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Total Quality Management and Innovation as Predictors to Determinants of Survival among MSMES in COVID19 Pandemic

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Abstract: *The primary purpose of this study was to find out whether total quality management and innovation significantly predict the determinants of survival among MSMEs. It was tested at a 0.05 level of significance stating there is no significant relationship between total quality management and innovation on the determinants of survival of MSMEs. The findings revealed that total quality management and innovation of MSMEs were both high. The results show a significant relationship between total quality management and innovation on the determinants of survival among MSMEs. There is no domain in total quality management and innovation that significantly predict the determinants of survival among MSMEs. Furthermore, a significant influence on the determinants of survival was found in the domains of total quality management and innovation.*

Keywords: determinants of survival, innovation, Master in Business Administration, total quality management

I. INTRODUCTION

The fact that most businesses end their journey in the very first year of operation becomes one of the recurring problems affecting the determinants of survival (Mitic, 2020). Muñoz et al. (2019) emphasized that the problem of small firms not surviving is that they lack proper planning for recovery in the event of a crisis. Also, while other businesses find their way to exist continually, others do not because they tend to lose focus on the critical areas of survival (Alves et al., 2020).

The importance of recognizing the determinants of survival is that it allows the business to identify its strengths and weaknesses that help keep its operation under control (Barbosa, 2016). The MSMEs' survival is vital in creating jobs and accelerating economic growth (Ifekwem and Adedamola, 2016). Moreover, the survival of new firms is of macroeconomic importance because of its impact on the economic welfare of a country (Neumann, 2020).

Several research in the past provided relevant measures in establishing concrete evidence on total quality management's influences on innovation strategies' effects on survival and organizational performance. However, they have not crossed into an investigation that focuses on the relationship between total quality management, innovation, and determinants of survival (Abdul, 2019; Asgary et al., 2020). This study will bridge the gap between these three variables. Furthermore, the researcher aims to predict if the areas of total quality management and innovation significantly affect the determinants of survival among Micro, Small, and Medium-sized Enterprises (MSMEs), and to provide clear evidence that will enhance future research.

I. REVIEW OF RELATED LITERATURE

The first variable of this study is Total Quality Management (TQM). This variable is further scrutinized into top management commitment, education and training, customer focus, supplier quality management, continuous improvement, process flow management, fact-based management, incentive and recognition system, and process monitoring and control (Oza&Shiroya, 2015). The second independent variable is innovation with five identified indicators: strategy, processes, organization, linkages, and learning (Singh, 2016). Lastly, Determinants of Survival is the dependent variable used in this study with the following indicators: business characteristics, entrepreneurial characteristics, attitudes of entrepreneurs, entrepreneurial orientation, environmental dynamics, entrepreneurial resources, and network resources (Lekhanya, 2016).

2.1. Total Quality Management

Total quality management must focus on one main goal; is – to ensure that customers get what they pay. Businesses should strive to continually improve existing processes and products, all for attaining customer satisfaction. It is a fact that total quality management's goal is to foster the loyalty of the customer. To deliver a service that will make customers think of returning and building loyalty with the brand. As it implies in a broader sense, consolidation of feedback is a necessity that businesses must observe. Feedback can come from regular customers or employees who are part of the internal process. They will be significantly involved and feel the accountability of determining how products or services improve in the organization. It all boils down to the point that if a customer is happy, the organization must sustain its improvements. In case of dissatisfaction, there is a need to reevaluate strategies (White, 2019).

An organization needs to strive to meet the customers' satisfaction because they are the king of the market. Competing, being effective, and being flexible are just some of the approaches TQM wants to instill in an organization. These things benefit customers in a way that hits their satisfaction. An important thing to note is that with excellent service comes the retention of existing customers and the inducement of new customers. As a result, it drives high customer retention and satisfaction, helping every company to sustain its development. The term "customer satisfaction" was coined by computing how much the total exceeds of percentage set goals of the firm from the total number of customers who reported an excellent and superb rating to the products or services (Rasheed, 2016).

