Towards Resilient Educational System and Governance: Measuring Effectiveness and Competitiveness of Private HEIs

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Abstract

Organizations, including schools and universities, must be resilient to sustain operations and ensure the learning continuity of students. Organizational resilience is the ability of the organization to anticipate, respond, adapt to incremental changes, thereby enabling the organization to survive and prosper even in times of adversity or crisis. The resilience of private higher educational institutions (HEIs) in the Philippines is challenged by the drastic effects of the COVID-19 pandemic. To enhance resilience, private HEIs need to understand their resilience strengths and weaknesses and must be able to evaluate the effectiveness of their resilience strategies. This study validated the indicators affecting the level of organizational resilience of private HEIs in terms of the effectiveness of resilience strategies and competitiveness. Results showed that leadership and culture (LC), networks (N), change readiness (C), and quality education and learning continuity (L) factors directly affect organizational resilience. Structural equation modeling (SEM) showed that learning outcomes (β: 0.931), quality and inclusive education (β: 0.916), planning strategies (β: 0.898), proactive posture (β: 0.896) and innovation and creativity (β: 0.836) have the highest direct effect to organizational resilience. Moreover, there was a significant difference in the effectiveness of resilience strategies and competitiveness of private HEIs in Metro Manila and outside Metro Manila. Private HEIs in Metro Manila showed a higher level of organizational resilience than those outside Metro Manila. Moreover, the resilience effectiveness and competitiveness of small to medium-sized private HEIs differ from those large-sized private HEIs.Findings of the study have practical implications for the educational sector, school leaders and administrators, researchers, and society.

Keywords
Resilience, Organizational Resilience, Pandemic, Educational System, Governance

1. Introduction

Far more than a global health crisis, the COVID-19 pandemic has also become a social-economic crisis. In the Philippines, as of January 7, 2022, there were 2,910,664 COVID-19 reported cases, of which 51,871 were deaths (Department of Health, 2022). To flatten the curve and allow the medical frontlines to cope with the hospitals' overcapacity, the Philippine national government-imposed quarantine, lockdowns, and alert level systems. This included the temporary closure of schools and quickly transitioned the learning modality to online or flexible learning and modular learning. About 3.5 million tertiary students (Word Education News + Reviews, 2018) in 1,963 higher educational institutions in the Philippines (Commission on Higher Education, 2019) were transitioned to online and flexible learning for the first term of the school year 2020-2021.

The COVID-19 pandemic and the succeeding actions to the temporary closure of schools and the quick transition to online or flexible learning have had drastic effects on many schools in the Philippines. The private education sector, for instance, suffered an enrollment crisis which led to over closure of the 1,179 schools in the Philippines and which affected over 100,000 students and teachers (Philippine Business for Education, 2021; Malipot, M.H, 2020).

This pandemic has tested the business resiliency of many companies, including higher educational institutions (HEIs). PricewaterhouseCoopers UK (2018) defined organizational resilience as the ability of the organization to protect and

sustain its critical processes in spite of operational stress or disruption. It is also defined as the ability of an organization to anticipate, prepare for, respond and adapt to incremental or sudden changes and/or disruptions to survive and prosper (Denyer, D., 2017). Meanwhile, Resilient Organizations Ltd. defined resilience as a strategic capability (ResOrgs, 2021). It embodied two significant capabilities: foresight and situation awareness and turning a crisis into a strategic opportunity (ResOrgs, 2021).

Howard, C. (2020) said that enterprises need to reset strategy and build resilience as phases of COVID-19 pandemic progress to ensure a more sustainable future. For the organizations to become resilient, they need to reimagine both the workforce and work design and sense and respond to change, repeatedly and at scale. Several studies showed the importance of business resilience before, during, and after disruptive events. The central purpose of organizational resilience lies in maintaining the social and economic sustainability of the organization (Rai, S. et al., 2021).

