

# Competitiveness Index Among Selected Government Units in the Philippines

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## ABSTRACT

This study analyzed the hidden patterns and unknown correlations among the indicators of the 4 CMCI Pillars – Economic Dynamism, Government Efficiency, Infrastructure and Resiliency. Based on the results of the Pearson’s Correlation statistics, the critical variables were Local Economy Size, Productivity, Increase in Employment, Local Economy Structure, Transportation Vehicles, Education Facilities, Health Facilities, Capacity of Health Services and Accommodation Capacity. This means that the government units may consider allocating resources and developing projects for the indicators enumerated herein. If there are existing policies and programs pertinent to these targets, they should be revisited, strengthened and improved. New policies may be designed that strengthen these indicators. Government units should take on a more efficient and strategic approach to governance, that is, focusing on targets that reinforce each other, variables that have strong positive relationships, and indicators that create cascading effects and benefits to other areas of development.

Keywords: Competitiveness Index, Economic Dynamism, Government Efficiency, Infrastructure, Resiliency, Pearson’s Correlation Coefficient, Critical Variables

## I. INTRODUCTION

The Philippines is an archipelagic country situated in the western Pacific Ocean with a population of 109,035,343 (PSA, 2020). It is divided into 18 administrative regions to coordinate planning and

organize national government services across multiple local government units. This study focused on the Bicol Region which is subdivided into 6 provinces, with a total of 7 cities and 107 municipalities. It primarily utilized the CMCI (Cities and Municipalities

Competitiveness Index) ratings of the 114 cities and municipalities.

The CMCI is an annual ranking of Philippine cities and municipalities developed by the Philippine government's National Competitive Council through the Regional Competitiveness Committees with the assistance of the United States Agency for International Development (DTI, 2022). It adopted the framework of Michael Porter which is also used in some global surveys on competitiveness (Porter (2004) defined competitiveness as based on location and is essentially the productivity that companies located there can achieve. Using the same lens, the CMCI looks into local competitiveness as to how a city or municipality knows its resources and how it uses these to improve its standard of living.

The CMCI framework encompasses 4 convergent pillars: Economic Dynamism, Government Efficiency, Infrastructure and Resiliency. Economic dynamism is associated with activities that create stable expansion of business and industries which lead to higher employment. Government efficiency refers to the quality and reliability of government services and government support for effective and sustainable productive expansion. Infrastructure pertains to the physical building blocks that connect, expand, and sustain a locality and its surroundings to enable the provision of goods and services. Resiliency is the capacity of a locality to sustain businesses and industries to create jobs, raise productivity, and increase household income despite the shocks and stresses encountered (DTI, 2021).

#### A. Purpose of the Study

This study intended to further understand how the cities and municipalities of the Bicol Region fared in the CMCI indicators by exploring hidden patterns, underlying correlations and trends among the variables across the 114 municipalities and cities. Specifically, it aimed to:

1. Explore correlations between variables under each CMCI Pillar;
2. Explore correlations between variables across the 4 CMCI Pillars;
3. Examine patterns of relationships among the indicators through the statistical analysis results;
4. Formulate specific recommendations to concerned government units based on the information derived from the statistical analysis.

#### B. Research Limitations

The study was mainly based on the secondary data accessed through the CMCI Data Portal covering the 114 cities and municipalities of the Bicol Region. Therefore, it speaks only of the situation in said areas and conclusions may not be true with other regions. It utilized the CMCI data of year 2020 being the latest and having relatively complete entries. With CMCI as the sole source of data, the study did not conduct triangulation or validation with other data sources. The statistical analysis used the Minitab Statistics software.

#### C. Theoretical Considerations

There are numerous economic theories that attest to the existence of relationships between and among the variables covered by the CMCI Pillars. Some of them are presented below.