2.2. Innovation

By concept, innovation refers to undertaking a conceptualization to create newness and improved versions of existing products, services, operations, and others. The capability of an enterprise to innovate and do new things greatly influences success and survival. If we look at why some organizations shine better than others, we can notice one factor in common: they all embraced innovation (Purcell, 2019).

Studies connect innovation to the different kinds of discovery of products that are new ways of organizing the value chain. This statement means newness in processes, organizational structure, and the like. An empirical phenomenon that is wide in range and intangibly tricky to operate, measure, or trace is what innovation encompasses. There are a lot of issues faced by society and the economy in which innovation becomes the critical issue to address these challenges (Kuhlmann & Rip, 2018).

Some study relates innovation to research and development as part of the innovative process. Innovation process models are related to the carrying out of the different phases or stages of improvement. These processes move from mere ideas or research to a new or improved version of other methods, products, and services. The concept of these models generally focuses on the consensus of the specialized literature. To determine and know whether the innovation proposed models may they be research-based or not, needs to become an input for organizations from sectors and various countries worldwide (Zartha et al., 2020).

2.3. Determinants of Survival

Different studies claim that several determinants may affect the survival and growth of MSMEs. As history witnessed the small enterprises' survival struggles, businesses must go through different stages. A researcher suggests that small business growth, entrepreneurial orientation, environment dynamics, resources, age, attitude, and industry sector are essential factors in the survival of small businesses around the world. Others also suggest that support from the government and governing bodies are superficial (Hegde, 2018; Lekhanya, 2016).

Determinants of survival among small businesses show that despite numerous studies published and circulated, there is not even a single theory that points out why businesses fail after initiating and operating a small business venture. There are countless types of business, and each varies in its characteristics and statistics. There should be an identification or classification of the appropriate business strategies that might contribute to the launching of new small businesses and firms. This strategy is necessary to provide guidance and steppingstone to the newly formed enterprises. Failure of new start-ups is not just found in the developing countries but also in the first world and highly developed ones. These countries' statistics show that small entrepreneurs who are responsible for generating accessible jobs and fueling the economy still fail at alarming rates. Study shows that these strategies, like networking, formulating business plans, addressing and solving challenges and changes, and differentiation of marketing strategy, were helpful to the small entrepreneurs in their success of survival within the first five years of operation (Turner & Endres, 2017).

2.4. Correlation Between Measures

Several studies show a relevant connection or positive relation between the three presented variables of this study. Total quality management and innovation predict the determinants of survival of micro, small, and medium-sized enterprises. MSMEs mainly supply goods and services to organizations more prominent in size, and a lack of quality in its produced outputs will create a massive impact on the ability of the larger firms to compete with others of their kind. This idea is due to the notion that quality inputs produce quality outputs. Hence, what the small enterprises supply to the more extensive firm matter. Anent to this, total quality management (TQM) is a tool that is important in improving the quality of these products and services and the entity. It was found that studies recommend product quality management and innovation to MSMEs' managers, employees, and organizations who aspire to remain in a competitive environment and stay on top of the line among their valuable competitors (Agwu&Evawere, 2016).

II. METHODS

This study used a quantitative, non-experimental design utilizing a descriptive-correlational technique with regression analysis. This quantitative form of research is a kind of approach where objective theories were tested and the variables accompanying them were examined and compared to other variables. This is where a descriptive-correlational technique is used and employed to give measurement and description as to what degree the association or the relationship between the variables is associated with each other (Creswell, 2018).

The respondents who participated in this study were the three hundred forty-five owners, Chief Executive Officer (CEO), manager, or any representatives from the business that falls under the micro, small, medium-sized category regardless of industry sector and is a registered operating business in the Department of Trade and Industry (DTI) during the COVID19 pandemic.

3.1. Distribution of Respondents

Barangay	Population	Sample
A	1,298	131
B	534	54
C	1,107	112
D	179	18
E	300	30
TOTAL	**3,418**	**345**

III. RESULTS

Presented in this chapter are the analyses, interpretations, and the findings of the data gathered from the research instruments used in the study. This research used instruments in finding out the domains significantly predicting Total Quality Management and Innovation to the Determinants of Survival among Micro, Small, Medium-sized Enterprises (MSMEs).

