PREDICTORS OF BUSINESS RESILIENCE AMONG MICRO, SMALL AND MEDIUM ENTERPRISES IN MONKAYO, DAVAO DE ORO, PHILIPPINES IN THE CONTEXT OF COVID-19 PANDEMIC

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ABSTRACT

Micro, Small and Medium Enterprises (MSMEs) are greatly affected with Covid-19 pandemic and the vulnerability of this sector affects employment, tax generation and the economy as a whole. In the local context, this study explores entrepreneurial orientation, crisis management, external support and linkages, and communication and social media as predictors of business resilience among MSMES in Monkayo, Davao de Oro, Philippines. The measurement method uses stepwise and hierarchical regression analysis from the results of the survey using Slovin's Formula of a stratified random sample. Adapted questionnaire was used in data gathering. The results revealed that all the factors were significant predictors of business resiliency among Micro, Small and Medium Enterprises (MSMEs). It was also revealed that there is no significant difference on the level of business resiliency among MSME when respondents are grouped according to years in business and establishment type. Using hierarchical regression analysis, years in business do not significantly moderate the relationship between the significant factors and the business resiliency among MSMEs but provided significant moderating effect in terms of establishment type. Business owners, the academe and the government are urged to develop plans and programs to mitigate the risk of doing business in times of pandemic through business continuity plan and other form of assistance.

Keywords: Business Resilience, Micro, Small and Medium Enterprises, Covid-19 Pandemic, Multiple Regression Analysis, Philippines.

INTRODUCTION

Background of the Study

Business resilience has brought the attention among global business leaders and the government due to the Covid-19 Pandemic. Aside from health protocols, there is a growing need to address the concerns of the economy and the Micro, Small and Medium Enterprises will become highly vulnerable in times of disaster and pandemic. According to Sanchis, Canetta, & Poler (2020), enterprise resilience is a key indicator to continue business activity and every entrepreneur should plan for a long-term continuity. In addition, World Economic Forum (2020) implies that MSMEs and entrepreneurs need to respond effectively in five key pillars that together form resilience and these are leadership, revenue, organizational, financial and operational factors.

Globally, with many major cities and entire countries in lockdown or quarantine, global and regional supply chains have been severely disrupted, hampering the ability of many suppliers to move materials and products to vendors, even where demand has remained strong (United Nations Disaster Risk Reduction - Regional Office for Asia and Pacific, 2020). In addition, International Labour Organization (2020), stressed that small and medium-sized enterprises are struggling to survive the effects of COVID-19. More than 70% of global employment and 50% of GDP are greatly affected and solutions are needed to give them the support they need to survive and continue to contribute to the global economy. MSMEs suffered lower revenues, reduced demand for orders, cash flow shortages, and reduced workforce.

In the Philippines, MSMEs comprised 99.5 percent of the businesses in the country and according to the report of World Bank and the Organization for Economic Cooperation and Development on business operating on face book, 35 percent have had to reduce work force as a result of pandemic. It is also stressed that 46 percent of the local business operation reported decline of sales by 50 percent as compared last year and business owners believed that they are expecting cash flow to continue being challenge in the next few months (Department of Trade and Industry, 2020). These struggles cannot be ignored, as MSMEs contribute a significant portion of our country's gross domestic product of about 36 percent and employ at least 62 percent of the Filipino workforce.

In Monkayo, Davao de Oro, there are about 1487 registered MSMEs and majority of this MSMEs belongs to Micro/Cottage Industries. Although it does not have a highly vulnerable business like for tourism, travel, entertainment, other service industries, it is important to measure the level of business resilience among MSMEs and the factors affecting to it. Through this study, MSMES may find ways to adapt to the current market conditions with continued quarantine and physical distancing protocols and gear up for the new normal by highlighting the factors that predicts business operations. Moreover, the right policies are crucial to ensuring MSMEs survival. Despite the significant struggles that MSMEs are facing, the government response to the COVID-19 pandemic can help nurture a positive, resilient, and sustainable future for MSMEs.

Theoretical framework

This study was based on the principles and hypotheses that the researcher objectively tested, from which specific variables were extracted from. Such theoretical foundations supported the researcher in refining the research issue and in establishing the conceptual framework. The theories adopted include the Compensatory Model, the Challenge Model, and the Protective Factor of Immunity versus Vulnerability Model (O'Leary, 1998); Business Resilience Framework (Sanchis, Canetta & Poler, 2020); and the Organizational Resilience Theory (Duchek, 2020). Entrepreneurial Orientation refers to the strategic orientation which captures an organization's strategy-making practices, managerial philosophies, and firm behaviors that are entrepreneurial in nature (Kelly, 2016). The EO is measured in terms of entrepreneurial characteristics such as risk-taking, proactiveness, innovativeness, competitive aggressiveness and autonomy. Crisis Management refers to the application of strategies designed to help an organization deal with a sudden and significant negative event (Zamoum & Gorpe, 2018). It highlights the stages of crisis management from pre-crisis, crisis response and post-crisis action plan. External Support and Linkages refers to assistance and collaboration from government, customers, suppliers, universities or research organizations providing information on technologies, consumer needs or the market, or engaging in joint research and development. The importance of inter-personal dynamics, attitude and expectations in facilitating successful collaboration is a need for MSMEs

in this aspect (Freel, 2000). Communication and Social Media refers to the interactions among people in which they create, share, and/or exchange information and ideas in virtual communities and networks (Edosomwan, Simeon, Prakasan, Kouame, Watson, & Seymour, 2011).