A company that has embedded organizational resilience, when confronted with disruptive events or crises, recognizes the threats faster, has a greater ability to withstand shocks and negative impacts and rebound from shock more quickly, and finally, returns to an operating level more swiftly (Reeves, M. et al., 2020). Companies implementing resilience measures, on the onset of the disruption such as the COVID-19 pandemic, already agreed their priorities and knew how to continue and protect their value-creating operations. This allowed them to seamlessly transition to alternative operational and service modalities and distribution models. Since organizational resilience enables companies to withstand the disruption and return with confidence, it is, therefore, incumbent upon higher education institutions to fully embed the concept into all facets of their operations.

Organizational resilience is essential not only for schools and institutions because it helps in developing a resilience culture that improves performance, demonstrating the return on investment of resilience-building initiatives, identifying and connecting areas of the organization's greater and weaker resilience, determining the effectiveness of resilience strategies and uncovering the competitiveness of the organization as compared to others. Measuring resilience is also important because what gets measured gets managed (ResOrg, 2021).

The Resilience Organizations Ltd., partnered with various organizations and professionals, developed a resilience tool in 2013 to measure and compare organizational resilience. The tool is continuously enhanced and updated such that it includes diagnostic tool, benchmark resilience tool (BRT-53), and shorter versions of benchmark resilience tool (BRT-13) (Lee, A.V., et al., 2013; ResOrg, 2021; Whitman, Z.T, et al., 2013). However, this business resilience and the organizational diagnostic tools are generic tools for the resilience of all types of businesses and have not provided any industry-specific resilience advice.

Due to the uniqueness of the operating environment of the education sector in ensuring not just sustainability but also learning continuity and quality education of all students, it is, therefore, necessary to reflect this as an important indicator of the organizational resilience tool of the said sector.

1.2 Conceptual Framework

Figure 1 illustrates the conceptual research model of the study. This study integrated the 13 organizational resilience indicators (ResOrg, 2021) and other variables for quality education and learning continuity, such as accessibility, quality and inclusive education, well-being, safety, and learning continuity. The main objective was to validate and evaluate factors affecting the effectiveness of organizational resilience strategies and competitiveness of private HEIs in the Philippines. This study examined the 21 observed variables, 26 exogenous variables, and 22 endogenous variables, as illustrated in Figure 1.

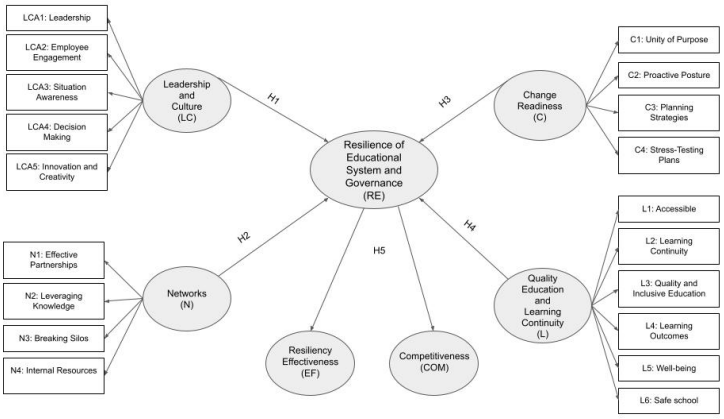

Figure 1. Conceptual Framework for Organizational Resilience of Educational System and Governance

1.1 Objectives

With the many unprecedented changes in the external and internal environments of the schools brought about by the COVID-19 pandemic, HEIs must quickly respond, adapt, and reinvent their instructional modality, systems, and processes to ensure learning continuity of the students and sustainability of the business.

Therefore, there is a need for HEIs to assess the effectiveness of their resilience strategies and investments. This assessment is necessary to ensure the competitiveness of the institutions in both the pandemic and post-pandemic eras and to ensure students' learning continuity. Tying this with the intention of helping schools to thrive and survive, this study has three main goals.

First, it proposed an enhanced organizational resilience diagnostic tool for HEIs by adapting the OrgRes Diagnostic Tool (ResOrg, 2021) and adding constructs to specifically measure the resilience of the educational system through indicators and priorities set by United Nations Children's Fund (UNICEF) and United States Agency for International Development (USAID) (Shah, R, 2019). Second, it validated the indicators, variables of the conceptual framework using Structural Equation Modeling (SEM) Approach. Lastly, it measured and analyzed the effectiveness and competitiveness of private HEIs towards a resilient educational system and governance.

