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Research Title	The Competitiveness of the Cities and Municipalities in the Philippines Pre and Mid Covid-19 Pandemic
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ABSTRACT

A progressive economy is intrinsically one primary goal of any country. Unfortunately, the COVID-19 pandemic continuously challenges many countries worldwide, and the Philippines is no exception. The pandemic has dramatically affected people's activities and restricted a lot of transactions. Because of the people's very limited mobility, especially when the majority was mandated to stay home, the situation has started challenging the country's economy. At their level, the local government units (LGUs) have also been significantly challenged. The effects of the pandemic could have also impacted the competitiveness of the LGUs. This study examined the impact of the COVID-19 pandemic on the competitiveness of the LGUs in the Philippines. It also answered whether the competitiveness of the LGUs pre- and mid-pandemic are significantly different on account of the LGU's classification (cities and municipalities). It included the 1,512 LGUs contained in the CMCI database. The Wilcoxon Signed Rank test was utilized to examine the significant difference between the LGUs' competitiveness before and during the pandemic, and the Structural Equation Modeling (SEM) was used to investigate whether the significant differences in terms of the competitiveness measures pre- and mid-pandemic are on account of the LGUs' classification as cities or municipalities. Results revealed that the overall competitiveness and the pillars of competitiveness (except infrastructure) were significantly different before and during the COVID-19 pandemic. In addition, results revealed that the LGU Classification as a city or municipality has nothing to do with the significant difference in terms of overall competitiveness and resiliency. However, such classification does moderate the path between pre- and mid- pandemic periods in terms of economic dynamism, government efficiency, and infrastructure. The cities and municipalities in the Philippines are not equally well-equipped to respond to and handle the consequences of the COVID-19 pandemic. This study's results primarily benefit the local government units and the national government in their policy and strategy formulation to improve their overall and individual pillars of competitiveness.

KEYWORDS: Competitiveness Index, Local Government Units, Cities, Municipalities, Structural Equation Modeling (SEM), Wilcoxon signed-rank test

I. INTRODUCTION

A. Background of the Study

Competitiveness is multi-faceted, and there is no universal definition to elaborate on its concepts. It has various aspects and perspectives. Nonetheless, some general descriptions of the term are noted in this paper. The ability of businesses to provide products or services with a desirable value ratio that guarantees profit margin while obtaining customer preference over competitors is how GB Advisors (2019) define competitiveness in the context of business. However, such a definition cannot be literally applied in the context of national and local governance because the government units offer a value different from that of the businesses. On the other hand, Aiginger et al. (2013) proposed a definition of competitiveness of a country or region under a new perspective, which is more relatable for this study, i.e., "ability of a country (region, location) to deliver the beyond-GDP goals for its citizens today and tomorrow" (p. 13). Rubtzov et al. (2015) argued that all the guiding principles of social and economic growth should be mutually balanced to form the foundation of the competitiveness paradigm. They further emphasized that it is essential to analyze the region's competitiveness while considering its population, economy, infrastructure, and ecosystem. Although the definition of competitiveness in the context of business and government is different, at the end of the line, they are similar in providing "value" to the customers or the inhabitants in the case of the government.

In the perspective of the National Competitiveness Council (2022), competitiveness is measured through the four pillars: economic dynamism, government efficiency, infrastructure, and resiliency. In 2020, the Philippines were reported to have improved its global competitiveness before the COVID-19 pandemic. The World Bank (2022) has even reported that the country is one of the most vibrant economies in the East Asia Pacific region. The performance is attributed to the Philippines' growing population, increasing middle class, and young populace. The business sector has also shown substantial growth.

However, all this good performance has been challenged by the pandemic. According to Tabuga et al. (2020), this pandemic's impacts affect entire economies and national health care systems, particularly in developing nations like the Philippines. They further emphasized that supporting the millions of Filipinos who cannot support themselves due to their inability to find work during these difficult times is a more complicated situation due to the government's reaction to the crisis, which included community quarantine, reduced mobility, and economic closure. The pandemic problem expands into a much bigger social support/social protection problem, directly affecting the government's ability to fund, manage, and create efficient measures.

The Asian Development Bank (2020) noted that the COVID-19 pandemic is the most critical crisis of our time, severely impacting the poor and vulnerable urban populations in Asia and the Pacific. COVID-19 has some unanswered worldwide impact on cities and municipalities worldwide. The government units

have faced various challenges even before the pandemic, but all those challenges have been further aggravated this time. Some of the challenges elaborated by ADB are the inadequacy of urban and social infrastructure, heightened impacts on the vulnerable groups, especially the poor, and planning and management constraints on the local government units (LGU) end. Even those cities that substantially contribute to a country's GDP in developing countries have felt the pandemic's impact. They also have serious challenges, especially in their immediate response during the heights of the coronavirus and even in how they are going to "build back better." Much more in the Philippines.

The negative impacts of this pandemic are apparent because it is all over the news and is even observed or felt by everyone in the country. However, what this study would like to validate is whether the competitiveness of the cities and municipalities in the Philippines were significantly different before and during the COVID-19 pandemic. In addition, this study would generate new knowledge on whether the competitiveness of the LGUs is different on account of their classification (whether city or municipality). The Asian Development Bank (2020) emphasized that COVID-19 has different impacts on the cities and municipalities, and not all are equally able to handle the crisis. The characteristics of a city are way different from those of a municipality, especially those at the lowest ranks. Local government units that are classified as a city are further sub-classified as independent component cities, component cities, and highly urbanized cities. The LGUs that are termed as a municipality are sub-classified from first class to sixth class. The classification is based on the income of the cities and municipalities. Although income is not the primary determinant of competitiveness; however, with such a factor, it is evident that the local government units in the Philippines have different capacities in handling the impacts of the coronavirus pandemic. The results of this study may serve as input for the national and local government units in their policy-making for the Philippines to "build back better" from this pandemic. The national government may also use this study's results in prioritizing their initiatives in assisting the local government units in their plans to recover from this crisis.