The dependent variable is business resilience which refers to dynamic capability of an enterprise to overcome extreme adversity (Vargas, Rivera-Rodriguez, & Hugo-Alberto (2019). It emphasizes the organization's ability to restore to its original state or even develops a new skill in disruptive conditions (Xiao & Cao, 2017). Ruiz-Martin, Lopez-Paredes and Wainer (2018) added that resilience is the measurable combination of characteristics, abilities, capacities or capabilities that allows an organization to withstand known and unknown disturbances and still survive.
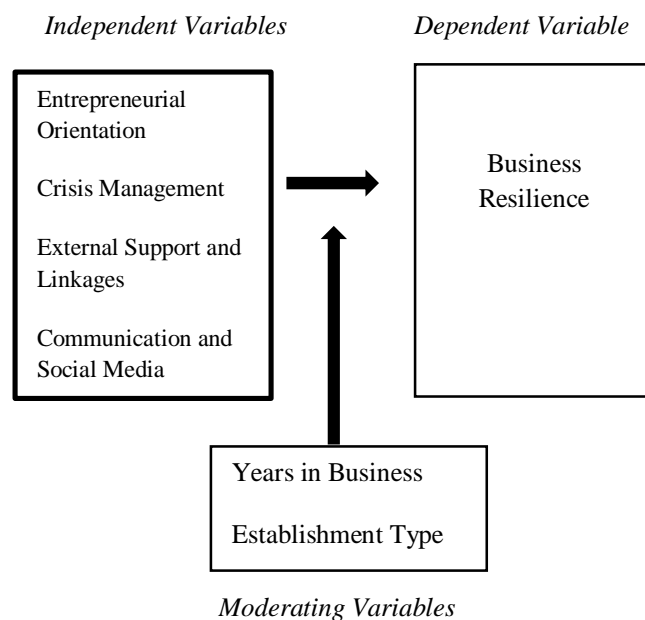
Conceptual Framework

Independent Variables   *Dependent Variable*

Entrepreneurial Orientation

Crisis Management

External Support and Linkages

Communication and Social Media

Business Resilience

Years in Business

Establishment Type

Moderating Variables

FIGURE 1
CONCEPTUAL FRAMEWORK OF THE STUDY

Based on the literature and studies reviewed, this study adopted the conceptual framework (Figure 1) with independent variables: Entrepreneurial Orientation, Crisis Management, External Support and Linkages, and Communication and Social Media and dependent variable, Business Resilience among MSMEs. The framework integrated the factors identified in Business Resilience to examine the business owner's perception of the current Covid-19 pandemic and the post-pandemic business activities. Despite the fact of the extensive researches in business resilience, there is still a need for a systematic investigation and theorizing of the prominent factors that apply to a context-based resiliency approach in business.

The independent variables (Institutional Control, Crisis Management, External Support and Linkages, and Communication and Online Transactions) are deemed to be the factors that will predict the dependent variable (Business Resilience among MSMEs) (Hidayat, et.al., 2020; Kampos, 2016).

The conceptual framework blended the Business Resilience Model by identifying these independent variables to lead to not only to existing Covid-19 Pandemic but towards Business

Continuity and Post-Pandemic time. Furthermore, the variables are in need of refinement that is centered on how business owners interact with internal and external factors of business.

Research Objectives

The study was conducted to examine the factors that predicts business resiliency among Micro, Small and Medium Enterprises in Monkayo, Davao de Oro, Philippines in the context of Covid-19 pandemic. In particular, the study aimed to answer the following specific objectives.

1. To determine the demographic characteristics of Micro, Small and Medium Enterprises in Monkayo, Davao de Oro, Philippines in terms of: nature of business, ownership type, years of business and establishment type.
2. To determine the level of entrepreneurial orientation, crisis management, external support and linkages, and communication and social media among Micro, Small and Medium Enterprises in Monkayo, Davao de Oro, Philippines.
3. To determine the level of business resilience among Micro, Small and Medium Enterprises in Monkayo, Davao de Oro, Philippines.
4. To ascertain if the factors (entrepreneurial orientation, crisis management, external support and linkages and communication and social media) significantly predicts the business resiliency among Micro, Small and Medium Enterprises in Monkayo, Davao de Oro, Philippines.
5. To determine if there is a significant difference on the level of business resiliency among MSMEs if the business owners are grouped according to years in business and establishment type.
6. To establish if the respondent's years in business and establishment type moderate the relationship between the independent variables (entrepreneurial orientation, crisis management, external support and linkages, and communication and social media) and the dependent variable (business resiliency) among MSMEs.

Null Hypothesis

1. The independent variables (entrepreneurial orientation, crisis management, external support and linkages, and communication and social media) do not significantly predicts the business resiliency among MSMEs.
2. There is no significant difference on the level of business resiliency among MSMEs when respondents are grouped according to years in business and establishment type.

The respondents' years in business and establishment type do not significantly moderate the relationship between the independent variables (entrepreneurial orientation, crisis management, external support and linkages and communication and social media) and the dependent variable (business resiliency among MSMES).

METHODOLOGY

Research Design

This research employed descriptive-correlational design to describe and predict how the factors or variables chosen were closely related. The correlational technique was planned to explore the connection between two or more variables in the form of a correlation coefficient. This was supported by Creswell (2014), who expressed that in correlational research structure, the

researcher uses correlation statistical test to portray and quantify the level of relationship between the independent variables and dependent variable. The research provided a moderately fundamental structure of what was happening at a given time and permitted the improvement of inquiries for further investigation. Additionally, this allowed for testing expected relationships between factors or variables, making assumptions and predictions. Multiple Regression Analysis (MRA) was utilized in this study to analyze the relationship between business resilience among MSMEs (single dependent variable) and four independent or predictor variables namely: entrepreneurial orientation, crisis management, external support and linkages and communication and social media. The study also employed the moderating effects of age and sex to reveal if it changes the direction of the relationship between the independent variables and dependent variable. The Hierarchical Regression Analysis by Hayes was used for this aspect of the study.

By nature, the analysis was cross-sectional. It applied survey method of data gathering using adapted questionnaire to obtain pertinent information from randomly selected MSME owners in Monkayo, Davao de Oro, Philippines.

