these criteria are presented below:

4.2.1 Kaiser-Meyer-Olkin Index of Sampling Adequacy. The Kaiser-Meyer-Olkin (KMO) Index is a measure used for assessing sampling adequacy. It is also used as an index in comparing the magnitudes of the observed correlation coefficients and partial correlation coefficients to determine if the data are likely to coalesce on components. This measure ranges from the values 0 to 1; a value of 0.6 is suggested minimum for a satisfactory factor analysis to proceed but values closer to 1 are better.

In this research, the test result in Table 2 is 0.925. The result suggested that the sample size is adequate and "meritorious" (Kaiser & Rice, 1974) as it surpassed the acceptable value of 0.6. This result is an overall index telling that the data support the use of EFA and that the data may be grouped into smaller sets of underlying factors. The result therefore confirms that the data set is appropriate for factor analysis.

4.2.2 Bartlett's Test of Sphericity. In this study, Table 2 illustrates the test value is high (1.784×10^4) under the degree of freedom (df) of 1218 and the level of significance is 0.000. Therefore, the null hypothesis is rejected and the data set is deemed appropriate for factor analysis (Stewart, 1981). Foulger and colleagues (2010) also mentioned that the significance value of Bartlett's test of sphericity should be less than 0.05 in order to be small enough to reject the hypothesis.

Table 2. Kaiser-Meyer-Olkin (KMO) and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.925
Bartlett's Test of Sphericity	Approx. Chi-Square	1.784E4
	Df	1218

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Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.925
Bartlett's Test of Sphericity	Approx. Chi-Square	1.784E4
	Df	1218
	Sig.	.000

4.2.3 Latent Roots Criterion. The standard result of exploratory factor analysis can be identified using the latent roots criterion through getting the total value of the variances explained. Total variance explained shows the result by identifying the value of the eigenvalues of the factors and the variance of each factor. Results of the latent root criterion in Table 3 reveal that six factors can be extracted from the set of items submitted for factor analysis. These six dimensions or factor structures explain 72.564% of the variations in the data.

Table 3.Total Variance Explained

Component	Initial Eigenvalues		
	Eigenvalues	% of Variance	Cumulative %
1	28.481	56.961	56.961
2	2.195	4.390	61.352
3	2.028	4.056	65.408
4	1.278	2.557	67.965
5	1.256	2.513	70.477
6	1.043	2.087	72.564
Extraction Method: Principal Component Analysis			

4.2.4 Catell's Scree Plot. The Catell scree test plots the components as the *X* axis and the corresponding eigenvalues as the *Y*-axis. As one moves to the right, toward later components, the eigenvalues drop. When the drop ceases and the curve makes an elbow toward less steep decline, Cattell's scree test says to drop all further components after the one starting the elbow (Bartholomew, et. al., 2008).

Figure 6 shows that by laying a straight edge across the bottom portion of the roots, there are six (6) factors before the curve becomes approximately a straight line.

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All factors that have eigenvalues of 1.00 or higher were considered. Therefore, the results indicate that the extraction of six factors is appropriate for this analysis.