Mankiw (2016) has introduced the Ten Principles of Economics and one of which is that "Government can sometimes improve market outcomes." This study interpreted this principle such that government regulations and interventions may enhance economic dynamism. The invisible hand can work only if the government enforces the rules and maintains the institutions that are key to a market economy. The variables that were theoretically related based on the principle were subjected to correlation statistics.

Mankiw (2016) likewise claimed that "A country's standard of living depends on its ability to produce goods and services." Almost all variation to in living

standards is attributable to differences in countries' productivity – that is, the amount of goods and services produced from each unit of labor input. Similarly, the growth rate of a nation's productivity determines the growth rate of its average income.

The Theory of Human Capital asserts that the aggregate stock of competencies, knowledge, social, and personal attributes of a person have a strong influence on one's ability to create intrinsic and measurable economic value. These attributes can spell the wage rate and future of the person in the labor market. Human capital theory is widely discussed in economic development, productivity analysis, innovation, public policy, and education.

John Maynard Keynes authored a book titled "The General Theory of Employment, Interest and Money" where he discussed the determinants of aggregate demand – consumption expenditures, investment expenditures and government expenditures. This means that the government is one of the largest participant in the economy and therefore can greatly influence both the supply and demand of goods and services. Moreover, the government is one of the biggest employers whether in the local or national economy.

Another theory is the Phillip's Curve which was introduced by Alban William Phillips who claimed that there exists an inverse relationship between inflation and unemployment. An economy would have to choose whether to arrest inflation or to curb unemployment. It is almost impossible to solve both because solving one will worsen the other. For instance, if the government sets a price ceiling in order to halt inflation, firms will suffer from lower profits which will demotivate production and eventually may opt to lay off workers. Such situation will worsen unemployment.

## II. Review of Related Literature

The purpose of the study was further supported by existing literature particularly on the cross-sectional relationship of the 4 CMCI Pillars. This section presents a selection of these studies.

### A. Economic Dynamism and Government Efficiency

The study of Alam (2017) found that government effectiveness has a significant positive effect on economic growth. This was supported by Oyedele (2016) that good governance is now recognized, in a manner that was only more vaguely in the past, as a necessary condition for economic growth and reduction of poverty. The income level and existing market structure of a country affect the governance-growth relation (Alam, 2017). Zhuo (2020) affirmed the direct significant effect of rule of law, control of corruption, and voice and accountability on economic growth of developed countries. Conversely, Green (2015) posited that economic transformation can have a strong effect on governance, giving rise to interest groups that push for accountable leaders and effective institutions. Over time, economic transformation can therefore advance core governance objectives.

Many staple governance programs such as public financial management and taxation contribute to economic development (Green, 2015). There is positive effect of increase in labor force, gross capital formation, and trade on economic growth, while inflation exerts a negative effect on economic growth. Moreover, high level of initial GDP is associated with low growth rate (Alam, 2017). Additionally, there is indirect significant effect of government effectiveness, political stability, and regulatory quality on economic growth of developed countries (Zhuo, 2020). The impact of government effectiveness on economic growth is positive in the sub-sample of middle-income countries but the effect is not statistically significant (Alam, 2017).

Moreover, Bassam (2013) asserted in her study that correlation between economic growth and the quality of governance highly depend on levels of human development and on indicators used to capture the quality of governance. A better understanding of growth and economic transformation can improve governance work (Green, 2015) and that governance indicators are important to understand better a country's economy (Zhuo, 2020).

### **B. Economic Dynamism and Infrastructure**

The impact of infrastructure index on economic growth is positive and statistically significant (Shoukat, 2016). Physical infrastructure is an aspect of a region's entrepreneurial ecosystem and previous studies suggest that infrastructure is positively associated with entrepreneurial activity, a key component of economic dynamism (Bennett, 2018). It is a major component of the investment climate, leading to reduced cost of doing business and enabling people to access markets (Oyedele, 2016). It has a direct impact on tourism and trade (Suleiman et al., 2014). Francois & Machim (2007) confirmed that good infrastructure reduces the cost of transportation of goods and services and attracts tourism due to the ease in connecting from one place to another. Infrastructure promotes trade and integration into world markets, and is key to human development, including the delivery of social services such as health and education (Oyedele, 2016). Results of the study of Meso et al. (2009) substantiated a significant relationship between national information infrastructure (NII) and socio-economic development. The study of Suleiman et al. (2014) provided evidence from statistical results which attested to growth-led tourism, tourism-led infrastructure and infrastructure-led growth in the short-run.