Research Locale

This research study provided a comprehensive analysis of factors that significantly predicts the business resiliency among MSME owners in Monkayo, Davao de Oro. Moreover, this study only covered the business owners who are residing in Monkayo, Davao de Oro at the time the study was conducted. As a first-class municipality, Monkayo has a total of 1487 registered MSMEs as of September, 2020 according to the Department of Trade and Industry-Davao de Oro Provincial Office. Figure 2 showing the research locale of the study.
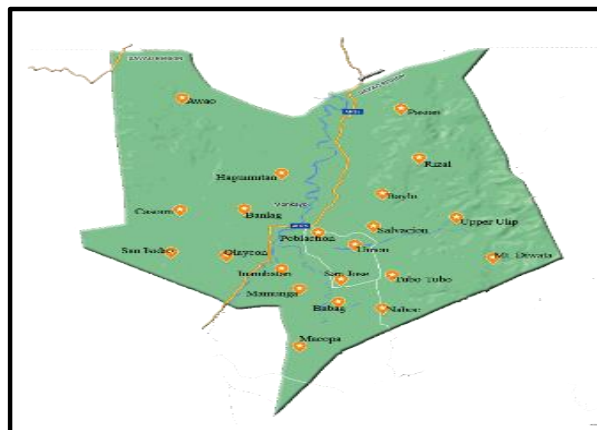

FIGURE 2
RESEARCH LOCALE

Respondents of the Study

The researcher distributed adapted survey questionnaire to 306 to 367 business owners throughout Monkayo, Davao de Oro (with 20% non-response rate). Selection of respondents were made through the assigned research enumerators, whose familiarity of the business establishments, the number required per barangay and the conduct of the survey were deemed critical.

Sampling Techniques

Stratified Random Sampling was utilized in determining the respondents of this study. When analyzed across the entire population, the scale of each stratum was proportionate to the

population size of the strata. Since the target population was identified based on natural groupings and some groups have more respondents than the other groups, the sampling approach was stratified based on the population distribution. Hence, this study used number of registered MSMEs of 21 barangays in the Municipality of Monkayo as the sampling frame to determine the respondents. The identification of each sample was based on percentage of distribution across number of MSMEs of each barangay. However, majority of the respondents in this study are in Barangay Poblacion since it is the center of trade and commerce in the municipality. The researcher utilized Slovin's (1960) sampling formula, applied in large populations with the intent of generating a representative sample size, as basis in determining the number of sample size per business owner's category and per barangay in the municipality. This sampling formula was employed mainly by determining a sample from 1487 registered MSMEs in Monkayo, Davao De Oro according to the Department of Trade and Industry.

Statistical Treatments

In presenting, interpreting and analyzing the data gathered, varied statistical tools and techniques were used. Statistical Package for Social Sciences (SPSS) version 23 was utilized in the analysis of the data. Descriptive statistics such as frequency counts and percentages were used to determine the respondents' profile. Mean scores and standard deviation values were used to measure the responses to factors predicting the business resiliency among MSME owners. Grouped mean score comparisons were made across the respondent's profile attributes (years in business and establishment type) using Analysis of Variance (ANOVA). Pearson's Product-Moment Correlation was used in determining the magnitude of the correlation coefficient between factors and the business resilience among MSMEs in Monkayo, Davao de Oro. In using this tool, the strength of the correlation coefficient (r) was assessed using the guide provided by Hair, et.al. (2014) as presented under Table 1.

Table 1
RULES OF THUMB ON THE STRENGTH OF CORRELATION COEFFICIENTS

Range Coefficient		Description of Strength
From	**To**	
±0.00	±0.20	Very weak to no correlation
±0.21	±0.40	Weak
±0.41	±0.60	Moderate
±0.61	±0.80	Strong
±0.81	±1.00	Very Strong

Multiple Regression Analysis was used to determine the factors that predicts the business resiliency among MSMEs. The technique conducted was stepwise method. This was a modification of the forward selection so that after each step in which a variable was added, all candidate variables in the model are checked to see if their significance has been reduced below the specified tolerance level. If a nonsignificant variable is found, it is removed from the model. As a forecasting tool, stepwise multiple regression analysis brought predictor variables to the regression model one step at a moment with focus on the predictor leading to the greatest increase in the adjusted determination coefficient (r2). Variables were then dropped if their predictive power dropped to a non-significant level, as another variable was added in the next step (Hair, et. al, 2014). The coefficient of determination (r2) has shown, in percentage terms, the amount of

variation in the independent variable vis-à-vis the dependent variable. It also added the understanding or speculation about the unexplained variation in the process. Hierarchical Regression Analysis was also used. The hierarchical technique is where associations of independent variables were entered cumulatively in accordance with a hierarchy indicated by the study hypothesis or logic and used when there is a theoretical basis for one or a group of independent variables to be in the model before another. It is a multiple regression analysis technique in which the variables were entered one at a moment in the regression equation as determined by the researcher through Process v3.4 by Professor Hayes (2018).

Data Collection Procedure

The respondents were selected to participate in an adapted survey questionnaire where they were asked to provide answers in the most precise and insightful manner possible. The respondents were randomly selected in each barangay in the municipality of Monkayo. The survey took three weeks to complete and to collect all the required data and the researchers also utilized google forms. There was a minimum of 21 enumerators who assisted in the conduct of the study. Enumerators undergone an orientation on the purpose of the study, the process of random sampling distribution, the number of respondents required in each specific barangay, the items of the questionnaire and to ensure consistency of data collection method. Quantitative data was used to present the profile of the respondents. A 6-point Likert scale was utilized to determine the influence of entrepreneurial orientation, crisis management, external support and linkages and communication and social media to the business resilience among MSMEs as well as to analyze the moderating variables. The indicators for each factor were assessed and evaluated using the Likert Scale as follows (Table 2).

Table 2
DESCRIPTION OF RATING SCALE USED FOR THE SURVEY QUESTIONNAIRE TOOL

Rating Scale	Mean Score Range Interval	Response Anchor	Descriptive Level
6	5.20 to 6.00	Strongly Agree	Extremely High
5	4.36 to 5.19	Agree	Very High
4	3.52 to 4.35	Somewhat Agree	High
3	2.68 to 3.51	Somewhat Disagree	Low
2	1.84 to 2.67	Disagree	Very Low
1	1.00 to 1.83	Strongly Disagree	Extremely Low

Ethical Considerations

The research study complied with the standards set by the Monkayo College of Arts, Sciences and Technology's Guidelines for Ethics in Research. The researcher strictly adhered to the objective of reaching the maximum level of ethical action or consideration in the scientific approach of research. Research ethics involved with requirements on actual data gathering, the protection of the respondents and the publication of the information were in adherence to the guidelines set by the College. The compliance to these guidelines assured the respondents' rights, dignity, safety, and welfare. It also guaranteed the credibility of the research results and the ethical principles of beneficence, justice, and autonomy. Hence, the researcher adhered to the full compliance to the standards of conducting an institutional research and corresponding ethical review following the study protocol assessments and standardized criteria. It was with highest

sense of responsibility that the researcher complied with the requirements of the ethical standards not limited to:

Voluntary participation: All respondents were given the free-will to participate without any form of force or intimidation. The respondents were carefully considered and adhered to the purpose and benefits of the study voluntarily.