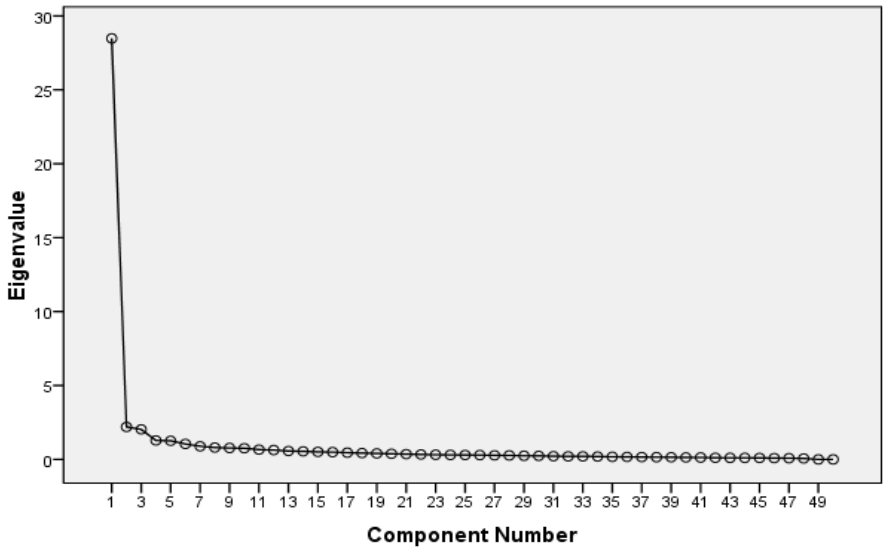

Figure 6. Scree Plot Showing the Extracted Factors

4.2.5 Rotated Component Matrix. The data were subjected to principal component analysis in order to determine the factor structure. De Coster (2000) mentioned that principal component analysis (PCA) is employed to determine whether certain items measure common factors. In addition, factor rotation simplifies the rows and columns of the factor matrix and maximizes a variable's loading on a single factor in order to facilitate interpretation (Hair, et al., 2006). An orthogonal rotation (VARIMAX) and an oblique rotation (OBLIMIN) are normally used to explain the computed factor matrix.

Table 4.Rotated Component Matrix

Item	Component					
	1	2	3	4	5	6
Item_43	.796					
Item_23	.768					
Item_41	.767					
Item_24	.744					
Item_28	.734					
Item_25	.716					
Item_40	.711					
Item_22	.710					

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Item_27	.702					
Item_39	.699					
Item_42	.696					
Item_37	.685					
Item_48	.668					
Item_29	.661					
Item_34	.659					
Item_30	.648					
Item_32		.642				
Item_31		.624				
Item_26		.621				
Item_36		.615				
Item_46		.613				
Item_20		.606				
Item_47		.600				
Item_38		.595				
Item_18		.571				
Item_19		.553				
Item_45		.522				
Item_35		.516				
Item_21			.812			
Item_4			.812			
Item_10			.788			
Item_12			.788			
Item_14			.660			
Item_6			.580			
Item_17			.580			
Item_13			.507			
Item_15			.501			
Item_49				.749		
Item_1				.652		
Item_2				.651		

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Item_50				.649		
Item_11				.647		
Item_7				.579		
Item_8				.570		
Item_9				.556		
Item_3					.805	
Item_5					.749	
Item_33					.652	
Item_44					.601	
Item_16					.598	

In this research, VARIMAX rotation technique was used and has produced a clearer structure in terms of the content validity of the factors. Coefficient of the factor analysis is set at $\pm$0.50, although the acceptable value is $\pm$0.40.

Table 4 reveals the results of the rotation, showing that all of the six factors have significant loadings above ±0.50, which is the standard coefficient value, using the VARIMAX method. The 50 items loaded into the six factor structures or attributes. However, four items in the sixth factor have weaker coefficients, and part of their coefficients loaded into the first five factors, which have more robust indices. Thus, the sixth factor, which is composed merely of isolated items upon rotation, is eliminated from the analysis. The first five factors are then labelled accordingly to the nature of each of the items in one structure, namely: institutional control, planning and preparedness, philosophy and integrity, external support and linkages, and communication and media.

Factor 1 – Institutional Control. Table 5 shows that Factor 1 extracted 16 items. The pattern coefficient of the 16 items ranged from 0.648 to 0.796. “Stores a contact list of all personnel” had the lowest value of pattern coefficient, which is 0.648, while “Maintains a sense of control about what happens to the business” had the highest value of pattern coefficient that is 0.796. The items’ coefficient value surpasses the minimum requirement of $\pm$0.50. Looking on the commonality of the 16 items, all of them speak on the decision-making, management’s practices towards ensuring business preparedness, management’s interventions before the onset of unforeseen disasters, and gathering of institution’s resources. Since these items are part of the managerialcontrol of the business in treating the disaster as an external threat of the business operations, the attribute or factor structure is labelled as “*Institutional Control*”.

This finding is corollary to the pronouncements of Turnbull, Sterrett and Hilleboe (2013), who espoused that disaster resilience can be manifested by company’s processes for designing, implementing, and evaluating strategies, policies and measures to improve the and promote continuous improvement in disaster preparedness, response,

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Table 5. Constructs and Loadings under the First Attribute of Business Resilience in the Context of Post-Disaster Recovery