B. Statement of Research Problem and Objectives

This study primarily aims to examine the impact of the COVID-19 pandemic on the competitiveness (Overall, Economic Dynamism, Government Efficiency, Infrastructure, and Resiliency) of the local government units (LGUs) in the Philippines.

Specifically, it seeks to:

1. Determine the classification of the local government units in the Philippines,
2. Determine the competitiveness index of the local government units (a) before and (b) during the COVID-19 pandemic in terms of:
    a. Overall competitiveness

b. Economic Dynamism
c. Government Efficiency
d. Infrastructure, and
e. Resiliency

3. Investigate whether there is a significant difference between the competitiveness index of the local government units in the Philippines pre and mid-COVID-19 pandemic.
4. Examine whether the competitiveness index of the local government units in the Philippines before and during the pandemic are significantly different on account of the LGU's classification (city or municipality).

C. Significance of the Study

The municipal and national governments of the Philippines expect to gain the most from the study's findings. People have been adjusting to the new normal in practically all facets of life for the past two years. The pandemic has brought about major changes that greatly impact the entire country's economy. The national and municipal governments are looking for measures to help us "build back better." The findings of this study may be helpful to the country's national and municipal governments. This study determines if the LGUs' classification as cities or municipalities significantly affects their competitiveness in the pre and mid-pandemic stages. This study's findings will assist the government in developing its strategies and deciding where to focus its attention to better support LGUs in their recovery programs. Finally, other researchers may include this study in their relevant research or utilize it as baseline information to help advance their study.

D. Scope and Limitations

This research study was conducted in the Philippines. The first-class through sixth-class local government units, independent components, components, and highly urbanized cities are among its subjects. The primary objective is to determine whether there is a significant difference between the cities' and municipalities' competitiveness before and during the pandemic and whether such difference is on account of the LGUs' classification. The pre-pandemic period covers 2019, and the mid-pandemic competitiveness period is 2020.

The CMCI database was the main source of data used in this investigation. The dependence on such is one of the main limitations, as the accuracy of the data is beyond the control of this study. Lastly, the CMCI database's competitiveness indicators may not have represented the various aspects of real competitiveness. The conclusions of this study are generalizable only in the Philippines.

II. REVIEW OF RELATED LITERATURE

The concept of competitiveness can be applied in various aspects. As such, it has no universal definition. In the Philippines, government competitiveness is considered to have started in the mid-1980s when there were privatization and deregulation in the public sector (Villamejor-Mendoza, 2020). Before this period, competitiveness has been mostly used in the private sector and businesses. Aiginger et al. (2013) have given their definition of competitiveness as "ability of a country (region, location) to deliver the beyond-GDP goals for its citizens today and tomorrow" (p. 13). In delivering these beyond-GDP goals, a competitive government provides, if not maximizes, "value" to its people. The value provision could be straightforward to discuss; however, executing activities and programs related to such is very challenging. According to Ho and Im (2012), a competitive government can take resources from inside and outside the country to improve and sustain the quality of the nation's condition and its people. An economy that attracts investments, provides jobs to people and resolves fluctuations, risks, complexity, and stresses is considered to be competitive (Villamejor-Mendoza, 2020).

In the Philippines, the National Competitiveness Council started measuring the competitiveness of the local government units through the four pillars: economic dynamism, government efficiency, infrastructure, and resiliency. Under economic dynamism, cost of doing business, cost of living, financial deepening, employment generation, local economic growth, local economy size, presence of business and professional organizations, productivity, safety compliant business, and active establishments in the locality are included. Under government efficiency, getting business permits, Anti-Red Tape Act (ARTA) compliance, health services capacity, school capacity, generation of local resources, and social protection are among the indicators. The availability of basic utilities, accommodation, financial technology capacity, health, education, information technology, LGU investment, road network, and transportation vehicles are covered for infrastructure. Lastly, resiliency is mainly focused on the budget for the Disaster Risk Reduction and Management Plan (DRRMP), disaster preparedness, sanitary system, and utilities.

Before the outbreak of the coronavirus in 2020, the Philippines was reported to have improved in global competitiveness. The Philippines placed at number five among the nine economies in the Association of Southeast Asian Nations (ASEAN) that were evaluated for the Global Competitiveness Report 2018-2019, which ranks 140 economies globally based on a set of productivity-related criteria. The Philippines also came in at number 56 globally (Saulon, 2019). The World Bank (2022) also reported that one of the most vibrant economies in the East Asia Pacific region had been that of the Philippines. Between 2010 and 2019, the average yearly growth rate climbed from 4.5%to 6.4%. The Philippines' economic vitality is based on a strong consumer demand

supported by a thriving labor market and significant remittances. With a growing population, an increasing middle class, and a sizable and young populace, the Philippines is a country with many opportunities. Business activity is vigorous, with substantial growth in the services sector, which includes the real estate, travel, banking, and insurance industries. However, all this promising performance was challenged when the coronavirus pandemic hit the world economy. It is to be noted that even before the pandemic, the Philippines already had serious challenges, especially in terms of the labor market (Asian Development Bank, 2022). The pandemic has even aggravated the existing challenges. Tabuga et al. (2020) noted that the pandemic affected the health care systems, particularly in developing nations like the Philippines. Millions of Filipinos cannot support themselves because of community quarantine, limited mobility, closure of establishments, and loss of jobs, and supporting these Filipinos amidst the pandemic is one of the government's main challenges. There are also limitations in tapping the allied counties because all nations are also addressing their constraints brought by the pandemic. The World Bank (2022) also noted that economic growth and poverty reduction had been negatively hampered by the COVID-19 pandemic and community quarantine strategies taken in the country. Growth decreased sharply in 2020, with the decline in tourism and remittances exacerbating the sharp decreases in consumer spending growth. Similar to how COVID-19 has harmed the earlier increase in real wages, which was designed to boost household incomes, especially for those from lower income categories, the Philippines' efforts to reduce poverty have also suffered.