Respect for anonymity and confidentiality: The confidentiality and anonymity of all respondents were strictly adhered to in this research. The rights of beneficence, respect for the dignity and fidelity were utmost consideration in the conduct of this study. The researcher assumed full management of private information in order to protect the respondents' identity.

Informed consent process: Respondents offered their approval in this research knowingly, willingly and intelligently, and in a clear and manifested manner. Free and informed consent needed in this study incorporates an introduction to the study and its purpose as well as an explanation about the selection of the research respondents and the procedures that were followed. The questionnaire produced by the researcher was free of difficult terms and was readily understood by the research respondents. It offered a clear perspective of the advantages that the researcher can produce to the general public and the Monkayo College of Arts, Sciences and Technology after conducting the research. The questionnaires were administered with the college authority's approval and support. Therefore, no study questionnaire was provided without authorization from the authorities that the vital elements of informed consent process administered clear disclosure, understanding, competency and voluntariness of respondents.

Risks: The research was no intention of risky circumstances on physical, psychological, or socio-economic implications among the respondents during the conduct of this study.

RESULTS AND DISCUSSIONS

Demographic Profile of the MSME

Tables 3-6 presented below show the profile of the respondents in terms of nature of business, ownership type, years in business and establishment type.

Nature of Business: 64.29% of the respondents belongs to the wholesale and retail trade, seconded by 20% belonging to the food and service activities and the remaining 15.71% belongs to computed related services, construction, agriculture, and service sector.

Table 3
NATURE OF BUSINESS

Nature of Business	Frequency	Percentage
Wholesale and Retail Trade	225	64.29%
Food and Service Activities	70	20.00%
Computer Related Services	25	7.14%
Construction	10	2.86%
Agriculture	15	4.28%
Service Sector (Salon/Barbershop, etc.)	5	1.43%
Total	**350**	**100.00%**

Ownership Type: 97.14% of the respondents belongs sole proprietorship and 2.85% belongs to cooperative.

Table 4
OWNERSHIP TYPE

Ownership Type	Frequency	Percentage
Sole Proprietorship	340	97.14%
Cooperative	10	2.85%
Total	**350**	**100.00%**

Years in Business: Based on the data in Table 3, 42.86% of the respondents are operating the business for 1-5 years, followed by 6-10 years by 27.43%. 17.14% operated the business for less than a year and 12.57% for more than 11 years.

Table 5
YEARS IN BUSINESS

Years in Business	Frequency	Percentage
0-11 months	60	17.14%
1-5 years	150	42.86%
6-10 years	96	27.43%
11 years and above	44	12.57%
Total	**350**	**100.00%**

Establishment Type: 76.90% of the respondents belongs Micro/Cottage Industries and the remaining 23.10% belongs to small and medium enterprises.

Table 6
ESTABLISHMENT TYPE

Establishment Type	Frequency	Percentage
Micro/ Cottage Industries	270	76.90%
Small	50	14.20%
Medium	30	8.50%
Total	**350**	**100.00%**

Results on the Level of Entrepreneurial Orientation, Crisis Management, External Support and Linkages, and Communication and Social Media among MSME Owners

Table 5 shows the level of entrepreneurial orientation, crisis management, external support and linkages, and communication and social media among MSME Owners. For the crisis management, the over-all mean was 4.50 with a descriptive equivalent as very high. It is being followed by Entrepreneurial Orientation with an over-all mean of 4.45 with a descriptive equivalent as Very High. The other factors have a descriptive equivalent as High with External Support and Linkages with an Over-all mean of 4.24 and Communication and Social Media with an Over-all Mean of 4.03 respectively (Table 7).

Table 7
LEVEL OF THE FACTORS PREDICTING BUSINESS RESILIENCY OF MSMES

Factors	Over-all Mean	Descriptive Equivalent

Entrepreneurial Orientation	4.45	Very High
Crisis Management	4.50	Very High
External Support and Linkages	4.24	High
Communication and Social Media	4.03	High

Results on the Level of Business Resilience among MSMEs in Monkayo, Davao de Oro Philippine

Table 8 shows the level of business resiliency among MSME owners in Monkayo, Davao de Oro. The overall mean was 4.499 with a descriptive level of very high. This implies that MSME owners in Monkayo, Davao De Oro perceived resiliency as highly observed in the business. The assumptions were based on the level of business resiliency which describes the intensity of running the business amidst crisis, innovation, and engaging other opportunities among MSME owners. This also highlights the need for business continuity and the ability of organizations to rapidly adapt and respond to all types of risks. Besides the ability to face the consequences of a major incident, business resilience also includes the capacity of an organization to adapt and adjust to a new environment and new circumstances amidst Covid-19 Pandemic including the Post-Recovery plan.

Table 8
LEVEL OF BUSINESS RESILIENCY AMONG MSMES

Statements	Mean	Std. Dev.	Description	Interpretation
During crisis, we still run our business as usual.	4.074	.914	High	This indicates that MSME owners perceived business resiliency as moderately manifested in business.
The sales we received still cope with the financial challenges of the business.	4.069	.930	High	
We will continue to run our business because a crisis is not something to be avoided but it is a challenge that must be faced.	3.991	.890	High	
The business is being attuned to marketing changes and vulnerabilities.	4.046	.922	High	
The business can easily source out loans in any financial institutions.	4.589	1.166	Very High	This indicates that MSME owners perceived business resiliency as highly manifested in business.
It can create innovative ideas to adjust prices and sales.	4.863	1.0092	Very high	
The business establishment is change ready.	5.117	.9181	Very High	
The owner can make a good business decision making.	4.874	1.0496	Very High	

The business employs other opportunities in terms of goods or services.	4.874	1.0496	Very High	
Over-all Mean	**4.499**	**.548**	Very High	**This indicates that MSME owners perceived business resiliency as highly manifested in business.**

Results of Regression Analysis

To determine the factors that predicts the business resiliency among MSMEs in Monkayo, Davao De Oro, multiple regression analysis was performed to test the explanatory and predictive influence of the independent variables (Entrepreneurial Orientation, Crisis Management, External Support and Linkages, and Communication and Social Media) to the dependent variable (Business Resilience).   Prior to applying the stepwise method, the researcher determines suitability of multiple regression analysis using normality, multicollinearity, and homoscedasticity tests. An assessment of the normality of data is a prerequisite for many statistical tests, such as Multiple Regression Analysis, because normal data is an underlying assumption in parametric testing. However, various authors mentioned that for sample size of more than 200, the effect of non-normality will have a minimal effect on result. According to Hair, et.al (2014), larger sample sizes reduces detrimental effect of non-normality.