Factor	Item	Construct	Factor Loading
Institutional Control	43	Maintains a sense of control about what happens to the business	0.796
	23	Generates fund sources to revitalize business operations	0.768
	41	Does disaster preparedness and drills for earthquakes, fires and typhoons	0.767
	24	Requests employees to cooperate with in rebuilding the business	0.744
	28	Maintains adequate number of staff	0.734
	25	Adapts well to differing conditions	0.716
	40	Invests in training its personnel for risky situations	0.711
	22	Keeps a stock of supplies and materials that can be used in times of emergencies	0.710
	27	Conducts post-disaster assessments on the extent of damages that have hit the business	0.702
	39	Invests for insurance of the building and of the products and inventory in it from possible earthquake, fire or *force majeure*	0.699
	42	Prepares post-disaster plans to see the weaknesses of the establishment after the damage	0.696
	37	Has a mentor or consultant who discusses business preparedness with the owners.	0.685
	48	Provides a resource manual for risk reduction and management	0.668
	29	Takes business risk management to a new level	0.661
	34	Hires a disaster and risk mitigation officer	0.659
	30	Stores a contact list of all personnel.	0.648

and recovery practices, with the explicit purpose of increasing human security, well-being, quality of life, and sustainable development. It is concerned with both disaster and disaster risk of differing levels and intensities. Disaster risk reduction denotes both a policy or objective, and the strategic and instrumental measures employed for anticipating future disaster risk, reducing existing exposure, hazards or vulnerability, and improving resilience.

Factor 2 – Planning for Preparedness. Table 6 shows that Factor 2 extracted 12 items. The pattern coefficient of the items ranged from 0.516 to 0.642. "Encourages all personnel to get insurance for future claims" had the lowest value of pattern coefficient, which is 0.516, while "Has a long-term plan to strengthen the business" had the highest value of pattern coefficient that is 0.642. The items' coefficient value surpasses the minimum requirement of $\pm$0.50. The 12 items speak of the businesses' planning mechanisms, ensuring the creation of plans in terms of business continuity, financial preparations, short- and long-term plans, workplace safety plans, and the conduct of assessments to prepare for impending disasters. With the nature of the items, the attribute or factor structure is labelled as "*Planning for Preparedness*".

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Table 6.Constructs and Loadings under the Second Attribute of Business Resilience in the Context of Post-Disaster Recovery

Factor	Item	Construct	Factor Loading
Planning and Preparedness	32	Has a long-term plan to strengthen the business	0.642
	31	Has a plan to address governance and compliance issues	0.624
	26	Has a sound financial management plan	0.621
	36	Have risk and vulnerability assessments	0.615
	46	Initiates researches relative to disaster risk reduction and management	0.613
	20	Has a business continuity plan	0.606
	47	Ensures that transport vehicle is prepared at all times in case disaster sets in	0.600
	38	Can improvise when usual resources are not available	0.595
	18	Has a workplace health and safety plan	0.571
	19	Conducts pre-disaster assessments on the extent of damages that will hit the business	0.553
	45	Ensures that readiness is observed at all times	0.522
	35	Encourages all personnel to get insurance for future claims	0.516

This finding is corollary to the pronouncements of Cowan and Simpson (2011), who mentioned that in making the business prepared for impending disasters, it should first and foremost consider the soundness of the preparations. This can be manifested in the business' awareness-raising, which is required in many hazard-prone countries to secure a solid appreciation and understanding of the relevance of disaster risk reduction to sustainable development and poverty reduction. Birkland (2006) elucidated that efforts to define and acknowledge accountability for disaster-related human, physical and economic losses and related areas of responsibility are also required in the emergence of strong political advocates for risk reduction.

Factor 3 – Philosophy and Integrity. Table 7 shows that Factor 3 extracted nine items. The pattern coefficient of the items ranged from 0.501 to 0.812. "Must be confident in its future activities" had the lowest value of pattern coefficient, which is 0.501, while "Emphasizes a culture of putting in the best effort in the business" and "Imbibes with a compassionate corporate philosophy of taking care of the other before self-interest" have the highest value of pattern coefficient that is 0.812. The items' coefficient value surpasses the minimum requirement of $\pm$0.50. The nine items speak of the businesses' operationalized realizations and definitions of preparedness and the practices of the business in embedding disaster preparedness and resilience in their corporate philosophy (vision, mission and goals). With the nature of the items, the attribute or factor structure is labelled as "*Philosophy and Integrity*".

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This finding conformed with the report of Bangladesh Standing Orders on Disaster (2010) reported that disaster management vision must instill the aim of reducing the risk of people, especially the poor and the disadvantaged, from the effects of natural, environmental and human induced hazards, to a manageable and acceptable humanitarian level, and to have in place an efficient emergency response system capable of handling large scale disasters.