The pandemic has seriously challenged both the national and local governments. Even those highly urbanized cities have been affected down to the last classification of the Philippine municipalities. The consequences of the pandemic did not make any exceptions. In the Philippines, LGUs are classified as a city or municipality based on several factors, and one is their annual income. Cities have at least P50,000,000.00 (based on the constant prices in 1991) annual income, while those with lower annual income are classified as municipalities (Department of Trade and Industry, 2020). In 1997, there were 61 cities, while in 2022, there were 146 cities already. Most of the cities can be found in Luzon. The cities' performance is measured through the Local Governance Performance Management System (LGPMS), a tool that determines the city’s capabilities and limitations in delivering essential public services (Senate Economic Planning Office, 2013). The indicators in the LGPMS include administrative, social, economic, environmental, and fundamentals of good governance. The performance of a local government unit is dependent on various factors. Dhimitri (2018) posted some of the theoretical arguments about the influence of the size of a municipality on its efficiency. Some of the arguments noted that large municipalities could be economically more efficient, with more democratic political processes, more opportunities for economic development promotions, and that they provide better distribution of services. Nonetheless, there are also theoretical assumptions that smaller municipalities

are better. However, concerning the COVID-19 pandemic government response, the Asian Development Bank (2020) emphasized that the cities and municipalities are not equally equipped to handle the situation and recover from a shock. Hence, assistance to the cities and municipalities may also differ depending on what they truly need.

III. METHODOLOGY

This section presents the variables and their indicators, research design and methods, and the statistical test and parameters used in this study.

A. Variables and Measures/Concept and Indicators

Table 1 shows the variables included in this study and their corresponding measures.

Table 1. Variables and their measures.

Variables	Measures
Government Efficiency (GE)	Government Efficiency Scores
Economic Dynamism (ED)	Economic Dynamism Scores
Infrastructure (Infra)	Infrastructure Scores
Resiliency (Res)	Resiliency Scores
LGU Classification (LGUClass)	Dichotomous Scoring
**Moderator*	0 – Municipality
	1 – City

This study utilized the database of the CMCI. Accordingly, the competitiveness of the LGUs is indicated in four main aspects – economic dynamism, government efficiency, infrastructure, and resiliency. According to CMCI (2020), economic dynamism revolves around the creation of stable business expansion and higher employment. Government efficiency is about the government's quality in providing effective and sustainable support for productive expansion. Infrastructure is the facilities that connect, expand, and sustain the provision of goods and services in the locality and its surroundings. Lastly, resiliency is related to an LGU's ability to absorb shocks and stresses and bounce back by creating jobs and increasing the productivity and income of the inhabitants. The competitiveness of the LGUs under these four pillars is measured by scores, which are mainly utilized in this study to quantify an LGU's competitiveness. For the LGU's classification/type, dichotomous scoring is used – 0 represents the municipalities, while 1 is for the cities

B. Research Design and Methods

This study is descriptive-causal research as it primarily investigates the significant difference between the LGUs' competitiveness before and during the COVID-19 pandemic and whether the suspected significant difference is on account of the LGU's classification of being a city or municipality.

Figure 1 shows the conceptual paradigm of the study for the significant difference between the competitiveness of the LGUs before and during the COVID-19 pandemic.

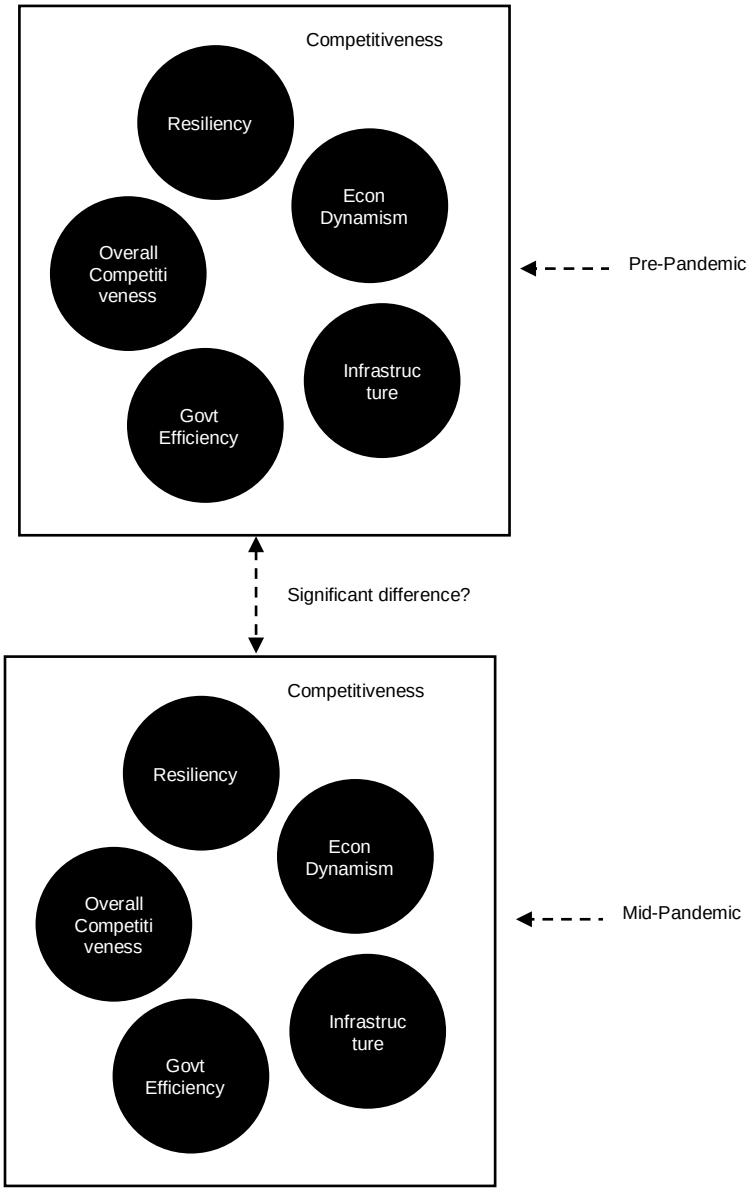


Figure 1. Conceptual paradigm for the significant difference between the competitiveness of the LGUs pre- and mid-COVID-19 pandemic.