Given the foregoing, this study aims to test the following hypotheses:

Validating the conceptual framework, constructs and variables:
H1: “Leadership and culture” (LC) positively influences organizational resilience of private HEIs.
H2: “Networks” (N) positively influences organizational resilience of private HEIs.
H3: “Change readiness” (C) positively influences organizational resilience of private HEIs
H4: “Quality Education and Learning Continuity” (L) positively influences organizational resilience of private HEIs.
H5: Organizational resilience of private HEIs positively influences resilience effectiveness and competitiveness.

Measuring effectiveness of resilience strategies and competitiveness of private HEIs:
H6: The resilience effectiveness and competitiveness of private HEIs in Metro Manila differ from those outside Metro Manila.
H7: The resilience effectiveness and competitiveness differ based on the organizational size of the private HEIs.

From the standpoint of practice, this study is significant because it aims to provide a framework that can aid higher educational institutions to achieve organizational resilience, which would enable them to withstand, thrive, and recover from the effects of a disruptive event.

With the drastic negative effect brought by the COVID-19 pandemic, it is inevitable that HEIs will devote more attention towards spurring organizational resilience not only to thrive but prosper; this study, therefore, finds itself very timely with its focus and targeted goals.

Moreover, this research directly and indirectly also benefits the 1.) Higher Educational Institutions Abroad. Although the context of the study is within the Philippines, this research can also be beneficial to higher educational institutions abroad since all higher educational institutions, whether in the Philippines or outside the Philippines, are greatly affected by the COVID-19 pandemic; 2.) Educational Regulatory Agencies. The educational regulatory agencies can also be benefitted from this study. These regulatory agencies' mandate to support educational institutions in providing quality education is tantamount to ensuring that educational institutions thrive and survive before, during, and after the disruptive event to ensure continuity of education and learning among students and learners; 3.) Accreditation Bodies. Accreditation bodies will also benefit from this study by reviewing the quality framework criteria to incorporate organizational resilience, and 4.) Future Researchers. Future researchers will benefit from this study since the proposed model can be further enhanced or applied in other sectors/ industries to test its robustness.

2. Literature Review

The notions of organizational resilience began in the late 1960s. It refers to the ability of a system to cope with change (Petak, Z., 2002). The concept continually expands into practice; however gained minimal traction (Chen, R et al., 2021). It was the late 1990s when the study of organizational resilience gained popularity among scholars who focused on post-disaster resilience (Godwin, I. et al., 2013; Andersson, T. et al., 2019).

Over the past years, discussions on resilience expanded even in the areas of information systems (Kendra, J.M., 2003), healthcare systems (Mallak, L.,1998), supply chains (Christopher, M et al., 2004), and psychology. In the organizational theory literature, resilience has been studied in the areas of disaster management, crisis management, and high-reliability organizations (Christopher, M et al., 2004; Weick, K.E., 2005; Paton, D., 2001).

Several related literature also helped expand the theory and adaptation of the concept of organizational resilience in various industries. Denyer, D. (2017) discussed how organizational resilience perspective has evolved over time, and has been split by two core drivers: defensive (stopping bad things happen)and progressive (making good things happen); as well as a division between approaches that call for consistency and those that are based on flexibility.

Sapeciay, Z. et al. (2017) found out that the construction industry lacks resilience practice, especially from an organizational perspective. The findings suggested that the industry would benefit from a resilience assessment tool to help improve overall resilience. The adoption of such a tool could enhance organizational capacity to recover quickly from crises and disasters. Rahi, K. (2019) argued that a range of interrelated indicators aiming to measure organizational resilience in two dimensions was awareness and adaptive capacity.

Werner, MJE et al. (2021) explored the relation between non-financial key performance indicators (KPIs) and elements of resilience (EoR), thus highlighting KPIs to aid leaders in dealing with unpredictable, disruptive situations to make wise decisions and help their organizations become competitive and sustainable. Moreover, Seville et al. (2006) showed that enhancing organizational resilience is a critical step towards creating a more resilient community. The work by Servile et al. (2006) provided a generic tool for organizational resilience but has not provided any industry-specific resilience advice.