Table 7. Constructs and Loadings under the Third Attribute of Business Resilience in the Context of Post-Disaster Recovery

Factor	Item	Construct	Factor Loading
Philosophy and Integrity	21	Emphasizes a culture of putting in the best effort in the business	0.812
	4	Imbibes with a compassionate corporate philosophy of taking care of the other before self-interest	0.812
	10	Shows compassion to others who are victimized by calamities	0.788
	12	Compensates the efforts of volunteers to rebuild the business	0.788
	14	Indicates readiness of external forces in its vision and/or mission statement	0.660
	6	Maintains the philosophy of "business as usual"	0.580
	17	Understands that risks are existing	0.580
	13	Embed responsibility for business continuity throughout the organization	0.507
	15	Must be confident in its future activities	0.501

Factor 4 – External Support and Linkages. Table 8 shows that Factor 4 extracted eight items. The pattern coefficient of the items ranged from 0.556 to 0.749. "Develops strong relationships with suppliers" had the lowest value of pattern coefficient, which is 0.747, while "Has a strong relationship with its customers/clients" had the highest value of pattern coefficient that is 0.749. The items' coefficient value surpasses the minimum requirement of $\pm$0.50. The eight items speak of the role of external stakeholders of the business in ensuring a resilient business towards disasters and the support afforded by the external environment. The items also tell about the business' capacity to search for external support from the community and from the government in the onset of disasters. With the nature of the items, the attribute or factor structure is labeled as "*External Support and Linkages*".

This finding is consistent with the verbalizations of Benson and Clay (2003), coordination and implementing capacity of the businesses' management with agencies involved in disaster management is synonymous to faster recovery of their operations. In keeping with the shifting focus to a more proactive role, the type of coordination needed should be less of a top-down oversight function to one that is more participatory.

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Table 8. Constructs and Loadings under the Fourth Attribute of Business Resilience in the Context of Post-Disaster Recovery

Factor	Item	Construct	Factor Loading
External Support and Linkages	49	Has a strong relationship with its customers/clients	0.749
	1	Sources expert assistance concerning disaster preparations in times of need	0.652
	2	Coordinates with local planners, emergency managers, and public works officials to prepare for instances of damages or loss of properties	0.651
	50	Keeps a network of contacts with government agencies and NGOs	0.649
	11	Is well supported by the local community	0.647
	7	Meets with other businesses in working together to rebuild what was left of their establishments	0.579
	8	Participates in talks or discussions about climate change or any environmental issue	0.570
	9	Develops strong relationships with suppliers	0.556

Greater organizational, management and task synchronization would be prerequisites at both national and international levels. In the same way, Rahman and Rahman (2013) reported that lack of coordination among the agencies and among the government departments hampers quick response in times of emergency. In all situations, the role of each agency should be clearly defined. Confusion about jurisdiction of work destroys the congenial atmosphere.

Factor 5 – Communication and Media. Table 9 shows that Factor 5 extracted five items. The pattern coefficient of the items ranged from 0.598 to 0.805. The item "Get essential updates regarding impending disasters from the Internet" had the lowest value of pattern coefficient, which is 0.598, while "Utilizes social media as a tool to disseminate information regarding risks" had the highest value of pattern coefficient that is 0.805. The items' coefficient value surpasses the minimum requirement of $\pm$0.50. The five items speak of the utilization of communication channels and technology towards the monitoring of incoming disasters. The commonality also focuses on the businesses' practice of utilizing social media as a way of disseminating information. With the nature of the items, the attribute or factor structure is labeled as "*Communication and Media*".

This finding is parallel to the pronouncements of Dougherty (1992), who elucidated that in a disaster situation, information must be disseminated quickly to people affected by the disaster as well as to those responding to the disaster. Communication during a disaster requires many standard crisis communication techniques. Furthermore, the study is similar to what has been verbalized by Seeger (2006), who mentioned that before a crisis or disaster occurs, organizations should establish relationships with other credible sources, as well as various stakeholders. The

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media, as a communicator with the public, should be viewed as a resource throughout a crisis.