Infrastructure deficiencies seriously constrain the productivity of private investments in most cities in developing countries. Firms must invest a good proportion of their capital on private electric power

generator. Traffic congestion impedes the movement of goods and services and thus reduces the economics of agglomeration of urban markets. Inadequate public collection and disposal of solid waste add to the deterioration of air, water and land. These public infrastructure services constitute needed intermediate inputs to economic activities. When such services are not available, private enterprises and households are forced to provide them on their own and most times from informal sources. The poor pay higher prices for services from informal and non-standard infrastructural providers (Oyedele, 2016).

The study of Maruf (2019) found a long-run asymmetric relationship between infrastructure and economic growth but symmetric relationship in the short-run. But the study of Shoukat (2016) had a different story suggesting that public physical infrastructure provision improved the economic conditions by contributing towards growth in the long-run. This was supported by the study of Bennett (2018) which posited that infrastructure spending exerts a short-term negative impact on the establishment entry, birth and total job creation, and net job creation rates. Maruf (2019) also found the causal direction of economic development in Indonesia from gross fixed capital formation to labor.

Studies recommended the expansion of investment in the infrastructure industry to boost economic growth (Maruf, 2019), the necessity of efficient public sector investment for the sufficient provision of physical infrastructure (Shoukat, 2016), the building of NII capacity to contribute to country development, both directly via impacts on socio-economic development and indirectly via impacts on governance (Meso et al, 2009), the designing of robust infrastructure policies guiding the infrastructure and country's economy in both the short-run and long-run period (Maruf, 2019),

The analysis of Bennett (2018) also considered whether the effect of infrastructure development on

dynamism is moderated by several other elements of the entrepreneurial ecosystem such as corruption, labor market frictions and/or human capital. Analogously, Shoukat (2016) emphasized that transparency and financial autonomy should be insured for the selection of public investment in infrastructure projects and further proposed public policy reforms for infrastructure expenditures to promote inclusive growth

### C. Government Efficiency and Infrastructure

The study of Oyedele (2016) emphasized that good governance and management is very critical to efficient delivery of urban infrastructure services. The study of Meso et al. (2009) substantiated a significant relationship between national information infrastructure (NII) and governance. There is currently a wide gap between public desires and government policy with respect to urban governance. Despite the huge capital allocation to infrastructure, there is not much to be shown in the ground in most Third World countries (Oyedele, 2016). Another study by Haque (2021) demonstrated how governance processes can undermine the physical delivery of infrastructure, and concluded that widening access to public infrastructure requires significant investment in effective governance processes for low-income urban dwellers. Oyedele (2016) further declared that the performance of government is critical to effective management of urban growth as urban management and governance are concerned with policies, plans, programs and practices that seek to ensure that population/city growth is matched by access to basic infrastructure and shelter.

### III. Research Design and Methodology

The study tested all variables of the CMCI which was composed of 10 for each of the 4 Pillars or a total of 40 variables (DTI, 2022). For brevity, acronyms were used as listed in the table below.

