

Measurement model for competitiveness index among the municipalities of Compostela Valley, Mindanao, Philippines

Illeyt R. Silva¹ & Adrian Tamayo²

¹College of Business Administration, Assumption College of Nabunturan, Nabunturan, Compostela Valley Province, Philippines.

Email: sportscoor_ACN@yahoo.com

²Research and Publication Center, University of Mindanao, Davao City Philippines

ABSTRACT

This paper is intended to formulate a measurement model for competitiveness index and obtain the relative strengths and weaknesses of the municipalities of Compostela Valley. This paper endeavors to gauge the competitiveness index of the municipalities of Compostela Valley and attain the competitiveness measure of the 11 municipalities when ranked according to Economic Efficiency, Government Efficiency, and Infrastructure Development. This employed the weight aggregation of the competitiveness measures among the municipalities of Compostela Valley and the weighted average value of the three indicators measured where Economic efficiency had a weight of 50%, Government efficiency 30%, and Infrastructure development 20%. It was found that Nabunturan is the most consistent municipality in the areas of Economic Efficiency, Infrastructure development, and Government Efficiency, followed by Monkayo. Maco was consistent also in the area of government Efficiency and consistent low scores obtained by Mabini, Mawab, Montevista and New Bataan. The study therefore presents unbiased information among local governments to enhance and address those factors measured for them to be fully aware and be responsive on the challenges and for their local governments to formulate policies, thus making them potential investment destinations.

Keywords: *Competitiveness, Economic, Compostela Valley, Philippines.*

INTRODUCTION

Competitiveness as a broad concept has gained tremendous attention among economic scholars and among countries as a means of understanding capabilities and to help focus in dealing with the country's prosperity and productivity (Porter, Delgado, and Ketels, 2013). Porter (2008) added that prosperity is determined by its productivity which stimulates high standard of living characterized by high wages and attractive return of capital, leading to a more profound understanding to what competitiveness is all about. It is all about productivity.

A relevant and consistent problem faced by policymakers is the unavailable information about local competitiveness which serves as their basis in crafting a well - designed program and policy for the regions, provinces, cities and municipalities of a nation. The Global Competitiveness Index (2014) highlighted the need for additional literature that measures competitiveness and argued that theories and empirical evidence matter for competitiveness and as offered by Porter et al., (2013) about policy choices at the subnational levels affect important aspects of the business environment such as local transportation infrastructure, this literature was supported by Martin (2013) when he lectured about consistency and profitability, which are significant factors to be considered in competitiveness manifested by the ability of the firm, acknowledged further by Dijkstra, Annoni, and Kozovska (2012) when they imposed that the idea of being less competitive is caused by a region's inability to adapt new technologies.

The concept of competitiveness has itself been recognized even in the sub regional levels. Porter et al., (2013) shared an anecdote about countries conducting competitiveness study such as the US where a great deal of work at the state or district levels intended to portray an impression of formulating new ways of thinking and assimilating balance in crafting policy. In an earlier account,

Porter, Ketels, and Delgado, (2007) address the geographic levels in a nation which influences the quality of the business environment. Hence, regional competitiveness has become an integral counterpart in the determination of sub level capabilities such as regional councils to spearhead regions and Viasone (2008), detailed that in the international political platform competitiveness is one of the subjects with a growing influence of the global competitiveness in decades, thus, becoming an integral area of international debate.

The National Competitiveness Council of the Philippines (NCC, 2013) has established a competitiveness model ranking municipalities and cities with programs intended to improve competitiveness and provide information to serve as guide in the development of policies to draw investment; hence, create jobs. Furthermore, Guillermo M. Luz of the NCC Private Sector committee stresses that the competitiveness report presents a collection of hard based data itemizing strengths and weaknesses among local governments which will then be the basis for improving and submitting policies leading to suitable management among them and that these local governments, such as the municipalities of Compostela Valley can now benchmark performance among cities and municipalities within in the country and its counterpart in the ASEAN.

On March 7, 1998 a new province was established by virtue of the Republic Act No. 8470 signed by the then President His Excellency Fidel V. Ramos on January 30, 1997. It was on March 6, 1998 through a plebiscite where an overwhelming yes votes created the 78th province of the Philippines, Compostela Valley. The province has 11 municipalities with a mixture of ethnicity and resources. The province was later given the moniker “the Gold Capital of Davao Region” and in its maiden existence, Compostela Valley became a first class province of the Davao Region and one of the six first class provinces in Mindanao Island. Of the 11 municipalities eight (8) out of the eleven (11) municipalities are classified as first class municipalities, one (1) is second class and two (2) are third class.

his study aims to formulate a measurement model for relative competitiveness index among the municipalities of Compostela Valley and obtain the relative strength and weaknesses among these municipalities.