Test of Significant Relationship

As presented in Table 9, the correlations of the dependent and independent variables were as follows: entrepreneurial orientation (+.793), crisis management (+.972), external support and linkages (+.744), and communication and social media (+.617). This simply means that the dependent variable displays a relatively significant unit increase/decrease for every unit increase in the Independent Variables. Moreover, the strength of relationship was also reflected in the table. Among the factors, Crisis Management show very strong correlation and other variables show strong correlation towards Business Resiliency. As reflected also in the table, all independent variables Pearson R Correlations are highly significant.

Table 9
SUMMARY OF PEARSON'S R RESULTS

Independent Variables	Business Resilience of MSMEs	Sig.1 (1 tailed	Correlation Strength
Entrepreneurial Orientation	0.793	0.000	Strong
Crisis Management	0.972	0.000	Very Strong
External Support and Linkages	0.744	0.000	Strong
Communication and Social Media	0.617	0.000	Strong

The result of the Analysis of Variance (ANOVA) shows an F-test value of 2199.648 and p-value of .000 which is below .05. This indicates that all independent variables are related to the business resilience among MSMEs. This result provided an answer to research objectives # 4 and

rejected the null hypothesis #1 which states that the independent variables do not significantly predicts business resiliency among MSMEs. See Table 10.

Table 10
ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	99.196	1	99.196	5915.916	.000[b]
	Residual	5.835	348	.017		
	Total	105.031	349			
2	Regression	100.031	2	50.016	3471.420	.000[c]
	Residual	5.000	347	.014		
	Total	105.031	349			
3	Regression	100.536	3	33.512	2579.527	.000[d]
	Residual	4.495	346	.013		
	Total	105.031	349			
4	Regression	101.068	4	25.267	2199.648	.000[e]
	Residual	3.963	345	.011		
	Total	105.031	349			

a. Dependent Variable: BUSINESS RESILIENCE

b. Predictors: (Constant), CRISIS MANAGEMENT

c. Predictors: (Constant), CRISIS MANAGEMENT, EXTERNAL SUPPORT AND LINKAGES

d. Predictors: (Constant), CRISIS MANAGEMENT, EXTERNAL SUPPORT AND LINKAGES, COMMUNICATION AND SOCIAL MEDIA

e. Predictors: (Constant), CRISIS MANAGEMENT, EXTERNAL SUPPORT AND LINKAGES, COMMUNICATION AND SOCIAL MEDIA, ENTREPRENEURIAL ORIENTATION

Model Summary of the Regression Analysis

Table 11 reveals the model summary of the regression analysis. Results show that all independent variables are significant in the model which explains the variance of business resilience among MSMEs in Monkayo, Davao de Oro. The coefficient of determination (R-square) value of 0.962 means that 96.20% of variations in business resilience are explained by all independent variables. The stepwise regression results suggest a regression model fit that entrepreneurial orientation, crisis management, external support and linkage and communication and social media significant to the business resilience with p-values less than .05. The linear combination of these predictors explains that 96.20 percent of the variability in business resilience among MSMEs can be explained by the statistical significance of each independent variable within the model which shows $R^2 = .962$, F=46.323, and p<0.05. Further, the R^2 and the adjusted R^2 (.000) denotes a reliable model. Moreover, the model generated a Durbin Watson (DW) value of 2.028 which is interpreted as an acceptable level of serial correlation of residuals is relatively normal based on a rule of thumb for test statistic values in the range of 1.5 to 2.5. The result indicates a negative autocorrelation based on residuals from a statistical regression analysis. Generally, Model 4 has presented a highly significant F Ratio value of 46.223 at a significance value of 0.000 as presented in Table 11. This goes on to show that the model has represented an extensive amount of variance in the respondents' perceived level of business resilience in Monkayo, Davao de Oro, Philippines.

Table 11
MODEL SUMMARY[E] OF STEPWISE REGRESSION ANALYSIS

Model Summary[e]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.972[a]	.944	.944	.1294897646	.944	5915.916	1	348	.000	
2	.976[b]	.952	.952	.1200326576	.008	57.997	1	347	.000	
3	.978[c]	.957	.957	.1139802674	.005	38.830	1	346	.000	
4	.981[d]	.962	.962	.1071766082	.005	46.323	1	345	.000	2.028

a. Predictors: (Constant), CRISIS MANAGEMENT

b. Predictors: (Constant), CRISIS MANAGEMENT, EXTERNAL SUPPORT AND LINKAGES

c. Predictors: (Constant), CRISIS MANAGEMENT, EXTERNAL SUPPORT AND LINKAGES, COMMUNICATION AND SOCIAL MEDIA

d. Predictors: (Constant), CRISIS MANAGEMENT, EXTERNAL SUPPORT AND LINKAGES, COMMUNICATION AND SOCIAL MEDIA, ENTREPRENEURIAL ORIENTATION

e. Dependent Variable: BUSINESS RESILIENCE

The MRA Equation or the Regression Model is:

BUSINESS RESILIENCE = -.108 + (1.071*Crisis Management) + (-.439* External Support and Linkages) + (.151*Communication and Social Media) + (.233* Entrepreneurial Orientation)

=-.108 + (1.071 * 4.51) + (-.439 *4.25) + (.151* 4.03) + (.233* 4.25)

=-.108 + 4.83 + - 1.87 + 1.167 +.99

=**4.019 (Agree)**

This model implies that for each .108 decrease in business resilience perceived by MSME owners, there is a corresponding 4.93 increase in their perception of crisis management, 1.87 decrease in their perception of external support and linkages, 1.167 increase in communication and social media and .99 increase in entrepreneurial orientation.