**Table 1.** List of acronyms of the CMCI variables

CMCI Pillar	Acronym	Variable
Economic Dynamism	CDB1	1. Cost of doing business
	CL1	2. Cost of living
	FD1	3. Financial deepening
	IE1	4. Increase in employment
	LEG1	5. Local economy growth
	LES1	6. Local economy size
	PBPO1	7. Presence of business and professional organizations
	P1	8. Productivity
	SCB1	9. Safety compliance business
	LESt1	10. Local economy structure
Government Efficiency	CBP2	11. Compliance to business permit & learning system standards
	BRE2	12. Business registration efficiency
	CHS2	13. Capacity of health services
	CND2	14. Compliance to national directives
	CSS2	15. Capacity of school services
	RP2	16. Requisition of performance
	PO2	17. Peace and order
	PIP2	18. Presence of investment promotion unit
	CGR2	19. Capacity to generate local resources
	SP2	20. Social protection
Infrastructure	ABU3	21. Availability of basic utilities
	AC3	22. Accommodation capacity
	FTC3	23. Financial technology capacity
	DP3	24. Distance to ports
	E3	25. Education
	H3	26. Health
	ITC3	27. IT capacity
	LI3	28. LGU Involvement



	GN3	29. Good network
	TV3	30. Transportation vehicles
Resiliency	ADD4	31. Annual disaster drill
	BD4	32. Budget for DRRMP
	DRR4	33. Disaster risk reduction plan
	EI4	34. Emergency Infrastructure
	EP4	35. Employed population
	EWS4	36. Early warning system
	LRA4	37. Local risk assessment
	LUP4	38. Land use plan
	SS4	39. Sanitary system
	U4	40. Utilities

First, the 10 variables under Economic Dynamism were subjected to multiple correlation analysis. Second, the targets under Economic Dynamism were correlated with those under Government Efficiency, Infrastructures, and Resiliency, and so on. This was likewise done with the 10 criteria under Government Efficiency, Infrastructure and Resiliency. Third, the statistical analysis results were examined to find hidden patterns and unknown trends. The study utilized the Pearson's Correlation Coefficient, with the formula below taken from study.com, as a tool for statistical analysis, using the Minitab Statistics Software.

$$r = \frac{N\sum xy - (\sum x)(\sum y)}{\sqrt{[N\sum x^2 - (\sum x)^2][N\sum y^2 - (\sum y)^2]}}$$

Where:

- N = number of pairs of scores
- $\sum xy$  = sum of the products of paired scores
- $\sum x$  = sum of x scores
- $\sum y$  = sum of y scores
- $\sum x^2$  = sum of squared x scores
- $\sum y^2$  = sum of squared y scores

The analysis of statistical results zeroed in on the variables that showed a Pearson's R within the range 0.75-1.00, being the study's basis of strong relationship. The level of significance, which was indicated by the P-value, was set within the range of 0-0.05.

#### IV. Findings and Discussion

##### A. Variables with Strong Correlation

The statistical analysis revealed that all 40 variables tested showed a positive relationship with each other. It established a shortlist of critically important variables which pertains to those with very strong correlation or a Pearson's R of 0.75-1.00. It disclosed a total of 12 indicators as enumerated in the table below.

**Table 2.** Variables with strong and positive correlation

Rank	Variable 1	Variable 2	Pearson's R	P-Value
1.	P 1	IE 1	0.941	0.000
2.	AC 3	LES 1	0.832	0.000
3.	TV 3	LES 1	0.832	0.000
4.	AC 3	CHS 2	0.825	0.000
5.	TV 3	E 3	0.803	0.000
6.	H 3	E 3	0.801	0.000
7.	H 3	CHS 2	0.790	0.000
8.	TV 3	H 3	0.789	0.000
9.	TV 3	AC 3	0.782	0.000
10.	H 3	LES 1	0.769	0.000
11.	E 3	AC 3	0.759	0.000
12.	LESt 1	P 1	0.750	0.000

The study examined patterns of relationship among the indicators based on the statistical results. One of these patterns was the relationship between variables within each Pillar. There were 2 strong relationships under Economic Dynamism and 5 under Infrastructure. There was no significant association between variables under Government Efficiency and Resiliency.