The standard deviation ranged from 0.50 to 1.30, which is less than the typical standard deviation for a 5-point Likert scale. The standard deviation entailed that the obtained ratings in this study were mainly close to the mean arriving at a minor variation in the respondents' responses.

4.1. Level of Total Quality Management among Micro, Small, and Medium-sized Enterprises

Table 1 depicts the level of total quality management among micro, small, and medium-sized enterprises in terms of top management commitment, education & training, customer focus, supplier quality management, continuous improvement, process flow management, fact-based management, incentive & recognition system, process monitoring & control. The overall mean was 3.85, described as high. The description indicates that micro, small, and medium-sized enterprises observe total quality management at a high level.

Table 1
Level of Total Quality Management among Micro, Small, Medium-sized Enterprises

Indicators	Mean	SD	Descriptive Equivalent
Top Management Commitment	3.98	0.50	High
Education and Training	4.11	0.56	High
Customer Focus	4.06	0.53	High
Supplier Quality Management	4.14	0.51	High
Continuous Improvement	3.90	0.60	High
Process Flow Management	3.87	0.61	High
Fact-based Management	3.20	0.70	Moderate
Incentive and Recognition System	3.51	0.66	High
Process Monitoring and Control	3.84	0.65	High
Overall	**3.85**	**0.45**	**High**

4.2. Level of Innovation among Micro, Small, Medium-sized Enterprises

Presented in Table 2 is the level of innovation, as perceived by the micro, small, and medium-sized enterprises in terms of strategy, processes, organization, linkages, and learning. The overall mean is 4.11, and its verbal description equivalent was high. The result means that enterprises observe innovation that much.

Table 2
Level of Innovation among Micro, Small, Medium-sized Enterprises

Indicators	Mean	SD	Descriptive Equivalent
Strategy	4.05	0.63	High
Processes	4.10	0.50	High
Organization	4.10	0.60	High
Linkages	4.14	0.59	High
Learning	4.15	0.60	High
Overall	**4.11**	**0.51**	**High**

4.3. Level of the Determinants of Survival among Micro, Small, Medium-sized Enterprises

Table 3 depicts the determinants of survival as observed by the micro, small, and medium-sized enterprises in terms of business characteristics, entrepreneurial characteristics, attitudes of entrepreneurs, entrepreneurial orientation, environmental dynamics, entrepreneurial resources, and network resources. The overall mean is 4.07, had a verbal description of high. This result signified that micro, small, and medium-sized enterprises observed the determinants of survival that much.

Table 3
Level of the Determinants of Survival among Micro, Small, Medium-sized Enterprises

Indicators	Mean	SD	Descriptive Equivalent
Business Characteristics	4.08	0.55	High
Entrepreneurial Characteristics	4.08	0.55	High
Attitudes of Entrepreneur	4.04	0.53	High
Entrepreneurial Orientation	4.06	0.53	High
Environmental Dynamics	4.14	0.55	High
Entrepreneurial Resources	4.06	0.54	High
Network Resources	4.06	0.55	High
Overall	**4.07**	**0.54**	**High**

4.4. Significance of the Relationships of the Domains of Total Quality Management to the Determinants of Survival among Micro, Small, Medium-sized Enterprises

Table 4 presented the nine (9) indicators that showed the significant relationship between Total Quality Management and the Determinants of Survival among micro, small, and medium-sized enterprises. The R-value of continuous improvement was 0.775 with a p-value of 0.001, which is interpreted as a strong positive correlation. In addition, the R-value of process flow management was 0.659 with a p-value of 0.001, and customer focus with an R-value of 0.651 and p-value of 0.001 interpret a moderately strong positive correlation. Meanwhile, the process monitoring and control had an R-value of 0.646 and a p-value of 0.001, education and training with an R-value of 0.640 and a p-value of 0.001, supplier quality management with an R-value of 0.605 and a p-value of 0.001, top management commitment with an R-value of 0.541 and a p-value of 0.001, fact-based management with an R-value of 0.522 and a p-value of 0.001, and incentive and recognition system with an R-value of 0.502 and a p-value of 0.001 all interpreted as indicators with moderate positive correlation.