It can be seen in Figure 1 that the four pillars plus the overall competitiveness before and during the COVID-19 pandemic are grouped in two different periods. The significant difference was examined individually.

Figure 2 shows the conceptual paradigm for testing whether the significant difference in the LGU competitiveness pre- and mid-pandemic is on account of their city or municipality classification.

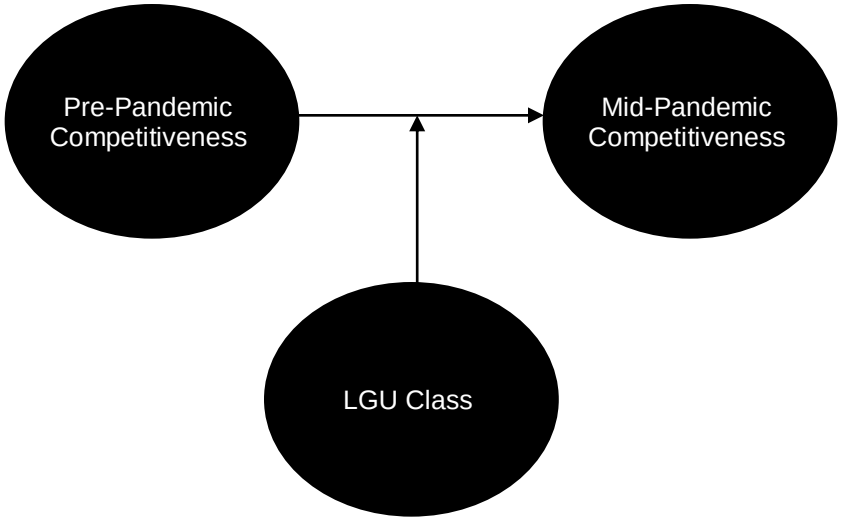


Figure 2. Conceptual paradigm for the moderating effect of LGU classification with regard to the significant difference between the pre and mid-pandemic competitiveness.

It can be seen in Figure 2 that the pre-pandemic competitiveness serves as the independent variable, the mid-pandemic competitiveness as the dependent variable, and the LGU Classification is the moderator. As a moderator, the LGU Classification variable may strengthen or weaken or not affect the path between the pre and mid-pandemic competitiveness.

C. Statistical Test and Parameters

Descriptive statistics such as means, standard deviations, and min and max were presented first to describe the basic features of the LGUs. Graphs were also provided to show the mean scores of the LGUs belonging to each classification mentioned earlier.

The main statistical tools used to analyze the data are the Wilcoxon Signed Rank Test and Structural Equation Modeling (SEM). At the onset, this study used the t-test; however, statistical tests have been performed, and it was revealed

that there were some statistical assumption violations. This has led to the utilization of a non-parametric t-test, which is the Wilcoxon Signed Rank Test. Additionally, this study utilized the SEM instead of the ordinary linear regression because it is deemed that the SEM is a more powerful tool to utilize if there are moderating variables being tested (Hair et al., 2014).

IV. ANALYTICAL RESULTS AND DISCUSSION

In this section, the results are presented and discussed. The descriptive statistics are presented first before the main objectives of this study are discussed.

A. Characteristics of the Local Government Units in the Philippines

Table 2 shows the classification of the local government units covered in this study, and the type of unit, whether municipality or city.

Table 2. Descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
LGU Classification	0.097	0.295	-	1.000
2020 Overall Competitiveness	32.114	4.641	5.121	59.309
2020 Economic Dynamism	5.007	1.431	1.587	14.131
2020 Government Efficiency	8.816	1.707	1.152	18.623
2020 Infrastructure	5.458	1.318	0.328	15.553
2020 Resiliency	12.833	1.431	-	20.684
2019 Overall Competitiveness	36.318	5.444	6.556	63.916
2019 Economic Dynamism	5.221	1.478	1.150	15.812
2019 Government Efficiency	9.706	1.891	-	19.196
2019 Infrastructure	5.479	1.320	-	15.007
2019 Resiliency	15.911	2.320	-	20.775
Number of observations	*1,512*			

It can be seen in Table 2 that 0.097 or 9.7% account for the city classification. It also means that 90.3% are classified as municipalities. The classification is based on the average annual income of the LGUs. Cities obviously generate higher annual income compared to municipalities. Based on the figures in Table 2, it is evident that the highest earning LGUs are way fewer than those earning high to low annual income. Additionally, if we compare the means of the variables, it can be observed that all the four pillars, and even the overall competitiveness, have declined. These can also be seen in the following graphs.