**Table 3.** Variables under Economic Dynamism with strong correlation

Rank	Variable 1	Variable 2	Pearson's R	P-Value
1.	IE1	P1	0.941	0.000
2.	P1	LESt1	0.750	0.000

Increase in Employment (IE1) was strongly and positively correlated with Productivity (P1), with the highest Pearson Correlation Coefficient among all the relationships tested. The CMCI observed a business situation where the gross sales are increasing relative to the number of employed. Although the statistical analysis did not deal with causal relationship, this may be explained by the economic theories discussed earlier. A productive workforce reduces cost and increases profit thereby enabling businesses to increase production which necessitates hiring of additional labor.

Productivity (P1) and Local Economic Structure (LESt1) were strongly and positively related. A big number of active establishments in the locality and growing local economic activity stimulates competition among firms. Such situation increases the firm's resolve to build their physical and financial resources which are important elements in boosting labor productivity.

**Table 4.** Variables under Infrastructure with strong correlation

Rank	Variable 1	Variable 2	Pearson's R	P-Value
1.	E3	TV3	0.803	0.000
2.	E3	H3	0.801	0.000
3.	H3	TV3	0.789	0.000
4.	AC3	TV3	0.782	0.000
5.	AC3	E3	0.759	0.000

Education Facilities (E3) and Transportation Vehicles (TV3) may be strongly associated because sufficient education infrastructure would encourage parents and students to avail of the schooling services. Participation in formal education would require efficient transportation system and attract more entrepreneurs to provide transport facilities and vehicles.

Education Facilities (E3) and Health Facilities (H3) were strongly correlated because one complements the other. Schools set up health-related projects and conduct health monitoring activities for their students, faculty and staff. This would necessitate adequate health facilities in communities with a considerable number of schools. An educated population would be aware of their health concerns and may oblige their leaders to improve the health infrastructure. A healthy population would be more disposed to attend school and thereby increase the need for more schools and classrooms.

Health facilities (H3) and Transportation Vehicles (V3) were strongly related because the availability of health centers, clinics and hospitals would attract more patients and health workers, thereby creating the need for mobility and transport. The increase in the number of vehicles may cause transport-related health issues which will necessitate reliable health facilities.

Accommodation Capacity (AC3) and Transportation Vehicles (TV3) were significantly related because each category of infrastructure is essential if there is a considerable number of outsiders such as tourists, workers or students from other places, or transient dwellers. These people would need accommodation. Then they would need transport as they regularly transfer from the boarding house, dormitory or hotel to their place of work, school or tourism destination.

Accommodation Capacity (C3) and Education Facilities (E3) were significantly associated because the presence of educational institutions would attract students, faculty and staff from other places. As earlier mentioned, high number of outsiders would require accommodation facilities.

Another pattern that was examined was the relationship of variables across the Pillars. There were 3 strong associations between variables across Economic Dynamism and Infrastructure and 2 strong correlations of variables across Government Efficiency and Infrastructure. As claimed in existing literature, there was a statistical relationship between Economic Dynamism and Government Efficiency but the Pearson's R was less than 0.75. There was no significant association between variables under Resiliency and the other 3 Pillars.

**Table 5.** Variables under Economic Dynamism and Infrastructure with strong correlation

Rank	Variable 1	Variable 2	Pearson's R	P-Value
1.	LES 1	AC 3	0.832	0.000
2.	LES 1	TV 3	0.832	0.000
3.	LES 1	H 3	0.769	0.000

Local Economy Size (LES1) and Accommodation Capacity (AC3) are positively and strongly associated. These variables reinforce each other. An increase in the level of production and in income received for good and services reflects a booming economy. This would attract outsiders whether as employees or customers of the businesses. This may give rise to demand for additional accommodation facilities. On the other hand, residents who set up accommodation facilities become part of the business sector thereby expanding the local economy.

Local Economy Size (LES1) is directly and significantly related with Transportation Vehicles (TV3). An expanding economy would necessitate greater mobility of the local population as well as constant transfer of goods and services. A significant number of various types of motorized transport likewise represents business which contributes to the further expansion of the local economy.