Test of Significant Difference on the Level of Business Resiliency when Respondents are grouped according to Year in Business and Establishment Type

The next two tables will provide results regarding the test of significant differences between responses of respondents when grouped by years in business and establishment type using variance analysis (ANOVA).

Summary of Significant Difference when Grouped According to Years in Business

Table 12 & 13 presents the summary of variables that resulted to significant differences of respondents' responses when grouped according to years in business. Testing the data through the use of ANOVA resulted to a no significant difference among responses in business resiliency which was primarily identified under Levene's Test (Table 12). Thus, across all groups (years in business), there were no significant differences present for responses in terms of Business Resiliency (p-value of .181) at .05 level of significance. The assumption is based on level of significance (Sig.) under the table of Test of Homogeneity of Variance, thus the null hypothesis is rejected. Since the Anova shows no significant result, there is no need for a follow-up test to probe this difference in pairs through post-hoc test which analyzes the multiple pair comparison to support ANOVA results. This assumption was checked at the last right column Sig., under the Table of Test of Homogeneity of Variance. Therefore, from the results of the table, it shows that a p-value of .273 (at .05 level of significance) is not significant.

Table 12
TEST OF HOMOGENEITY OF VARIANCE

Test of Homogeneity of Variances

BUSINESS RESILIENCE

Levene Statistic	df1	df2	Sig.
1.304	3	346	.273

Table 13
SUMMARY OF SIGNIFICANT DIFFERENCE ON THE RESPONDENTS' LEVEL OF BUSINESS RESILIENCY WHEN RESPONDENTS ARE GROUPED ACCORDING TO YEARS IN BUSINESS

ANOVA

BUSINESS RESILIENCE

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.467	3	.489	1.633	.181
Within Groups	103.564	346	.299		
Total	105.031	349			

Summary of Significant Difference when Grouped According to Establishment Type

Table 15 presents the summary of variables that resulted to significant differences of respondents' responses when grouped according to establishment type. Testing the data through the use of ANOVA resulted to a no significant difference among responses in business resiliency which was primarily identified under Levene's Test (Table 14). Thus, across all groups (establishment type), there were no significant differences present for responses in terms of Business Resiliency (p-value of .430) at .05 level of significance. The assumption is based on level of significance (Sig.) under the table of Test of Homogeneity of Variance, thus the null hypothesis is accepted. Since the Anova shows no significant result, there is no need for a follow-up test to probe this difference in pairs through post-hoc test.

Table 14
TEST OF HOMOGENEITY OF VARIANCE

Test of Homogeneity of Variances

BUSINESS RESILIENCE

Levene Statistic	df1	df2	Sig.
.326	2	347	.722

Table 15
SUMMARY OF SIGNIFICANT DIFFERENCE ON THE RESPONDENTS' LEVEL OF BUSINESS RESILIENCY WHEN RESPONDENTS ARE GROUPED ACCORDING TO ESTABLISHMENT TYPE

ANOVA

BUSINESS RESILIENCE

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.510	2	.255	.847	.430
Within Groups	104.521	347	.301		
Total	105.031	349			

In summary, the result reveals that the level of business resilience among MSMEs provide no significant differences in respondents' responses in terms of years in business and establishment type. Therefore, the decision is to accept the null hypothesis (Ho2) that there is no significant difference on the level of business resiliency among MSMEs in Monkayo, Davao de Oro when respondents are grouped according to years in business and establishment type in relation to Research Objective 5.

Results of Hierarchical Regression Analysis

Hierarchical multiple regression reveals the outcome of moderating effect through analysis of moderators (years in business and establishment type). In the analysis of moderating variables, it is imperative to determine the interaction effect, whether the moderating variable changes the direction and magnitude of the relationship between the variables (Hayes, 2018). In hierarchical regression analysis, there is a focal indicator that will serve as independent variable and the other indicator/s as covariate/s. The importance of the change in r2, and the interaction effect will provide significant evaluation of the results of hierarchical regression analysis. Thus, it further shows the result of the moderating effect analysis to prove if years in business and establishment type moderate the independent variables (entrepreneurial orientation, crisis management, external

support and linkages and communication and social media) in influencing the Business Resilience among MSMEs in Monkayo, Davao de Oro. Applying Process v3.4 of Andrew F. Hayes (2018), the results are presented below.

Table 16 shows the summary of moderating effect analysis to determine if years in business and establishment type significantly moderate the influence on entrepreneurial orientation, crisis management, external support and linkages and communication and social media towards the business resilience among MSMEs in Monkayo, Davao de Oro. The result indicates low significance of the moderating power of years in business and low influence of R2 change based on interaction with the business resilience (R2=.0024, p-value=.1432). In terms of establishment type, the result indicates high significance of the moderating power (Int_2) and the R2 change (R2=.0015, p-value=.0003) and therefore significant.

Table 16
SUMMARY OF MODERATING EFFECTS OF YEARS IN BUSINESS AND ESTABLISHMENT TYPE ON THE INFLUENCE OF THE FACTORS TOWARDS BUSINESS RESILIENCY AMONG MSMES

Moderating Variable	Focal Predictor	Co-Variates	Interaction with Business Resiliency (Dependent Variable)		R2 change
				p-value	
Years in Business	Crisis Management	Entrepreneurial Orientation External Support and Linkages Communication and Social Media	Int_1	.0000	.0024
			Int_2	.5220	
			Int_3	.1432	
Establishment Type	Crisis Management	Entrepreneurial Orientation External Support and Linkages Communication and Social Media	Int_1	.2359	.0015
			Int_2	.0003	

Table 17 & 18 shows the model summary of the moderating effects of years in business. The result shows an over-all model of F (935.2703, 339) equivalent to 10 with significant p-value of .0000 thus, showing the model fitness and 96.50% (R2) of this variance is due to focal predictor Crisis Management. However, b (slope) as shown in Table 18 for Years in Business at slope of --.2294, t= -1.3125, p value=.1902 show moderating variable years in business is not significant. Further, Interactions (Int_3) also shows p-value= .1432 which is greater than 0.05, therefore is not significant.