On the other hand, Lee, A.V. et al. (2013) developed a tool to measure and compare organizations' resilience. The tool developed can be used to identify their strengths and opportunities for improvement as well as to develop and evaluate the effectiveness of their resilience strategies and investments. The tool was named a new model of organizational resilience as it reviewed and enhanced McManus's Resilience Model.

R. Whitman et al., (2013), on the other hand, published a short-form version (also called BRT-13B) of the Benchmark Resilience Tool (BRT-53). The BRT-13B short-form version allows for the quantification of organizational resilience while significantly decreasing the likelihood of survey fatigue and low response rates with very little sacrifice to survey validity or reliability.

Over the years, the survey tool was continuously enhanced and updated by the Resilient Organizations Ltd. with the results of the recent academic and business researches, case studies, among others. The tool also branched out to wider diagnostic and checklist assessments which were all validated. In partnership with the Resilience Expert Advisory Group (REAG) in Australia and Resilient Organizations in New Zealand, Organizational Resilience Diagnostic Tool

(OrgRes Diagnostic Tool) was also developed. The diagnostic tool was developed to help organizations to start on their journey towards improving resilience.

Through in-depth case studies of organizations of different sizes, sectors, and ownership structures, Resilient Organizations Ltd. has discovered that organizational resilience consists of three (3) interdependent attributes and thirteen (13) indicators of resilience. These build business as usual (BAU) effectiveness as well as robust and agile response and recovery from crises.

This research argues that because of the nature of the education industry and its important role in disaster recovery and the post-pandemic era, the industry needs an assessment tool specifically developed for the educational sector. Generic tools do not capture the uniqueness of industry. Drawing on previous research and surveys and a questionnaire, this paper develops key indicators for the educational system and governance organizational resilience.

This COVID-19 pandemic has revealed that schools and its operations are not resilient (Philippine Business for Education, 2021). Given the COVID-19 pandemic conditions, schools are faced with the inevitability of more integrally incorporating organizational resilience strategies to ensure learning continuity and long-term survival.

3. Methods

3.1 Research Design and Instrument

This study employed a quantitative research design that aims to validate the indicators and variables of the organizational resilience model for the education industry using structural equation modeling (SEM). The conceptual model demonstrated the organizational resilience indicators, namely: leadership and culture, change readiness, networks, and quality education and learning continuity.

The 1987 constitution of the Philippines recognizes the complementary roles of public and private institutions in the educational system in promoting the right of all citizens to quality education at all levels. Thus, unlike other organizations and businesses, private schools, including higher educational institutions, operate in a way that business and learning environments are equally considered and upheld.

The researcher adapted the 13-questions Organizational Resilience Diagnostic Tool of Resilience Organizations, Limited. The instrument used a 7-point Likert Scale with seven (7) as significant strength and one (1) as a significant weakness. Moreover, in order to measure the resiliency of the learning environment, the researcher added indicators on accessibility, quality and inclusive education, well-being, and safe school. This is all in line with the key priorities of building a resilient educational system published by the United Nations Children's Fund (UNICEF) (UNICEF, 2020). Therefore, the proponent added six (6) additional constructs on the 13 survey constructs initially adapted from the OrgRes Diagnostic Tool. The additional constructs are as follows in Table 1.

Table 1. Quality Education and Learning Continuity Constructs

Indicator	Construct
Accessibility	• Our students access quality education even during times of disruption.
Learning Continuity	• Our organization/ school has mechanisms in place to ensure learning continuity of students even during times of adversity.
Quality and inclusive education	• Our organization/ school is capable of delivering quality and inclusive education even during times of crisis.
Learning Outcomes	• Our organization/ school ensures attainment of learning outcomes of students even during times of adversity.
Well-being	• Our organization/ school prioritizes student and employee's well-being (mental health and psychosocial support) at all times.
Safe school	• Our organization/ school ensures safety of all stakeholders at all times.

The estimation method used in SEM is maximum likelihood. After the validation through SEM, Cronbach's alpha at a level of significance of $p > 0.01$ is conducted to test the consistency and the reliability of the constructs.