Local Economy Size (LES1) is proportionally and significantly associated with Health infrastructure (H3). If the local economy is growing, this would benefit both the public and private sectors in several ways. The local government will collect more tax revenues due to increasing number of businesses. Part of these taxes can then be allocated to healthcare facilities such as public hospitals, clinics and ambulance cars. A growing economy results from profitable enterprises which may include providers of health services. Private health care providers



which find their commerce gainful will acquire additional health equipment or even set up branches within and outside the locality. Improved health facilities may lead to physiologically able workforce which would contribute to a growing economy.

This observation confirmed the assertions in the theoretical considerations and related literature particularly that the impact of infrastructure on economic growth is positive and statistically significant.

**Table 6.** Variables under Government Efficiency and Infrastructure with strong correlation

Rank	Variable 1	Variable 2	Pearson's R	P-Value
1.	CHS 2	AC 3	0.825	0.000
2.	CHS 2	H 3	0.790	0.000

Capacity for Health Services (CHS2) was strongly and positively correlated with Accommodation Capacity (AC3). During the COVID pandemic, health services included quarantine facilities. In areas that lack clinics and hospitals, the accommodation facilities were used so the latter reinforced health capabilities. The presence of transient residents using the accommodation facilities would require more health services.

Capacity for Health Services (CHS2) was strongly and positively correlated with Health Infrastructure (H3). These were obviously related because the availability of hospitals, clinics and health facilities is a vital element of effective health services.

As cited earlier under related studies, good governance is very critical to efficient delivery of infrastructure services. Widening access to public infrastructure requires significant investment in effective governance processes.

### B. Variables with Various Strong Correlations

The study discovered a group of variables that showed strong and positive correlation with a considerable number of CMCI targets. As stated earlier, correlation analysis contributes to understanding particular variables and aids in locating the critically important variables with which other variables are associated.

**Table 7.** Transportation Vehicles

Variable 1	Variable 2	Pearson's R	P-Value
TV 3	LES 1	0.832	0.000
TV 3	E 3	0.803	0.000
TV 3	H 3	0.789	0.000
TV 3	AC 3	0.782	0.000

Transportation Vehicles (TV3) was posted as one of the critical variables because it had direct and strong correlation with 4 indicators under Economic Dynamism and Infrastructure as shown in the table above. The accomplishment of this target was associated with better performance along Local Economy Size (LES1), Education facilities (E3), Health facilities (H3) and Accommodation Capacity (AC3).

**Table 8.** Productivity

Variable 1	Variable 2	Pearson's R	P-Value
P 1	IE 1	0.941	0.000
P 1	AC 3	0.744	0.000
P1	LESt1	0.750	0.000

Productivity (P1) was another critical indicator because it had positive and strong relationship with 3 variables. Productivity is a very important. It means greater quantity of output with a relatively low amount of input. It generates numerous economic benefits both to employers and workers. A productive workforce is key to economic growth and development. Productive resources are maximized, which benefits the firm in the short-run and towards the long-run, the whole economy gains because the inputs that were saved may be used in other productive endeavors and therefore benefit more people.

**Table 9.** Local Economy Size

	Variable 1	Variable 2	Pearson's R	P-Value
1	LES 1	AC 3	0.832	0.000
2	LES 1	TV 3	0.832	0.000
3	LES 1	H 3	0.769	0.000

Local Economy Size (LES1) was another important variable because it had positive and strong association with 3 variables. The accomplishment of this criteria was related with better performance along Accommodation Capacity (AC3), Transportation Vehicles (TV3) and Health Infrastructure (H3), all under Infrastructure.

**Table 10.** Health Infrastructure

Variable 1	Variable 2	Pearson's R	P-Value
H 3	E 3	0.801	0.000
H 3	CHS 2	0.790	0.000
H 3	LES 1	0.769	0.000

Health Infrastructure (H3) had direct and strong correlation with Education facilities (E3), Capacity of Health Services (CHS2) and Local Economy Size (LES1), variables which belong to Infrastructure, Government Efficiency, and Economic Dynamism respectively.