Table 4

Significance of the Relationships of the Domains of Total Quality Management to the Determinants of Survival among Micro, Small, Medium-sized Enterprises

Independent Variables	**Dependent Variable** Determinants of Survival			
	r-value	**r-squared**	**p-value**	**Decision**
Top Management Commitment	0.541*	0.2927	0.001	H_0 is rejected
Education and Training	0.640*	0.4096	0.001	H_0 is rejected
Customer Focus	0.651*	0.4238	0.001	H_0 is rejected
Supplier Quality Management	0.605*	0.3660	0.001	H_0 is rejected
Continuous Improvement	0.775*	0.6006	0.001	H_0 is rejected
Process Flow Management	0.659*	0.4343	0.001	H_0 is rejected
Fact-based Management	0.522*	0.2725	0.001	H_0 is rejected
Incentive and Recognition System	0.502*	0.2520	0.001	H_0 is rejected
Process Monitoring and Control	0.646*	0.4173	0.001	H_0 is rejected

*p < 0.05

4.5. Significance of the Relationship of the Domains of Innovation to the Determinants of Survival among Micro, Small, Medium-sized Enterprises

Presented in Table 5 are the five (5) indicators that showed the significant relationship between the level of Innovation and the Determinants of Survival among micro, small, and medium-sized enterprises. The R-value of learning is 0.722 with a p-value of 0.001, an organization with an R-value of 0.706 and a p-value of 0.001, and linkages with an R-value of 0.691 with a p-value of 0.001. Meanwhile, the R-value of both strategy and processes is 0.640 with a p-value of 0.001, which signifies a moderately-strong positive correlation.

Table 5

Significance of the Relationships of the Domains of Innovation to the Determinants of Survival among Micro, Small, Medium-sized Enterprises

Independent Variables	**Dependent Variable** Determinants of Survival			
	r-value	**r-squared**	**p-value**	**Decision**
Strategy	0.640*	0.4096	0.001	H_0 is rejected
Processes	0.640*	0.4096	0.001	H_0 is rejected
Organization	0.706*	0.4984	0.001	H_0 is rejected
Linkages	0.691*	0.4775	0.001	H_0 is rejected
Learning	0.722*	0.5213	0.001	H_0 is rejected

*p < 0.05

4.6. Regression Analysis on the Predictors of the Domains of Total Quality Management to the Determinants of Survival among Micro, Small, Medium-sized Enterprises

Table 6 showed regression analysis on the predictors of the domains of Total Quality Management to the Determinants of Survival among micro, small, and medium-sized enterprises. The table showed an F-ratio of 87.689 and

a p-value of 0.001, which were less than the 0.05 level of significance. This result allowed the researcher to reject the null hypothesis saying, "there is no domain in total quality management that significantly predicts or determinants of survival among micro, small, and medium-sized enterprises." Thus, there was indeed a domain in total quality management that significantly predicts the determinants of survival among micro, small, and medium-sized enterprises.

The r-value of 0.838 indicates a strong and positive prediction of total quality management to the determinants of survival among micro, small, and medium-sized enterprises. The coefficient of multiple determination, which is .702, is an attribution that MSMEs experienced 70.20% of the variation in the level of total quality management to the level of the determinants of survival. The rest of 29.80% is the attribution of the chance variation from other factors not included in this study. This attribution indicates that the level of total quality management among micro, small, and medium-sized enterprises comes from other factors outside the study.