3.3 Data Analysis

For objectives 1 and 2, this study utilized SPSS AMOS Software for structural equation modeling (SEM). The tool investigates the correlation and effects between latent variables to validate the relationship and test hypotheses. Figure 1illustrates the SEM constructs consisting of 21 observed variables, 26 exogenous variables, and 22 endogenous variables.

For objective 3, this study utilized the SPSS for descriptive statistics to present the mean, standard deviation analysis of variance (ANOVA), among others. Pearson correlation is used to determine the impact and relationship of one variable to another. This is also used to accept or reject the hypothesis. For instance, in this research, the correlation is determined at 0.01 level of significance.

4. Data Collection

The participants of the survey were the school administrators and officers, academic and non-academic personnel of higher educational institutions in the Philippines. Preferably, participants should be tenured faculty or school employee (administrator, top management, or non-teaching personnel) having at least two (2) years and above work experience in a school setting. The reason for this is to ensure that the participant has a clear picture of the school setting before the pandemic and during this pandemic. The questionnaire was sent via Google Forms. Data were collected from November 2021 up to December 2021. A total of 1,029 responses were received. Table 2 summarizes the descriptive statistics of the respondents.

Table 2. Descriptive Statistics of the Respondents

Characteristics	Value	Frequency	Percentage
Group	Top Management (VP, President, COO,CEO, Board of Directors etc.)	51	5%
	Teaching Group (including Deans,Program Chairs, Teaching Officers etc.)	443	43%
	Non- Teaching Group (including Staff,Admin Officers etc.)	535	52%
Educational Attainment	College Graduate	556	54%
	Master's Graduate	298	29%
	Ph.D./ Doctorate Graduate	175	17%

5. Results and Discussion

5.1 Structural Equation Modelling (SEM)

Figure 2 represents the results of the SEM. Leadership and Culture (LC) is significantly affected by Leadership (LC1=0.830), Employee Engagement (LC2=0.765), Situation Awareness (LC3=0.812), Decision Making (LC4=0.795), Innovation, and Creativity (LC5=0.836). Leadership and Culture also has a significant direct effect on Organizational Resilience (R=0.335).

On the other hand, Networks (N) is significantly affected by Effective Partnerships (N1=0.776), Leveraging Knowledge (N2=0.776), Breaking Silos (N3=0.772), and Internal Resources (N4=0.783). Networks also has significant direct effect on Organizational Resilience (R=0.309).

Meanwhile, Change Readiness (C) is significantly affected by Unity of Purpose (C1=0.810), Proactive Posture (C2=0.896), Planning Strategies (C3=0.898), and Stress-Testing Plans (C4=0.835). Change readiness (C) direct affects Organizational Resilience (R=0.182).

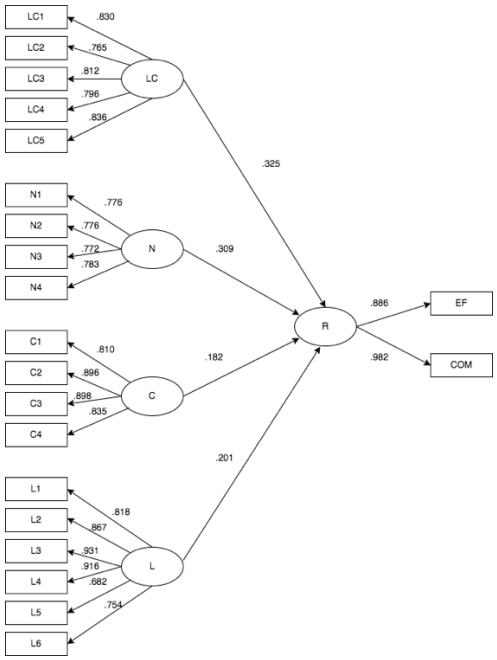

Figure 2. Structural Equation Modelling (SEM) of Organizational Resilience of Education System and Governance of Private HEIs

Quality Education and Learning Continuity (L) is significantly affected by Learning Continuity (L1=0.818), Accessibility (L2=0.867), Learning Outcomes (L3=0.931), Quality and Inclusive Education (L4=0.916), Well-being (L5=0.682), and Safe school (L6=0.754). Quality Education and Learning Continuity (L) has direct effects on Organizational Resilience (R=0.201).Lastly, Organizational Resilience (R) is significantly affected by Resiliency Effectiveness (EF=0.886), and Competitiveness (COM=0.982).