METHOD

Research design

Snieska and Bruneckie (2009) particularly described the mathematical method to obtain the competitive measures of the Municipalities of Compostela Valley. Tamayo et al., (2013) further stressed that a good approach to this is to use a metric that would quantify what is not directly measurable and the level of competitiveness can be extracted through a large set of indicators that are quantifiable, mathematically treatable, can be weighted and aggregated (Dijkstra et al., 2012).

The Weight aggregation of the competitiveness measures among the municipalities of Compostela Valley was obtained by employing the weighted average value of the three indicators such as; Economic efficiency, government Efficiency, and Infrastructure development with weights of 50%, 30%, and 20% respectively.

The distributions of weights for each factor in every indicator followed the construct of Danciu (2012). The weights for each of the factor were as follows; Economic Efficiency had five factors measured with weights as: business registration (40%), employment rate (15%), financial institutions (15%), growth rate (10%), and productivity (20%). Three factors were used in weighing Government Efficiency; transparency and accountability (40%) which included the sub - factors; transparency scores (40%), economic governance (40%), number of awards received (10%), public finance (30%) which was measured by the real – property and business taxes collected, business responsiveness (30%) with four sub – factors measured through the following weights; investment and promotion (40%), municipal disaster and risk reduction management plan (10%), secondary school capacity

(10%), health manpower (40%) and third indicator, Infrastructure Development with five factors measured with the given weights; road networks (20%), investment in infrastructure (40%), number of vehicles (15%), and basic utilities (25%).

Population and sample

For purposes of comparability and validity of the study, the sample size constituted all the 11 municipalities under the provincial government of Compostela Valley. The researcher employed the entire population of the province as this will provide the study a more accurate detailing of performance, competitiveness and potential market conditions so as not to create imbalances (Martin, 2013).

Data sources and research instrument

Competitiveness measure is now widely accepted as being of central importance to the success of economic development (Kayar and Kozak, 2008) and so as the regions. This paper examined the secondary data available at the Provincial office of Compostela Valley, the Provincial Planning and Development Office and the Local Government Units' subject to this study through the Municipal Planning and Development Office, Business Permit and Licensing Office, the Provincial and Municipal Health Office.

The subject of the study is focused on the measurement model for competitiveness index among the municipalities of Compostela Valley and obtained the relative strength and weaknesses among these municipalities. For purposes of baseline and comparability, the 2013 data was used.

Data collection

Data were gathered by asking permission to conduct the study; the researcher asked the approval and recommendation to conduct the study from the office of the Governor and at the Mayor's Office and Office heads of the 11 municipalities of Compostela Valley.

Statistical tool

The researcher employed the mathematical weights in the computation method of the three indicators (Tamayo et al., 2013) as follows;

Economic efficiency

$$CI_{econ_efficiency} = \left(\sum_{i=1}^n score_i \frac{1}{2} \right) X 50$$

Government Efficiency

$$CI_{govt_efficiency} = \left(\sum_{i=1}^n score_1 \frac{1}{4} \right) X 30\%$$

Infrastructure

$$CI_{inf_devt} = \left(\sum_{i=1}^n k \frac{1}{5} \right) X 20\%$$

The Competitiveness index (CI) was measured as;

$$CI = \sum (ED * 0.5 + GE * 0.3 + ID * 0.2)$$

EE = economic efficiency;

GE = government efficiency

ID = infrastructure development

The distribution of weights followed the discriminated distribution for factors in the global competitiveness index (Tamayo et al., 2013). Using the arithmetic index on the weighted averages,

the following competitiveness measure was obtained. The index measured range from 0 to 100 with 100 as most competitive and 0 as least competitive.

RESULTS

Using arithmetic index on the weighted average, the following competitiveness measures were obtained. Index measures range from 0 to 100 with 100 as most competitive and 0 as least competitive. Relative competitiveness ranking municipalities of the Province of Compostela Valley were thus derived from the competitive scores.

Economic efficiency

Table 1 shows the competitiveness rank of the 11 Municipalities of the Province of Compostela Valley when gauged in terms of Economic Efficiency. Municipality of Nabunturan was first with an efficiency score of 75.42 followed by the Municipality of Monkayo (68.54) and Municipality of Maragusan (66.80). While the Municipalities of Montevista, Mabini, and Mawab were found to be the least economically efficient LGU's in the Province with index scores of 21.79, 28.48, and 29.11 respectively.