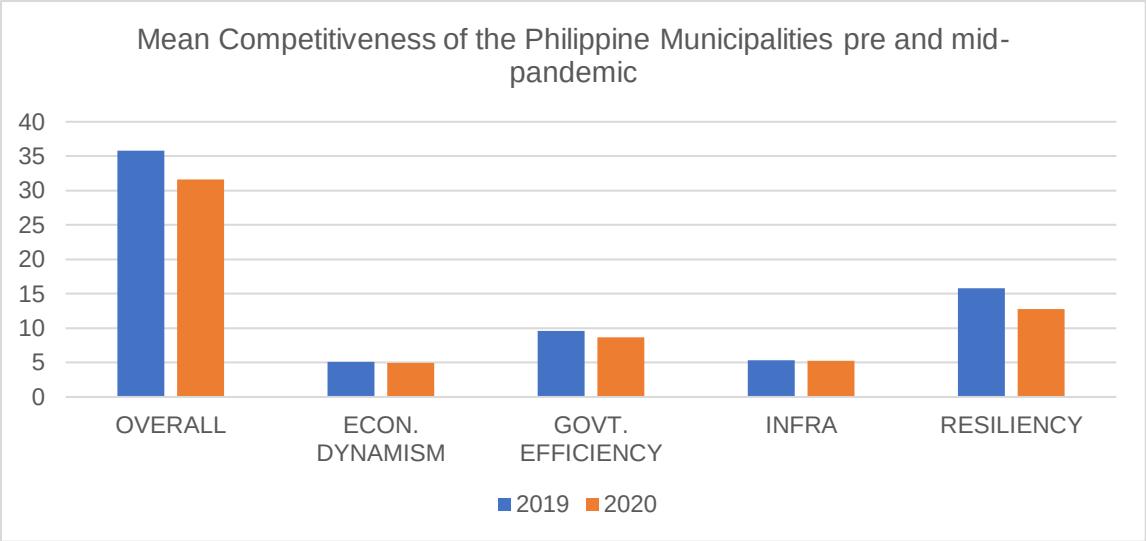


Figure 3. Comparison of the mean competitiveness of the Philippine Municipalities pre- and mid-pandemic.

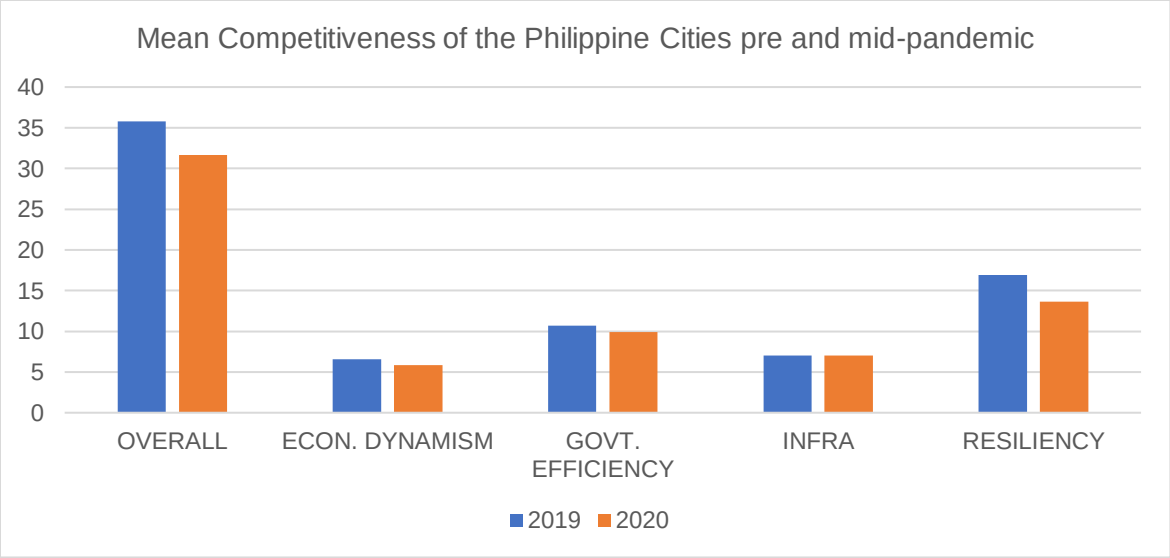


Figure 4. Comparison of the mean competitiveness of the Philippine cities pre- and mid-pand

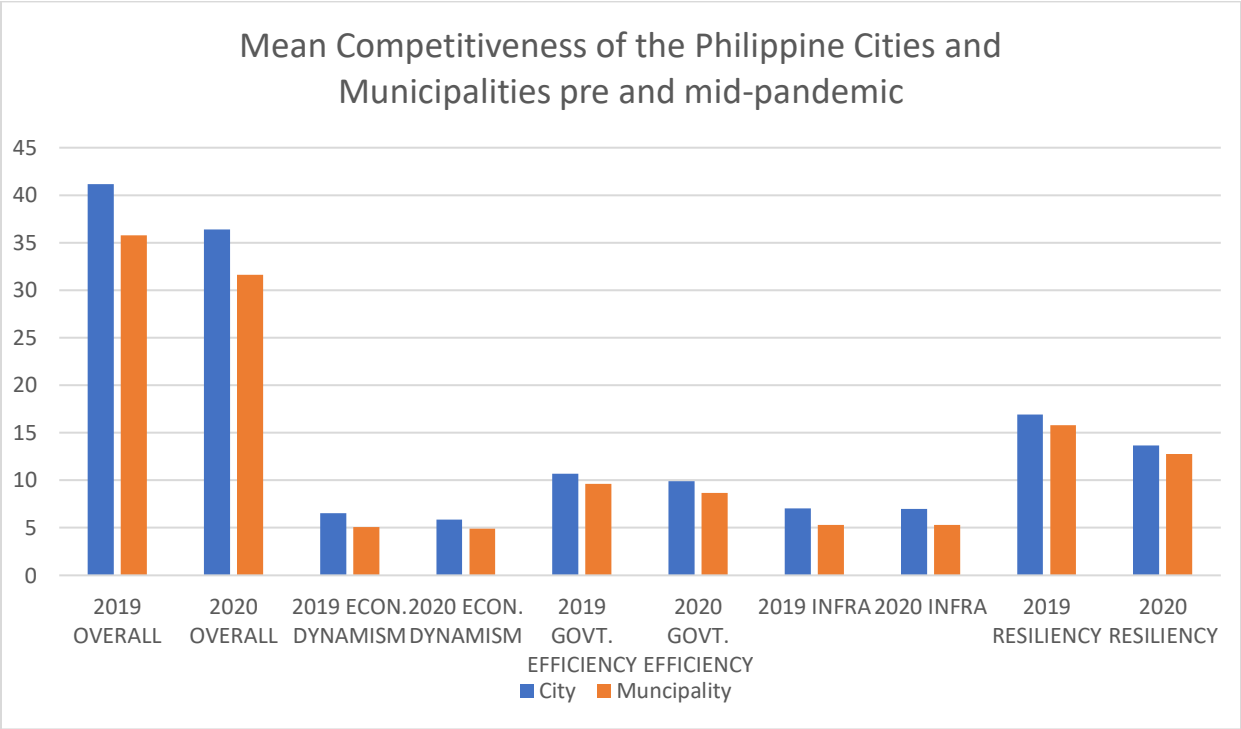


Figure 5. Comparison of the mean competitiveness of the Philippine LGUs pre- and mid-pandemic.