**Table 11.** Accommodation Capacity

Variable 1	Variable 2	Pearson's R	P-Value
AC 3	LES 1	0.832	0.000
AC 3	CHS 2	0.825	0.000

Accommodation Capacity (AC3) had direct and significant association with Local Economic Size (LES1) under Economic Dynamism and Capacity of Health Services (CHS2) under Government Efficiency.

**Table 12.** Capacity of Health Services

Variable 1	Variable 2	Pearson's R	P-Value
CHS 2	AC 3	0.825	0.000
CHS 2	H 3	0.790	0.000

Capacity for Health Services (CHS2) had positive and strong association with Accommodation Capacity (AC3) and Health facilities (H3).

## V. CONCLUSION

Based on the results of the statistical analysis, a number of CMCI variables were found to be critically important. Those correlated within the same pillar of Economic Dynamism were Productivity, Increase in Employment, and Local Economy Structure. Those related within Infrastructure were Transportation Vehicles, Education facilities, Health facilities, and Accommodation Capacity. Those associated across Economic Dynamism and Infrastructure were Local Economy Size, Transportation Vehicles, Accommodation Capacity, and Health facilities. Those correlated across Government Efficiency and Infrastructure were Capacity of Health Services, Accommodation Capacity, and Health facilities. The variables which were correlated with various other indicators were Transportation Vehicles, Productivity, Local Economy Size, Health facilities, Accommodation Capacity and Capacity of Health Services.

There was no positive or strong relationship between the variables under Government Efficiency. Similarly, there was no positive or strong correlation between indicators under Resiliency. None of the 10 variables under Resiliency had any strong or positive correlation across the other 30 indicators in the 3 CMCI Pillars. It was an end in itself, which means that once the target was accomplished, the benefits did not trickle down.

### Originality, Value and Implications of the Study

The new findings of this study are vital to the local government units of the Bicol Region so that they can take a more efficient and strategic approach to governance. They can pay attention on targets that reinforce each other, indicators that may create cascading effects and benefits to other areas of development, and criterion that may influence various other indicators. If variables of the same CMCI Pillar showed strong correlation and the government intends to improve the pillar under consideration, then it can focus on these critical

variables and expect that one will reinforce the other. If one indicator of one pillar has strong association with an indicator in another pillar, the government can pay attention to these targets because it may lead to higher competitiveness score in the both pillars. Additionally, the government can prioritize the targets that have strong relationship with various indicators because these give rise to other important benefits to the community. More resources can be allocated, more projects developed and new policies formulated that are directed toward these targets. If there are existing policies and programs pertinent to those indicators, these policies and programs can be revisited, improved and sustained.

In order to accomplish the targets on Resiliency, the government unit can specially allocate resources on each criteria but cannot expect that the results would cascade to other indicators and categories.

On Productivity, the local governments can set up mechanisms to encourage new businesses into the city or municipality, to motivate existing businesses in increasing gross sales and number of employees, and in ensuring a profitable ratio of sales to worker. On Local Economy Size, it is recommended that governments can develop programs that stimulate local production such as incentivizing top-performing local firms, creating a business-friendly environment, and promoting the locality as a good choice for new investors. On Transportation Vehicles, the governments can prioritize road construction and traffic management so that more buses, vans, jeeps, tricycles and taxis will include the locality among their route. On Capacity of Health Services and Health facilities, the governments can build more public hospitals, clinics, laboratories and diagnostic center, facilities with enough beds. They can allocate more budget for ambulance cars and important health care equipment. They can likewise encourage private health institutions to come in. These priorities can be coupled with motivating doctors, nurses, midwives

and laboratory technicians to work in the community. On Education facilities, the governments can ensure there are enough public secondary and tertiary schools, as well as technical and vocational training centers, with enough classrooms, visa-vis the school-aged population.

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