5.2Validation

Table 3 summarizes the model fit and the descriptive statistic results, respectively. Based on Table 3, Tucker Lewis Index (TLI), and Comparative Fit Index (CFI) values were higher than 0.90 the Root Mean Square Error of Approximation (RMSEA) value was also lower than the minimum cut-off of 0.70. Thus, the model exhibits goodness of fit measures.

Table 3. Goodness of Fit Measures and Cronbach's Alpha

Goodness of Fit Measures and Cronbach's Alpha	Minimum cut-off	Model Estimates
Tucker Lewis Index (TLI)	should be >0.90	0.901
Comparative Fit Index (CFI)	should be >0.90	0.922
Root Mean Square Error of Approximation (RMSEA)	should be <0.07	0.068
Cronbach's Alpha	should be >0.70	0.965

5.2Analysis and Interpretation

Table 4 summarizes the mean rating of each variable, including the standard deviation and estimates/ factor loading. The highest mean ratings are Learning Continuity (L1), followed by Safe school (L6) and Learning Outcomes (L3) with 6.32, 6.28, and 6.27 mean ratings respectively. Meanwhile, the variables with the lowest mean ratings are Internal Resources (N4), Well-being (L5), and Leveraging Knowledge (N2) with 5.62, 5.63, and 6.08 mean ratings, respectively. Meanwhile, the variables with highest estimates are Learning Outcomes (L3=0.931), Quality and Inclusive Education (L4=0.916), and Planning Strategies (C3=0.898). While the variables with lowest estimates are Well-being (L5=0.682), Safe school (L6=0.754) and Employee Engagement (LC2=0.765).

Table 4. Descriptive Statistics Results

Variable	Item/ Code	Mean	Std. Dev.	Estimates/ Factor Loading
Leadership and Culture (LC)	LC1	6.15	0.79	.830
	LC2	6.16	0.76	.765
	LC3	6.18	0.82	.812
	LC4	6.16	0.79	.796
	LC5	6.15	0.81	.836
Networks (N)	N1	6.21	0.82	.776
	N2	6.08	0.90	.766
	N3	6.23	0.78	.772
	N4	5.62	0.84	.783
Change Readiness	C1	6.11	0.85	.810
	C2	6.18	0.77	.896
	C3	6.21	0.73	.898
	C4	6.12	0.83	.835
Quality Education and Learning Continuity	L1	6.32	0.70	.818
	L2	6.23	0.78	.867
	L3	6.27	0.76	.931
	L4	6.23	0.75	.916
	L5	5.63	0.84	.682
	L6	6.28	0.76	.754

Table 5. Estimates/ Factor Loading (Variable/ Indicator to Resilience)

Variable/ Indicator	Estimates/ Factor Loading	Variable/ Indicator	Estimates/ Factor Loading
R ← LC	0.325	R ← L	0.201
R ← N	0.309	EFF ← R	0.886
R ← C	0.182	COM ← R	0.982

Table 5 illustrates the effects of each variable on resilience. Leadership and Culture (LC) and Networks (N) have significant direct effects on Organizational Resilience with 0.335 and 0.309 estimates, respectively. Change readiness (C) and Quality Education and Learning Continuity (L) also have a direct impact on Organizational Resilience (R) with 0.182 and 0.201 estimates, respectively. Resilience effectiveness and competitiveness significantly affect Organizational Resilience (R) with 0.886 and 0.982 estimates.

ANOVA was used to determine whether there is a significant difference in the resilience effectiveness and competitiveness of private HEIs in Metro Manila and those outside Metro Manila. Table 6 illustrates the significant difference in the resilience effectiveness and competitiveness of private HEIs in Metro Manila with those outside Metro Manila. The significance level is computed as 0.000 and 0.001 for resilience effectiveness and competitiveness, respectively. This is lower than the 0.01 level of significance, so the hypothesis is accepted.