Competitiveness of the Philippines Cities and Municipalities Pre- and Mid-Pandemic

Table 3 shows the result of the Wilcoxon signed-rank test run to determine whether there is a significant difference between the Philippine LGUs' competitiveness before and during the COVID-19 pandemic.

Table 3. Wilcoxon signed-rank test result comparing pre- and mid-pandemic competitiveness of the LGUs in the Philippines.

Competitiveness	N	z	P-value	
Overall	1,512	30.76	0.0000	***
Economic dynamism	1,512	7.64	0.0000	***
Government efficiency	1,512	23.08	0.0000	***
Infrastructure	1,512	0.39	0.6999	
Resiliency	1,512	30.79	0.0000	***

****significant at 1% alpha level*

A total of 1,512 LGUs were used in the analysis. The test revealed that there was a statistically significant difference in mean overall competitiveness (z = 30.76, p =0.0000). These results indicate that the pandemic had a significant effect on the overall competitiveness of the Philippine cities and municipalities. The same significant difference has been found for the competitiveness pillars, except infrastructure (z = 0.30, p – 0.6999), which was found to be insignificant. Economic dynamism is granted to be significantly affected by the pandemic because of the change and restrictions in people's activities that have led to low economic activities and loss of jobs, and low income for the majority. This result supports the notion of Tabuga et al. (2020) that the community quarantine, limited mobility, closure of establishments, and loss of jobs have aggravated the existing economic challenges of the country. The finding also agrees with what was noted by the World Bank (2022) that the pandemic had hampered economic growth. The decline in consumer spending growth is also one of the consequences of the pandemic that significantly challenged the LGUs' economic dynamism. On the one hand, government efficiency has also been affected because of the uncontrollable factors brought about by the health crisis. Tabuga et al. (2020) had also noted this previously when they cited that the pandemic affected the health care systems in the country. All the LGUs have been challenged to handle the situation. Resiliency has also been significantly challenged because the pandemic is not just a health crisis but has also become an economic crisis. The ability of an LGU to bounce back after this shock has been affected much. On the other hand, interestingly, infrastructure was found to be insignificant. The result suggests that the pandemic did not affect the infrastructure scores of the LGUs. This could be because the infrastructure of the LGUs is not typically fixed rather than fluctuating as compared to the other three pillars of competitiveness. The accommodation capacity, financial technology, road networks, transportation vehicles, etc., have been in place even before the pandemic. What is only affected are their utilization, and not necessarily the infrastructures themselves.

The Moderating Role of LGU Classification in the Competitiveness of Philippine LGUs Pre- and Mid-Pandemic

Table 4 shows the result of the Structural Equation Model run to examine whether the LGU Classification moderates the path between the pre and mid-pandemic competitiveness of the Philippine LGUs.

Table 4. SEM result for the moderating role of LGU type between the Pre-pandemic and Mid-pandemic LGU competitiveness.

Paths	Path Coef.	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Pre-pandemic Overall Competitiveness -> Mid-pandemic Overall Competitiveness	0.727	0.022	32.992	0.000
LGU Type -> Pre-pandemic Overall Competitiveness	0.290	0.030	9.613	0.000
LGU Type -> Mid-pandemic Overall Competitiveness	0.039	0.034	1.285	0.199
Moderator_Type -> Mid-pandemic Overall Competitiveness	0.064	0.032	1.942	0.052
Pre-pandemic Economic Dynamism -> Mid-pandemic Economic Dynamism	0.723	0.020	36.428	0.000
LGU Type -> Pre-pandemic Economic Dynamism	0.297	0.031	9.425	0.000
LGU Type -> Mid-pandemic Economic Dynamism	-0.065	0.021	3.040	0.002
Moderator_Type -> Mid-pandemic Economic Dynamism	0.054	0.017	3.038	0.002
Pre-pandemic Government Efficiency -> Mid-pandemic Government Efficiency	0.676	0.017	38.866	0.000
LGU Type -> Pre-pandemic Government Efficiency	0.167	0.028	6.037	0.000
LGU Type -> Mid-pandemic Government Efficiency	0.074	0.018	4.120	0.000
Moderator_Type -> Mid-pandemic Government Efficiency	0.056	0.020	2.795	0.005
Pre-pandemic Infrastructure -> Mid-pandemic Infrastructure	0.717	0.023	30.748	0.000
LGU Type -> Pre-pandemic Infrastructure	0.382	0.032	12.037	0.000
LGU Type -> Mid-pandemic Infrastructure	0.070	0.020	3.469	0.001
Moderator_Type -> Mid-pandemic Infrastructure	0.035	0.017	2.024	0.043
Pre-pandemic Resiliency -> Mid-pandemic Resiliency	0.424	0.046	8.824	0.000
LGU Type -> Pre-pandemic Resiliency	0.140	0.022	6.391	0.000

LGU Type -> Mid-pandemic Resiliency	0.082	0.067	1.686	0.092
Moderator_Type -> Mid-pandemic Resiliency	0.102	0.127	0.356	0.722