Table 9. Constructs and Loadings under the Fifth Attribute of Business Resilience in the Context of Post-Disaster Recovery

Factor	Item	Construct	Factor Loading
Communication and Media	3	Utilizes social media as a tool to disseminate information regarding risks	0.805
	5	Utilizes technology in monitoring and assessing the extent of the damage of the disaster	0.749
	33	Handles the communication channels of the organization effectively	0.652
	44	Formulates quick decision-making protocols in times of disasters	0.601
	16	Get essential updates regarding impending disasters from the Internet	0.598

4.3 Proposed Business Resiliency Framework

As reflected in Figure 7, the exploratory factor analysis yielded five (5) valid dimensions of business resilience in the context of post-disaster recovery in the case of Davao City. These five factors are labeled as (a) institutional control, (b) planning and preparedness, (c) philosophy and integrity, (d) external support and linkages, and (e) communication and media. These five dimensions are the components that typify a realistic business resilience model that would benefit the businesses concerned in withstanding the future onslaughts of disasters. This framework explains 72.564 percent of the variations of the data as gleaned from the collated responses of the businesses' managers and representatives. As such, the five key components are suggested to be looked upon by the concerned to improve and strengthen the adaptive capacity of the businesses, making it resilient against incoming disasters brought by the external environment.

A business that is said to be resilient needs to have control of its institutional affairs and make sure that it has equipped itself with the necessary steps to withstand incoming disasters. This is manifested by the business's steps in consulting with professionals and experts with regards to disaster risk reduction and mitigation.

Second, it must plan for what lies ahead. This is manifested when businesses prepare its managerial, financial and workplace plans in tight with impending disasters. Planning will also keep the business on hold on possible resources it can use in the times of disasters and calamities.

Third, it should imbibe in its operational philosophy the value of foresight. The corporate philosophy of the business of serving its clients should not be marred by simple lapses of oversight. A business that instils the philosophy of "customer first" and "business as usual" is a business with integrity.

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Fourth, businesses need to strengthen its linkages outside its operations. Government interventions and the role of community and civic organizations are vital towards the revitalization of the business after the catastrophic events. Volunteers help in the restoration and refurbishment of the business and its surroundings, and they are part of the stakeholders that businesses need to link with. External fund sources are quite rare among businesses; however, support from the clients, suppliers as well as the concerned citizens must be a consideration of businesses, as they are important key players in the post-disaster recovery of businesses.

Lastly, the role of communication and social media cannot be denied for their efficacy. Internal communication must be strengthened as well as the use of technology in communication and being informed should be encouraged. Thus, a business that is resilient considers the value of information exchange and dissemination.

Figure 7. Developed Business Resilience Framework Showing the Five Derived Attributes

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents a recapitulation of the study including the summary of findings, the conclusions drawn from the findings and the researcher's recommendations.

5.1 Summary

The purpose of the study is to determine the salient dimensions of business resilience in the context of post-disaster recovery among business establishments in Davao City. A descriptive survey method was used to describe the level of the factors or attributes that theoretically describe or characterize the extent of business resilience, while multivariate analysis via factor analysis (EFA) was used to discover these factors in its various analysis and techniques. Primary data were gathered through the use of survey questionnaires distributed to a sample of 392 business establishments in three

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barangays including MatinaAplaya, Matina Crossing and MatinaPangi, which are geo-hazard areas based on proneness to disasters. In the analysis of the data, descriptive statistics and data reduction via exploratory factor analysis were used.

Results of the study revealed that most of the businesses are engaged in accommodation and food service (18.67%), followed by manufacturing (16.67%), merchandise and grocery distribution (15%), agriculture (14%), hardware and furniture stores (11.67%), wholesale, retail trade and repair of vehicles (9.33%), financial and insurance activities (4%), education (2.67%), arts, entertainment and recreation (2.67%), construction (2%), administrative and support services (1.67%) and professional and technical services (0.67%). There are also businesses who engaged with business lines not mentioned (1%).

As to ownership type, 68.33% are established as sole proprietorship, 17.33% are cooperatives, 8.33% are corporations and 6% are partnerships.

As to years in operation, 54.67% of the business have been into business for one to five years, followed by those who have just started the business or have been around for less than a year (23.67%), those that are 11 years and above in years of operations, and those who have been in the business for six to ten years (8.67%).

Lastly, in terms of establishment type, 34.67% of the respondent businesses are categorized as medium enterprises with total assets of more than Php 15 million up to Php 100 million, followed by 29% categorized as micro-businesses with total assets of not more than Php3 million, 21.33% categorized as small businesses with total assets of more than Php 3 million to Php 15 million, 10.33% categorized as cottage firm/industry with total assets less than Php 3 million, and 4.67% categorized as large businesses with total assets above Php 100 million.