Moreover, shown in Table 7, the mean ratings of resilience effectiveness and competitiveness of private HEIs in Metro Manila are 6.23 and 6.29, with standard deviations of 0.69 and 0.68, respectively. Meanwhile, the mean ratings of resilience effectiveness and competitiveness of private HEIs outside Metro Manila are 6.00 and 6.07, with a standard deviation of 0.79 and 0.88, respectively.

Table 6. ANOVA Results of City/ Location of Private HEIs to Resilience Effectiveness and Competitiveness

		Sum of Squares	df	Mean Square	F	Sig.	Interpretation
EFFECTIVENESS	Between Groups	6.035	1	6.035	12.375	.000	Significant
	Within Groups	510.079	1046	.488			
	Total	516.114	1047				
COMPETITIVENESS	Between Groups	5.783	1	5.783	11.105	.001	Significant
	Within Groups	544.717	1046	.521			
	Total	550.500	1047				

Level of significant at the 0.01

Table 7.Mean Ratings of Private HEIs in Metro Manila vs. Outside Metro Manila

		Private HEIs in Metro Manila		Private HEIs in Outside Metro Manila	
Variable	**Item/ Code**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**
Leadership and Culture	LC1	6.20	0.76	5.91	0.92
	LC2	6.17	0.75	6.08	0.82
	LC3	6.22	0.78	5.93	1.01
	LC4	6.17	0.80	6.09	0.77
	LC5	6.20	0.77	5.91	1.01
Networks	N1	6.22	0.76	6.12	1.10
	N2	6.08	0.89	6.09	0.99
	N3	6.23	0.74	6.22	0.96
	N4	5.98	0.97	5.93	0.96
Change Readiness	C1	6.13	0.84	6.01	0.89
	C2	6.20	0.74	6.02	0.89
	C3	6.23	0.71	6.05	0.83
	C4	6.17	0.80	5.80	0.95
Quality Education and Learning Continuity	L1	6.35	0.67	6.19	0.83
	L2	6.26	0.73	6.01	0.98
	L3	6.31	0.73	6.06	0.90
	L4	6.28	0.70	5.96	0.92
	L5	6.02	0.98	6.11	0.92
	L6	6.30	0.74	6.14	0.89

ANOVA was also utilized to determine whether there is a significant difference in the resilience effectiveness and competitiveness of private HEIs based on the size of their organization. Private HEIs with 1-50 employees were coded 1 in the SPSS, and 51-100 employees were coded 2, 101-200 employees were coded 3, 201-300 employees were coded 4, 301-400 employees were coded 5, 401 and above employees were coded 6. Table 8 illustrates the significant difference in the resilience effectiveness and competitiveness of small to medium-sized HEIs to large sized HEIs. The significance level is computed as 0.000 and 0.000 for resilience effectiveness and competitiveness, respectively. This is lower than the 0.01 level of significance, so the hypothesis is accepted. Meanwhile, Table 9 summarizes the mean rating of private HEIs based on size. Larger private HEIs tend to score higher in the identified variables.

Table 8. ANOVA Results of Size of the Organization of Private HEIs to Resilience Effectiveness and Competitiveness

		Sum of Squares	df	Mean Square	F	Sig.	Interpretation
EFFECTIVENESS	Between Groups	15.323	5	3.065	6.377	.000	Significant
	Within Groups	500.790	1042	.481			
	Total	516.114	1047				
COMPETITIVENESS	Between Groups	37.380	5	7.476	15.182	.000	Significant
	Within Groups	513.120	1042	.492			
	Total	550.500	1047				