Five models were run through the SmartPLS to determine whether the LGU Classification/Type moderates the path between the 2019 and 2020 overall competitiveness and individual pillars. For all the models, the pre-pandemic competitiveness does affect the mid-pandemic competitiveness ($p = 0.0000$). Though the country was hit by the pandemic, it is evident that if the LGU's competitiveness before the crisis is high, the LGU's mid-pandemic competitiveness tends to be higher as well. However, note that the LGU classification had a significant positive effect on the overall competitiveness before the COVID-19 pandemic ($p = 0.0000$), and this considerable effect was lost ($p = 0.199$) during the pandemic. Concerning the overall competitiveness, it seems that the LGU Classification has nothing to do anymore with the LGUs' overall competitiveness during the pandemic. This is also validated by the result for the moderating variable, which is proven to be insignificant ($p = 0.052$). This result implies that the units are on equal footing when it comes to the overall competitiveness of the LGUs. If before (pre-pandemic), the cities had an advantage over the municipalities with regard to overall competitiveness, such an advantage was lost during the pandemic. All the LGUs have been significantly affected during the pandemic, regardless of their classification.

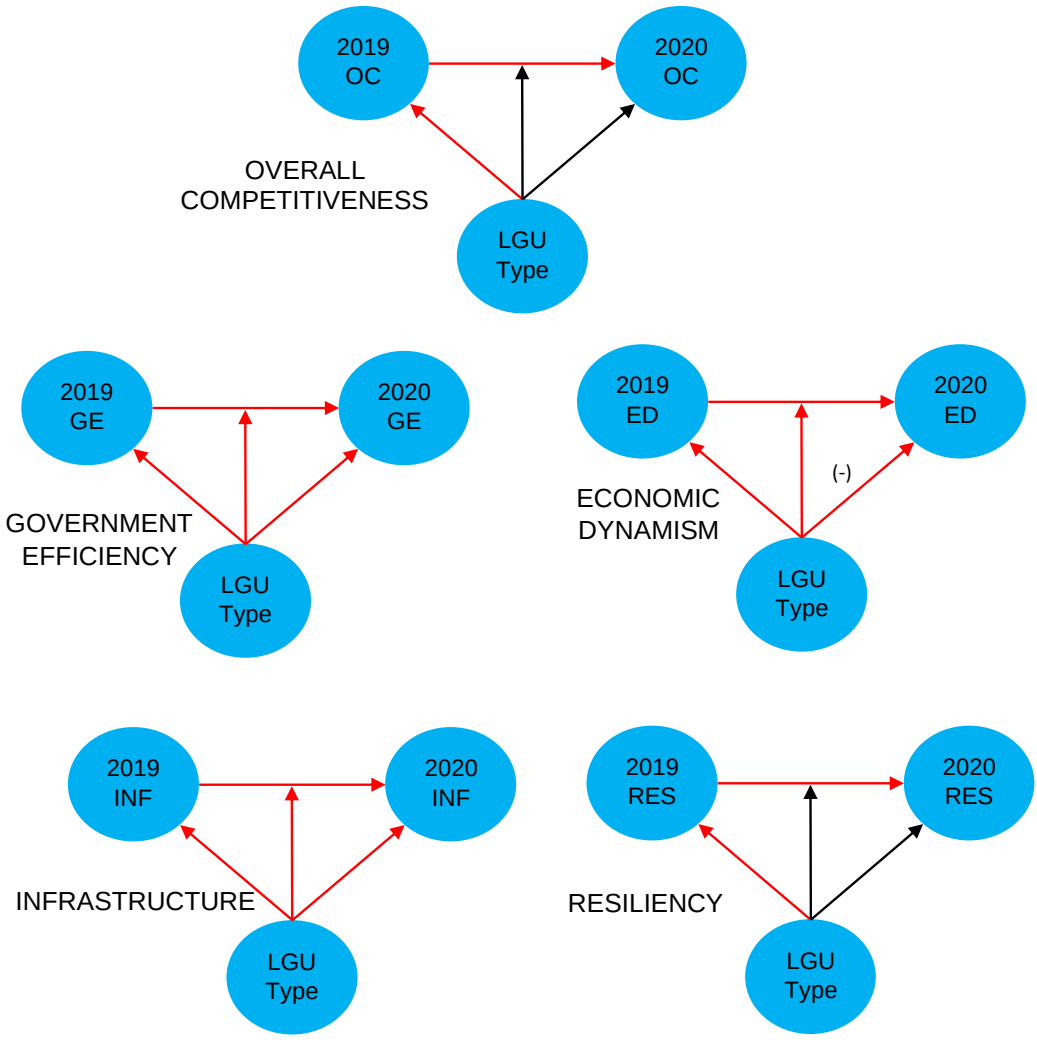
The previous paragraph talks about the overall competitiveness; however, if we look at Table 4 again, we can see that there is something different in the individual pillars. Concerning economic dynamism, cities perform better than the municipalities before the COVID-19 pandemic. However, during the pandemic, the cities seem to be more disadvantaged compared to the municipalities (coefficient = -0.065, $p = 0.002$). With the very limited movement of the people and loss of income, cities have suffered more. This could be attributed to their annual income. If the cities contribute higher annual income to the country, when the pandemic hits, they have also lost a higher portion of such income they used to earn. The result for the moderating variable validates this idea. Accordingly, under economic dynamism, LGU classification does moderate the path between the 2019 and 2020 economic dynamism ($p = 0.002$). This result suggests that an LGU's classification accounts for the significant difference between the pre and mid-pandemic economic dynamism, suggesting that cities are more affected by the pandemic.

Regarding government efficiency, Table 4 reveals that local government is more efficient in cities before ($p = 0.0000$) and during ($p = 0.0000$) the COVID-19 pandemic. The result also suggests that the LGU classification significantly moderates the path between the pre and mid-period of the COVID-19 pandemic. The result can be attributed to the capacity of the cities to provide better quality and reliable government services and support, given their higher income and more resources. The result for infrastructure is also similar to the result in government efficiency. Cities have better infrastructure compared to cities even before the pandemic, and being a city does matter in the significant difference between the pre and mid-pandemic ($p = 0.0430$)

competitiveness of the Philippines LGUs. These results support the notion of the Asian Development Bank (2020) that the cities and municipalities are not equally well-equipped to respond to and handle the various situations brought by the COVID-19 pandemic.