Six factors can be extracted from the 50 items submitted for exploratory factor analysis. These six factors explained 72.564 percent of the variations in the data. The 50 items loaded successfully into six components. However, one factor was excluded from the factor structure identifications due to item isolation issues. The remaining five constructs are named as (a) institutional control, (b) planning and preparedness, (c) philosophy and integrity, (d) external support and linkages, and (e) communication and media.

5.2 Conclusions

Based on the findings of the study, the study concludes that business resilience is multidimensional. In this study, there are five factors (institutional control, planning and preparedness, philosophy and integrity, external support and linkages, and communication and media) that characterize the businesses' resilience in the context of post-disaster recovery.

5.3 Recommendations

Based on the findings and conclusions of the study, the following recommendations were presented:

The Department of Trade and Industry, City Government of Davao City and its Disaster Risk Reduction and Management Council, City Social Services and Development Office, non-government organizations, lending institutions, enterprise and

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livelihood committee of Barangay Council and the like may adopt the findings of the study as well as the derived framework to be a basis for improving the adaptive capacity and readiness of the businesses under their jurisdictions. It is suggested that they will maintain or increase the current level of their resilience by looking on the state and situation of the five areas derived in the model.

The businesses involved may also utilize the proposed framework as a basis for the improvement of their adaptive capacity towards disasters as well as necessitate certain institutional changes and to foster stronger linkages.

Furthermore, the generated dimensions from the exploratory factor analysis may be a focus for policy implications and implications for practice by the administrators of the City and barangay local government units.

Further studies as to determining factors of business resilience in a broader scope or in a different statistical methodology should be conducted by future researchers. Also, a qualitative analysis of the findings of this study is recommended to triangulate the findings.

APPENDIX

Appendix 1: Survey Questionnaire

Part I: Profile of the Business

Direction: Please indicate your answer by filing up the spaces provided or checking the appropriate boxes.

Business Name (Optional): _____

Nature of Business

- ☐ Accommodation and food service
- ☐ Administrative and support services
- ☐ Agriculture,
- ☐ Arts, entertainment and recreation
- ☐ Construction,
- ☐ Education,
- ☐ Financial and insurance activities
- ☐ Hardware and furniture stores
- ☐ Manufacturing,
- ☐ Merchandise and grocery distribution,
- ☐ Professional and technical services,
- ☐ Wholesale, retail trade and repair of vehicles
- ☐ Others (please specify): _____

Ownership Type

- ☐ Sole proprietorship
- ☐ Corporation
- ☐ Partnership
- ☐ Cooperative

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Years in Operation

☐ 0-11 months ☐ 6-10 years

☐ 1-5 years ☐ 11 years and above

Establishment Type

☐ Cottage industry (total assets less than 3 million pesos)

☐ Micro business (total assets of not more than 3 million pesos)

☐ Small business (total assets of more than 3 million to 15 million pesos)

☐ Medium business (total assets of more than 15 million up to 100 million pesos)

☐ Large business (total assets above 100 million pesos)

Part II.

Direction: The information that is drawn from the items of this questionnaire tells about your business' resilience towards disasters and the mechanisms that your business might implement in recovering from the aftermath of a disaster. Just feel free to check the most appropriate rating from the scale.

Scale	**Response**
7	Strongly Agree
6	Agree
5	Somewhat Agree
4	Neither Agree Nor Disagree
3	Somewhat Disagree
2	Disagree
1	Strongly Disagree

	A business that is resilient in disasters…	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1.	Sources expert assistance concerning disaster preparations in times of need							
2.	Coordinates with local planners, emergency managers, and public works officials to prepare for instances of damages or loss of properties							
3.	Utilizes social media as a tool to disseminate information regarding risks							
4.	Imbibes with a compassionate corporate philosophy of taking care of the other before self-interest							
5.	Utilizes technology in monitoring and							