Level of significant at the 0.01

Table 9. Mean Rating of Private HEIs Based on Size

Variable	Item/ Code	1-50 employees	51-100 employees	101-200 employees	201-300 employees	301-400 employee	401 and above employees
Leadership and Culture	LC1	5.95	5.13	6.27	6.42	6.26	6.19
	LC2	5.78	6.00	6.53	6.41	6.26	6.14
	LC3	5.92	5.50	6.44	6.30	6.17	6.20
	LC4	5.86	5.75	6.33	6.42	6.30	6.16
	LC5	5.88	5.38	6.35	6.53	6.17	6.17
Networks	N1	6.17	6.00	6.24	6.53	6.46	6.18
	N2	5.97	5.75	6.55	6.30	6.22	6.04
	N3	6.12	6.13	6.41	6.53	6.20	6.21
	N4	5.85	5.63	6.30	6.30	6.26	5.93
Change Readiness	C1	5.95	6.00	6.42	6.42	6.30	6.07
	C2	5.94	5.88	6.53	6.36	6.30	6.16
	C3	5.89	5.75	6.67	6.34	6.30	6.20
	C4	5.89	5.88	6.48	6.09	6.17	6.12
Quality Education and Learning Continuity	L1	6.02	5.75	6.55	6.36	6.61	6.34
	L2	6.08	5.75	6.48	6.03	6.50	6.24
	L3	6.15	5.75	6.48	6.25	6.33	6.29
	L4	6.00	5.88	6.53	6.11	6.30	6.25
	L5	5.94	6.13	6.27	6.39	6.11	5.98
	L6	6.14	5.88	6.21	6.55	6.30	6.29

All hypotheses of the study were accepted. It was confirmed through analyses that leadership and culture (LC), networks (N), change readiness (C), and quality education and learning continuity (L) positively influence the organizational resilience of private HEIs. It was also confirmed that the level of resilience of private HEIs in Metro Manila differs from those private HEIs outside Metro Manila. Lastly, the level of resilience of small to medium-sized private HEIs differs from those large-sized private HEIs.

6. Conclusion

The identified factors and indicators to ensure a resilient educational system and governance significantly affect the organizational resilience of private HEIs. These factors were leadership and culture (LC), networks (N), change readiness (C), and quality education and learning continuity (L). SEM also revealed that learning outcomes (β: 0.931), quality and inclusive education (β: 0.916), planning strategies (β: 0.898), proactive posture (β: 0.896), and innovation and creativity (β: 0.836) have the highest effect. Meanwhile, well-being (β: 0.682), safe school (β: 0.754), employee engagement (β: 0.765), and breaking silos (β: 0.772) had the lowest factor loading.

Results also revealed that there was a significant difference in the effectiveness of resilience strategies and competitiveness of private HEIs in Metro Manila and outside Metro Manila. Private HEIs in Metro Manila showed a higher level of organizational resilience than private HEIs outside Metro Manila. Also, the level of resilience of small to medium-sized private HEIs differs from those large-sized private HEIs.

The study provides an industry-specific framework for educational leaders, administrators, and researchers to evaluate the effectiveness of organizational resilience strategies and investments in ensuring competitiveness and business and learning continuity of private HEIs even during disruptive events such as the COVID-19 pandemic. In addition, this study has the opportunity to be extended to studying organizational resilience of the Philippine educational sector as a whole and possible adaptation of methodology to other service industries.

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Biography

Jocelyn Delgado-Abad. is an ASEAN Engineer. She is a senior student in Ph.D. Business Management major in Strategy Management program at Philippine Christian University. Currently, she is also the Quality Management and Strategic Initiatives Manager of Technological Institute of the Philippines. Concurrently, she also leads the T.I.P. Reengineering Team. She facilitates continuous improvements in all organizational units of the school, and monitors compliance withinternational standards. She also participates in different projects of the institution such as local and international accreditations and quality certifications.She also became an Analyst in Fuld and Company under Consumer -Packaged Goods vertical. She was trained to conduct both secondary and primary researches, as well as analysis and deriving insights particularly in F&B industry and its peripheral markets. She was also exposed to technological projects specifically on virtualization and cloud computing system. Moreover, Jocelyn contributed to business continuity management initiatives of the company.Jocelyn was also a faculty in Technological Institute of the Philippines – Industrial Engineering Department. She also worked as Process Engineer in different FMCG companies in Manila and engaged consultancy work with great emphasis on process optimization for four years.She graduated with a Bachelor of Science degree in Industrial Engineering from Polytechnic University of the Philippines. She also finished master's degree at Mapua Institute of Technology (now Mapua University) under a degree of Master of Engineering major in Industrial Engineering. She has international and Scopus publications in the fields of operations management, ergonomics, facility design, simulation among others.