Lastly, resiliency has an interesting result as well. Table 4 reveals that cities are more resilient before the COVID-19 pandemic (p = 0.0000). However, such an advantage was lost during the pandemic, as it is proven that LGU classification has nothing to do anymore with tan LGU's resiliency (p = o.092). This is also validated by the result for the moderating variable. Accordingly, LGU classification does not moderate the path between the 2019 and 2020 resiliency (p = 0.722). This result suggests that, during the pandemic, all the LGUs' resiliency has been significantly affected, regardless of their classification as a city or municipality.

Figure 6 summarizes the result of all the models run through SEM. The solid red lines are significant paths, while the solid black lines are paths found to be insignificant.



V. CONCLUSION, RECOMMENDATIONS, POLICY IMPLICATIONS

This section presents the conclusion and discusses the recommendations and policy implications based on this study's findings.

A. Conclusion

This study examined the 1,512 Philippine LGUs composed of 146 cities and 1,366 municipalities. It mainly investigated whether there is a significant difference between the competitiveness of the LGUs before and during the COVID-19 pandemic and whether the LGU classification (city or municipality) has something to with such a significant difference. The pre-pandemic period coverage is 2019, while the mid-pandemic is the year 2020. The variables covered in this study are Government Efficiency (GE), Economic Dynamism (ED), Infrastructure (Infra), and Resiliency (Res), which are all measured using the scores provided by the CMCI. The moderator variable – LGU Classification (LGUClass), is indicated through dichotomous scoring (1 for cities and 0 for municipalities). The Wilcoxon Signed Rank Test was used to test the significant difference between the pre and mid-pandemic competitiveness of the LGUs in the Philippines. The Structural Equation Modeling (SEM) was employed to test the moderating effect of the LGU classification/type on the path between the pre and mid-pandemic competitiveness (overall and individual pillars). Results revealed that the competitiveness of the LGUs in the Philippines before and during the COVID-19 pandemic is significantly different with regard to the overall competitiveness, economic dynamism, government efficiency, and resiliency, but not for infrastructure. Additionally, it was also found that the classification of the LGUs has nothing to do with the significant difference in the pre and mid-pandemic in terms of the overall competitiveness and resiliency. However, in terms of the individual pillars of economic dynamism, government efficiency, and infrastructure, the LGU classification was found to be a moderator between pre- and mid-pandemic competitiveness.

Unlike the other pillars of competitiveness, infrastructures are fixed rather than fluctuating. This could be one reason why the competitiveness of the LGUs in this pillar is not significantly different before and during the pandemic. The utilization of such could have been affected but not the infrastructures themselves. Concerning the significant difference between the pre and mid-pandemic performance of the other pillars, it was validated in this study that the COVID-19 pandemic has impacted the LGUs' competitiveness. Additionally, the classification of the LGUs as cities and municipalities does not account for the significant difference in the overall competitiveness. However, if the individual pillars are examined, it can be inferred that there are aspects wherein it is more advantageous and disadvantageous to be a city. The cities and municipalities in the Philippines do not have equal capacity to respond to and handle the COVID-19 situation

B. Recommendation

If the national and local governments would like to improve the overall competitiveness of the LGUs, based on the results of this study, it is advised that they assist all the LGUs regardless of their classification. It was found in this paper that the overall competitiveness of the LGUs and each of the four pillars have declined from the pre-pandemic to mid-pandemic period. More must be done to bring back better the dynamism in the economy of the cities. The LGUs, especially the cities, may put more focus on providing policy and financial support to the businesses. Business creation and expansion are of high significance to establishing more dynamic economy because it will also lead to employment generation. At the end of the line, business expansion and employment generation will also help the LGUs to become more resilient. Further, as found in this study, much should be improved for the municipalities to have a better and more efficient government. As cities have been proven to have more efficient government pre- and mid-pandemic, they may put more of their effort in rebuilding their economic dynamism. It is also recommended to conduct a comprehensive survey or study among the LGUs in the Philippines so that the national government's focus may be more aligned to what the cities and municipalities substantially need to recover and improve their competitiveness. Lastly, since the study did not find any significance of the moderating variable in the pre- and mid-pandemic overall competitiveness of the LGUs, it is also recommended to conduct a study covering other potential factors that may account for the significant difference in the LGUs' competitiveness. For instance, information and communications technology variables may be explored. This study acknowledges some limitations especially on the period covered. However, this is an initial step towards analyzing the competitiveness of the LGUs before and during (or even post after several years) the COVID-19 pandemic.

C. Policy Implications

Part of the underlying objectives of this study is to aid both the national and local government units in formulating strategies and policies to help the LGUs bounce and build back better from this COVID-19 pandemic. Based on the results and recommendations above, the government may design and implement policies that will benefit the cities and municipalities in the Philippines. The Philippine government must exhaust its efforts to deliver not just the basic services to its people but also devise new and innovative ways to build back the community and be more resilient to shocks like the pandemic crisis. In this paper, it is proven that the pandemic has made significant changes in the competitiveness of the cities. An LGU's competitiveness indicates its capacity to provide quality services to its people. Because of the pandemic, this quality has been negatively affected, and as part of rising from this crisis, this quality must be built back better. Also, the national

government should strategize and align its priorities. No LGUs should be left out. All the government units have suffered. Thus, all must be extended assistance in building back better. As recommended above, a comprehensive study of the Philippines LGUs may be conducted to have more aligned strategies and policies. For instance, this study has proven that cities are more affected by their economic dynamism compared cities. Thus, more efforts may be given to recovering the economy of the cities through business creation and/or expansion and employment generation. While on the one hand, the government efficiency of the municipalities may be strengthened through various programs.

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