Table 1 *Competitiveness rank of Municipalities according to Economic Efficiency*

Municipality	Score	Ranking
Nabunturan	75.42	1
Monkayo	68.54	2
Maragusan	66.80	3
Pantukan	58.92	4
Maco	49.87	5
Laak	47.00	6
New Bataan	37.19	7
Compostela	36.19	8
Mawab	29.11	9
Mabini	28.48	10
Montevista	21.79	11

The municipalities of Nabunturan, Monkayo and Maragusan showed strength in capital outlays manifested by higher business registration, and higher employment rate. Of the three highly competitive municipalities, Nabunturan have the highest number of financial institutions. Monkayo (ranked 2nd) and Laak (ranked 6) and Pantukan (ranked 4) had greater productivity which means that the three municipalities had higher Internal Revenue Allotment over the other. But both municipalities of Monkayo and Maragusan were least efficient in the number of financial institutions, and growth rate alongside with Laak, Maco, Compostela, and New Bataan.

Mawab, Mabini, and Montevista's low index scores can be attributed to their geographical locations. As both Mawab and Montevista share and compete the same resources with the municipalities of Nabunturan (ranked 1), and Monkayo (ranked 2) while Mabini is in the same position as it shares and competes with the municipalities of Maco (ranked 5), Pantukan (ranked 4) and Maragusan (ranked 3).

But the bottom three areas showed relative strengths in Employment Rate with Mabini ranked first with 62%. Factors that need further improvement among the least competitive areas were in Business Registration, Financial Institution, and Productivity.

Moreover, the relative competitiveness of the eleven municipalities of Compostela Valley viewed that Laak, Compostela, and Maco can be clustered together and backed each other to further improve their performances and that Mabini, Mawab, and Montevista should learn from these municipalities. New Bataan can benchmark practices from Monkayo and Compostela. While, Nabunturan, Monkayo, and Maragusan could extend support to other municipalities by sharing methodologies on promoting investment and in increasing productivity, thereby making the 11 municipalities and the province as a whole potential investment hubs in the future.

Government efficiency

Table 2 shows the competitiveness scores of the municipalities measured in terms of government efficiency. It showed that the municipality of Maco ranked first with a score of 84, followed by the municipality of Nabunturan (81) and Maragusan (71). The municipalities measured having low scores in government efficiency were New Bataan, Montevista, and Mabini with scores of 56, 48, and 43 respectively.

Maco manifested its strengths on transparency and accountability, Public finance which was accounted on the total local tax collected, and business responsiveness. Nabunturan and Maragusan showing advantages on the Number of Awards received, in Investment and Promotion, and of having a clear disaster responsiveness plan. Though Nabunturan has an edged in tax collection, Maragusan was more efficient in Health Manpower and Transparency score.

Table 2 Competitiveness rank of Municipalities when gauge according to government Efficiency

Municipality	Score	Rank
Maco	84	1
Nabunturan	81	2
Maragusan	71	3
Laak	62	4
Monkayo	60	5
Pantukan	59	6
Compostela	58	7
Mawab	56	8
New Bataan	56	9
Montevista	48	10
Mabini	43	11

The poor scores reported from New Bataan, Montevista, Mawab and Mabini were attributed to the low local tax collection, secondary school capacity and health manpower. But Montevista and Mabini showed good performances in Transparency Scores, relatively competitive in Economic Governance, and disaster preparedness. While Mawab had strengths in Investment and Promotion and municipal disaster responsiveness plans.

Government Efficiency's emphasis is to serve as guide among those municipalities in terms of formulating policies and promote a twinning program and share resources and expertise among them in improving government services. Furthermore, New Bataan, Mawab, and Montevista have competitive relationships with Pantukan and Monkayo. This means that their government efficiency measures were comparable and hence, to improve performance, they could reinforce each other. Compostela, Monkayo, New Bataan and Laak may be agglomerated together to improve government efficiency among them.

Infrastructure development

Table 3 presents the competitiveness scores of the 11 municipalities when measured according to infrastructure development. Nabunturan and Monkayo ranked first with an index score of 80, followed by Compostela and Laak with scores of 73, and 72 respectively. Monkayo and Nabunturan showed strengths in Number of vehicles servicing the area, road networks, and investment in infrastructure. While Compostela was efficient on the availability of water and electricity (though unanimously delivered also by the rest of the municipalities) was good in the barangay road networks and more focused on investing in the infrastructure aspect and relatively high numbers of vehicles servicing the area.

Mabini, Mawab, and Montevista again were listed as the bottom three local governments with index scores of 48, 47, and 42. Though their index scores were low compared to New Bataan (ranked 4), Pantukan (ranked 5), Maco (ranked 6) and Maragusan (ranked 7) but these were not manifestations of being poor in performance. In fact, Mabini had strengths in the availability of basic utilities, relatively efficient in investment in infrastructure and Number of vehicles but fell short in the road networks, while Mawab and Montevista may have experienced lower investment in infrastructure but were showing strengths in the barangay Road networks and high number of vehicles servicing their respective municipalities.