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	assessing the extent of the damage of the disaster							
6.	Maintains the philosophy of "business as usual"							
7.	Meets with other businesses in working together to rebuild what was left of their establishments							
8.	Participates in talks or discussions about climate change or any environmental issue							
9.	Develops strong relationships with suppliers							
10.	Shows compassion to others who are victimized by calamities							
11.	Is well supported by the local community							
12.	Compensates the efforts of volunteers to rebuild the business							
13.	Embed responsibility for business continuity throughout the organization							
14.	Indicates readiness of external forces in its vision and/or mission statement							
15.	Must be confident in its future activities							
16.	Get essential updates regarding impending disasters from the Internet							
17.	Understands that risks are existing							
18.	Has a workplace health and safety plan							
19.	Conducts pre-disaster assessments on the extent of damages that will hit the business							
20.	Has a business continuity plan							
21.	Emphasizes a culture of putting in the best effort in the business							
22.	Keeps a stock of supplies and materials that can be used in times of emergencies							
23.	Generates fund sources to revitalize business operations							
24.	Requests employees to cooperate with in rebuilding the business							
25.	Adapts well to differing conditions							
26.	Has a sound financial management plan							
27.	Conducts post-disaster assessments on the extent of damages that have hit the business							
28.	Maintains adequate number of staff							
29.	Takes business risk management to a new level							
30.	Stores a contact list of all personnel.							
31.	Has a plan to address governance and compliance issues							
32.	Has a long-term plan to strengthen the business							
33.	Handles the communication channels of the organization effectively							
34.	Hires a disaster and risk mitigation officer							

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35.	Encourages all personnel to get insurance for future claims							
36.	.Have risk and vulnerability assessments							
37.	Has a mentor or consultant who discusses business preparedness with the owners.							
38.	Can improvise when usual resources are not available							
39.	Invests for insurance of the building and of the products and inventory in it from possible earthquake, fire or *force majeure*							
40.	Invests in training its personnel for risky situations							
41.	Does disaster preparedness and drills for earthquakes, fires and typhoons							
42.	Prepares post-disaster plans to see the weaknesses of the establishment after the damage							
43.	Maintains a sense of control about what happens to the business							
44.	Formulates quick decision-making protocols in times of disasters							
45.	Ensures that readiness is observed at all times							
46.	Initiates researches relative to disaster risk reduction and management							
47.	Ensures that transport vehicle is prepared at all times in case disaster sets in							
48.	Provides a resource manual for risk reduction and management							
49.	Has a strong relationship with its customers/clients							
50.	Keeps a network of contacts with government agencies and NGOs							

***** This ends the survey. Thank you very much! *****

ACKNOWLEDGEMENT

The researcher wishes to express his deepest gratitude and sincere appreciation to the persons what have tirelessly and unselfishly contributed and helped much to the realization of his study:

To Prof. Samuel O. Parami, thesis adviser, for his guidance, expertise, corrections, untiring patience and understanding in shaping this study;

To the thesis advisory committee headed by Dr. Danilo B. Pacoy for his brilliant insights and constructive criticisms for the improvement of the study, together with the expert members: Dr. Enrico C. Yee, Jr. and Mr. John Vianne B. Murcia for their valuable comments and suggestions that contributed much and who generously gave

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their time to shed light on his queries and for helping analyzing the data despite of the busy schedules;

To Brgy. Captain Angela Librado-Trinidad of Barangay Matina Crossing, Brgy. Captain Nestor Cirunay of Brgy. Matina Aplaya, Brgy. Captain Carmelo Arana of Brgy. Matina Pangi and to all respective Barangay Staff, whose effort and support in conducting the research will never forget;

To the Administration, Faculty, Students and Staff of University of Southeastern Philippines and Compostela Valley State College, for inspiring and patiently supporting his every step of the way;

To all businessmen and entrepreneurs in Brgy. Matina Crossing, Brgy. Matina Aplaya and Brgy. Matina Pangi who gave their time and participation to answer the survey questionnaires honestly and share their insights related to the study;

To friends and classmates, whose assistance and support to him will forever be thankful;

To Dr. Stephen James Duns, Research Consultant, whose highly noteworthy pieces of advice and suggestions have helped establish the sound direction and strong reliability for this research study;

To Tatay, Nanay, Kuya and Ate, who never failed to encourage and remind him to encourage and remind the researcher that he can do it;

To Society of Interdisciplinary Business Research Convenor and Staff, for accepting and giving the opportunity to present this research during the SIBR Hong Kong Conference 2015;

The Lord Jesus Christ, for His undying love, grace and commitment and for making everything possible for the researcher, to Him be all the glory, honor and praise!

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