Table 6
Regression Analysis on the Predictors of Total Quality Management to the Determinants of Survival among Micro, Small, Medium-sized Enterprises

Total Quality Management	**Unstandardized Coefficients**		**Standardized Coefficients Beta**	**t-value**	**p-value**	**Decision**
	β	**SE (β)**				
(Constant)	0.860	0.137				
Top Management Commitment	0.035	0.037	0.038	0.950	0.343	H_0 is not rejected
Education and Training	0.098	0.040	0.119*	2.474	0.014	H_0 is rejected
Customer Focus	0.119	0.041	0.138*	2.930	0.004	H_0 is rejected
Supplier Quality Management	0.013	0.042	0.014	0.307	0.759	H_0 is not rejected
Continuous Improvement	0.353	0.045	0.425*	7.735	0.001	H_0 is rejected
Process Flow Management	0.009	0.038	0.012	0.235	0.814	H_0 is not rejected
Fact-based Management	0.026	0.027	0.042	0.948	0.344	H_0 is not rejected
Incentive & Recognition System	-0.002	0.030	-0.002	-0.05	0.957	H_0 is not rejected
Process Monitoring & Control	0.165	0.029	0.232*	5.664	0.001	H_0 is rejected
Dependent Variable: Determinants of Survival						

p<0.05 R= 0.838 R^2 = 0.702 F-ratio = 87.689 p-value = 0.001

4.7. Regression Analysis on the Predictors of the Domains of Innovation To the Determinants of Survival among Micro, Small, and Medium-sized Enterprises

Table 7 presented the regression analysis on the predictors of the Innovation domains to the Determinants of Survival among micro, small, and medium-sized enterprises. The table showed an F-ratio of 106.385 and a p-value of 0.001, which is more diminutive than the significance level of 0.05. The result allowed the researcher to reject the null hypothesis stating, "there is no domain in innovation that significantly predicts the determinants of survival among micro, small, and medium-sized enterprises." Thus, there was a domain in Innovation that significantly predicts the determinants of survival among micro, small, and medium-sized enterprises.

The R-value of 0.782 indicated a strong and positive innovation prediction for the determinants of survival among micro, small, and medium-sized enterprises. The coefficient of multiple determination, which was 0.611, suggested that 61.10% of the variation of Innovation was an attribution to the determinants of survival. Micro, small, and medium-sized enterprises observed these variations. The rest of 38.90% was the chance variation of other factors' attribution to the level of innovation among micro, small, and medium-sized enterprises.

Table 7
Regression Analysis on the Predictors of Innovation to the Determinants of Survival among Micro, Small, Medium-sized Enterprises

Total Quality Management	Unstandardized Coefficients		Standardized Coefficients	t-value	p-value	Decision
	β	SE (β)	Beta			
(Constant)	1.216	0.129				
Strategy	0.064	0.040	0.088	1.623	0.106	H_0 is not rejected
Processes	0.079	0.049	0.091	1.615	0.107	H_0 is not rejected
Organization	0.162	0.054	0.197*	3.004	0.003	H_0 is rejected
Linkages	0.126	0.049	0.162*	2.573	0.011	H_0 is rejected
Learning	0.261	0.043	0.339*	6.095	0.001	H_0 is rejected
Dependent Variable: Determinants of Survival						

p<0.05 R = 0.782 R^2 = 0.702 F-ratio = 106.385 p-value = 0.001

IV. CONCLUSION

With the results of the objectives being the basis for this decision, the researcher came up with the conclusion that total quality management in terms of education and training, customer focus, continuous improvement, and process monitoring & control had significantly predicted the determinants of survival. More so, innovation in terms of organization, linkages, and learning has significantly expected the determinants of survival among micro, small, and medium-sized enterprises. The findings revealed that the level of total quality management caused by top management commitment, education and training, customer focus, supplier quality management, continuous improvement, process flow management, and process monitoring & control was highly observed by the micro, small, and medium-sized enterprises. In contrast, the total quality management caused by fact-based management was moderately observed. Also, the findings showed that micro, small, and medium-sized enterprises highly regard the level of innovation in terms of strategy, processes, organization, linkages, and learning. Therefore, businesses worldwide, higher education institutions (HEIs), government units, and most importantly, business owners, should continue observing total quality management as well as innovating continuously to ensure survival.

While the focus of this study was broad, indicators of each variable were not given more profound emphasis. Hence, we recommend future researchers expoundon total quality management, innovation, and determinants of survival as the focus of their study to pass a more careful examination of these factors. Moreover, the researcher can test total quality management, innovation, and determinants of survival in another field of specialization to employ broader scope of the research. Localization and application to the present phenomenon are also a must to validate the result of this study.

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