Table 17
Model Summary of Moderating Effects of Years in Business

Model Summary						
R	R-sq	MSE	F	df1	df2	p
0.9824	0.9650	0.0108	935.2703	10.0000	339.0000	0.0000

Table 18
MODEL

Model						
	coeff	se	t	p	LLCI	ULCI
constant	-.2778	.0845	-3.2885	.0011	-.4440	-.1116
CrisisMgt	1.0965	.0249	44.0185	.0000	1.0465	1.1455
W1	.4661	.1163	4.0071	.0001	.2373	.6949
W2	.1069	.1343	.7961	.4265	-.1573	.3711
W3	-.2294	.1748	-1.3125	.1902	-.5732	.1144
Int_1	-.0979	.0255	-3.8424	.0001	-.1481	-.0478

Int_2	-.0192	.0299	-.6409	.5220	-.0779	.0396
Int_3	.0563	.0384	1.4673	.1432	.0192	.1318
EntrepOr	.2298	.0338	6.7096	.0000	.1632	.2964
ExtSupport	-.4282	.0366	-11.6921	.0000	-.5002	-.3561
Comm	.1527	.0166	9.2163	.0000	.1201	.1852

Table 19 & 20 shows the model summary of the moderating effects of establishment type. The result shows an over-all model of F (1150.118, 341) equivalent to 8 with significant p-value of .0000 thus, showing the model fitness and 96.43% (R2) of this variance is due to focal predictor Crisis Management. Moreover, b (slope) as shown in Table 20 for Establishment Type at slope of -.7523, t=-3.7228, p value=.0002 show moderating variable establishment type is significant. Further, Interactions (Int_2) also shows p-value= .003 which is lower than 0.05, therefore significant.

Table 19
MODEL SUMMARY OF MODERATING EFFECTS OF ESTABLISHMENT TYPE

Model Summary						
R	R-sq	MSE	F	df1	df2	p
0.9820	0.9643	0.0110	1150.1118	8.0000	341.0000	0.0000

Table 20
MODEL

Model						
	coeff	se	t	p	LLCI	ULCI
constant	-.0473	.0573	-.8250	.4099	-.1601	.0655
CrisisMgt	1.0463	.0221	47.3043	.0000	1.0028	1.0898
W1	-.1340	.1397	-.9591	.3382	-.4088	.1408
W2	-.7523	.2021	-3.7228	.0002	-1.1497	-.3548
Int_1	.0369	.0311	1.1874	.2359	-.0243	.0982
Int_2	.1660	.0452	3.6693	.0003	-.0770	.2549
EntrepOr	.2231	.0338	6.9011	.0000	.1666	.2995
ExtSupport	-.4237	.0369	-11.4978	.0000	-.4962	-.3512
Comm	.1464	.0166	8.8190	.0000	.1137	.1790

Years in Business do not significantly moderate the factors that influence the business resiliency among MSMEs in Monkayo, Davao de Oro but significantly moderate in terms of establishment type. Therefore, the result provided an answer to research objective # 6 and rejected the null hypothesis #3 which states that there is no significant difference on the factors predicting the business resiliency among MSMEs in Monkayo, Davao de Oro when respondents are grouped according to Years in Business and Establishment Type.

CONCLUSIONS AND RECOMMENDATIONS

The main objective of this study was to introduce the concept of business resilience and continuity among MSMEs amidst Covid-19 pandemic. Exploring the business resilience framework within the context of present and post-pandemic nature of business, the study was conducted to determine the factors (entrepreneurial orientation, crisis management, external

support and linkages, and communication and social media) that predicts the business resilience among MSMEs in Monkayo, Davao de Oro. Specifically, the business owners of Micro/Cottage, Small and Medium Enterprises are the focus of this study since these industries provided 99.6 percent of the total business landscape in the Philippines and the study about business resilience among MSMES is relative rare as mentioned by many authors (Battisti & Deakins, 2015; Annarelli & Nonino, 2016). The outcome of the research will be valuable to the business owners to concentrate on the factors or variables that will induce sustainability or business continuity planning for the business.

Basically, this study aimed to present the MSME owners profiles in terms of nature of business, ownership type, years in business and establishment type ; to discover if there is a significant difference on the level of business resiliency among MSMEs when respondents are grouped according to years in business and establishment type; to establish if educational orientation, crisis management, external support and linkages and communication and social media predicts business resilience; and to ascertain if the factors influencing business resiliency on MSMEs are moderated by years in business and establishment type.

Conclusions

The importance of disaster recovery and business continuity has traditionally consisted with resiliency among MSMEs by addressing and mitigating the costs of rebuilding the business through varied factors. In the context of this study, the following conclusions are being drawn;

Majority of the MSMEs in Monkayo, Davao de Oro belongs to Wholesale and Retail Trade and Food and Service Activities. This concludes that the next wave of nature of business should address agriculture, construction, financial related activities, service sector, among others.

Majority of the MSMEs in Monkayo, Davao de Oro is under Sole Proprietorship. This concludes that the business climate should address partnership, cooperative and corporation within the locality.

Majority of the MSME owners are operating the business of less than 5 years. However, it does not provide a substantial gap for those operating 6-10 years and 11 years and above. This concludes to highlight sustainability of business for those operating less than 5 years.

Majority of the MSMEs are operating under micro/cottage industry type. This provides a gap towards business operating small and medium enterprises.

The level of entrepreneurial orientation and crisis management is very high and the level of external support and linkages and communication and social media is high. This concludes that MSME owners are highly concerned with the internal factors of business rather than external factors.

The level of business resiliency among MSME owners is very high. This concludes that MSME owners are resilient amidst Covid-19 pandemic and still maintains control on the operation of the business. MSME owners still have the capacity to absorb stress, recover critical functionality, and thrive in altered circumstances.

When it comes to the factors influencing the business resiliency among MSME owners, a new model is generated which explains that the BUSINESS RESILIENCE = -.108 + (1.071* Crisis Management) + (-.439* External Support and Linkages) + (.151*Communication and Social Media) + (.233* Entrepreneurial Orientation) + ε. It shows that all these variables significantly explain the business resiliency among MSMEs in Davao Region. The study concludes that with the continuing business operation amidst Covid-19 Pandemic, all these factors are essential in gearing up business operation.

There is no significant difference on the level of business resiliency among MSMEs when respondents are grouped according to years in business and establishment type. This manifest that regardless of the years of operation or establishment type, business owners are putting consideration on the day to day operation of the business amidst Covid-19 pandemic. This further concludes that business continuity plays a vital role in every business so that risk will be mitigated.

There is no hierarchical moderating effect of years on business on the factors (entrepreneurial orientation, crisis management, external support and linkages and communication and social media) towards the business resilience among MSME owners. This means that the intensity of crisis management and other co-variates to the business resiliency is not stronger or weaker for 0-11 months, 1-5 years, 6-10 years and 11 years and above. Thus, overall do not provide a strong influence for business resiliency. Moreover, in the context of establishment type as moderating effect, it requires a more viable model using proportionate sampling since most of the users are under micro/cottage industries. Although the result shows significant moderating effect, but the interaction between each group provides more studies.

Recommendations

Based on the detailed and significant evaluation of results, the researcher recommends the following:

To MSME Owners- This study suggests that MSME owners should make a business continuity plan to effectively manage the business. It should look for the weak points in terms of supply chain, financial capability, manpower, inventory and compliance to health protocols. MSMEs should employ portfolio mix among products, channels, location, and maximize opportunities like in social media marketing. It should continuously seek opportunity amidst adversity and take change for business as a new normal.

To Banks and Non-Bank Financial Institutions- The study suggests that Banks and Non-Bank Financial institutions should review and simplify the requirements of loan packages especially for micro/cottage industries. It will create opportunities for struggling business to generate capital and think of other nature of business in times of Covid-19 pandemic.

To Government Institutions- The study suggests to further review the policies of the government like for the following:

Bangko Sentral ng Pilipinas- Review existing interest rates and policies on business loans among bank and non-bank financial institutions to assure that financial products provide long-term liquidity and still manageable in terms of payments.

Department of Trade and Industry- Re-evaluate the policies, mandates and existing programs for MSME assistance in times of pandemic. It should properly assess those highly vulnerable business like the service sector (salons, motorcycle repair, among others). It should strengthen the operation of Go Negosyo Centers to track struggling business and provide assistance to avail government programs (technical or financial assistance) on MSMEs.

Local Government Unit- Provide tax remedies and source out loan assistance from the government and non-government organizations.

To the Academicians- The study suggests that academicians include the business resiliency as topic in core business management. The cases or literatures can be a source of Special Topics in Module for the implementation of blended learning modality.

To Higher Education Institutions offering Business Administration Programs- The study suggest that extension programs will be implemented by helping the MSMEs develop Business

Continuity Plan and conduct webinars/radio program/training on the importance of business resiliency model for business.

To Future Researchers- To conduct further studies on business resilience framework and the use of hierarchical moderating effect of other possible moderating variables. It is also important to conduct consumer behavior studies that will possibly affect business resiliency of MSMEs. Further studies must be conducted also to service sector, construction, garment industries, beauty products, entertainment, among others as some of these businesses have declared bankruptcy. This study may be conducted in a provincial or regional scope to identify the interaction of varied variables.

REFERENCES

Annarelli, A., & Nonino, F. (2016). Strategic and operational management of organizational resilience: Current state of research and future directions. *Omega, 62*, 1-18.

Battisti, M., & Deakins, D. (2017). The relationship between dynamic capabilities, the firm's resource base and performance in a post-disaster environment. *International Small Business Journal*, *35*(1), 78-98.

Creswell, JW. (2014). Research design: qualitative, quantitative and mixed Methods approaches (4th ed.). Thousand Oaks, CA: Sage.

Department of Trade and Industry. (2020). COVID-19 Resources - DTI Assistance to MSMEs.www.DTI.gov.ph.

Edosomwan, S., Prakasan, SK., Kouame, D., Watson, J., Seymour, T. (2011). The history of social media and its impact on business. *Journal of Applied Management and Entrepreneurship*, *16*, 79-91.

Freel, M. (2000). External Linkages and Product Innovation in Small Manufacturing Firms. Entrepreneurship and Regional Development - ENTREP REG DEV. 12. 245-266. 10.1080/089856200413482.

Hair, J., Babin B., & Anderson, R. (2014). Multivariate Data Analysis 7th Edition.

Hayes, A.F. (2018). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (2nd edition). New York: The Guilford Press.

Hidayat, M., Latief, F., Nianty, D., Bahasoan, S., & Widiawati, W. (2020). Factors influencing resilience of micro small and medium entrepreneur (MSME) during COVID 19 outbreak in south sulawesi province indonesia, Page No. 26707-26721.

International Labour Organization. (2020). MSME Day 2020: the COVID -19 pandemic and its impact on small business.

Kampos, Karl P. (2016). Dimensions of Business Resilience in the Context of Post-Disaster Recovery in Davao City, Philippines. GMP Press and Printing.

Kelly, T. (2016). Entrepreneurial Orientation: What Is It and Why Might It Be a Hidden Strategy for Building Long-Term Enterprise Value? *The Journal of Private Equity*, *19*(2), 7-14.

Ruiz-Martin, C., Lopez-Paredes, A., & Wainer, G. (2018). What we know and do not knowabout organizational resilience. *International Journal of Production Management and Engineering*, *6*(1): 11-28.

Sanchis, R., Canetta, L., & Poler, R. (2020). A conceptual reference framework for enteprise resilience enhancement. *Sustainability*, *12*, 1464.

Slovin, E. (1960). Slovin's formula for sampling technique.

United Nations Disaster Risk Reduction - Regional Office for Asia and Pacific. (2020). Covid-19 Small Business Continuity and Recovery Planning Toolkit.

Vargas, S., & Rivera-Rodriguez, Hugo-Alberto. (2019). Business Resilience a Dynamic Capability to Overcome Extreme Adversity. *Espacios*, *40*, 1-13.

World Economic Forum. (2020). 5 ways entrepreneurs and SMEs can build resilience in a coronavirus economy.

Xiao, L., & Cao, H. (2017). Organizational Resilience: The Theoretical Model and Research Implication. ITM Web of Conferences.

Zamoum, K., & Gorpe, TS. (2018). Crisis Management: A Historical and Conceptual Approach for a Better Understanding of Today's Crises.