Table 3 Competitiveness rank of Municipalities when measured according to infrastructure Development

Infrastructure Development Score		
Municipality	Score	Rank
Monkayo	80	1
Nabunturan	80	1
Compostela	73	2
Laak	72	3
New Bataan	69	4
Pantukan	68	5
Maco	65	6
Maragusan	62	7
Mabini	48	8
Montevista	47	9
Mawab	42	10

The ability of one economic entity depends primarily on its effectiveness in delivering the basic fundamental of the economy, Infrastructure. Structured information among the areas under study is provided, as this will be used among local government units in comparing their strengths and weaknesses in factors cognizant to measuring infrastructure development.

A cluster evaluation of infrastructure development, Compostela, Laak, Nabunturan and New Bataan, Maragusan, Pantukan, Monkayo were readily comparable. They can share information to further

enhance their competitiveness. Furthermore, Mawab, Mabini, and Montevista could share notes in order to reinforce each other's competitiveness ability.

Provincial competitive index

Table 4 shows the over – all competitiveness of the 11 municipalities when ranked according to Economic Efficiency (50%), Government Efficiency (30%), and Infrastructure development (20%).

Nabunturan tops in the over – all index score of 79, followed by Monkayo (69), Maragusan (67), Maco (65), Pantukan (62), Laak (59), Compostela (54), New Bataan (52), Mawab (41, Mabini (39) and Montevista (37).

Further, it presents an agglomerated view among the local government units based on the indicators employed as input of the study. Moreover, an abstract of the municipalities' weighted scores obtained can be viewed which provides information about the 11 municipalities' strengths and weaknesses. In addition, the information derived will then be used as basis for comparability among the municipalities and thus, hinge cooperation.

Table 4 Competitiveness index of the Municipalities of Compostela Valley

Mun.	EES (50%)	R	GES (30%)	R	IDS (20%)	R	W M	OR
Nabunturan	75.42	1	81	2	80	1	79	1
Monkayo	68.54	2	60	5	80	1	69	2
Maragusan	66.80	3	71	3	62	7	67	3
Maco	49.87	5	84	1	65	6	65	4
Pantukan	58.92	4	59	6	68	5	62	5
Laak	47.00	6	62	4	72	3	59	6
Compostela	36.19	8	58	7	73	2	54	7
New Bataan	37.19	7	56	9	69	4	52	8
Mawab	29.11	9	56	8	42	10	39	9
Mabini	28.48	10	43	11	48	8	39	10
Montevista	21.79	11	48	10	47	9	37	11

Legend: Mun – Municipality; EES – Economic Efficiency Score; R – Rank; GES – Govt. Efficiency Score; Infrastructure Devt. Score; WM – weighted Mean; OR – Overall rank.

DISCUSSION

This study intends to formulate a measurement model for competitiveness index among the municipalities of Compostela Valley. It also aimed to obtain the relative strength and weaknesses of the respondents. Specifically, this study endeavored to answer the competitiveness index of the municipalities of Compostela Valley when ranked according to Economic Efficiency, Government Efficiency, and Infrastructure Development.

This study employed the arithmetic weighted average value based on distribution of weights among the three indicators, where; Economic Efficiency had a weight of 50%, Government Efficiency is 30%, and Infrastructure Development is 20%.

Economic efficiency

The Municipality of Nabunturan was found to be the best Local government unit in the province in terms of economic efficiency given its high rate of business registration and financial institution which converted into high employment rate, high rate of capital formation and strong business community. Monkayo peaked with its high rate of business registration and productivity. Of the top 3 LGU's, the Maragusan came out as an interesting area, as this municipality is almost a self – sustaining LGU due to its location and road conditions; still, it managed to have a high rate in business registration and employment which resulted into higher inflows of capital.

The ability of the top three municipalities to attract an inflow of resources is primarily due to their capability to adjust and understand the level of competition they are up to, Balzaravecic and Pilinkiene (2012) stated that being competitive must describe economic strength with regards to its competitor and their governments' capability to provide appropriate measures and mechanisms. This was supported by the idea of Porter et al., (2008) that the instrument of impact accord with the policy developments that governs general environments affecting efficiency, hence, competitiveness. From the information of Huggins et al., (2013) that competitiveness depends on the deliberate political decisions and that business environments provide firms with specific set of productive resources.

The geopolitical conditions of Mawab and Montevista which created an effect on the distribution of resources in the province may have been influenced by sharing and competition with the top two municipalities of Nabunturan and Monkayo. Mabini shares in the same position with Mawab and Montevista as the former is located in the middle Maco (ranked 5) and Pantukan (ranked 4). It was emphasized by Viasone (2008) that nations, regions, and cities which are the main spatial elements compete to entice business ventures and that knowledge should be circulated resulting in agglomerations or clusters in achieving varied yield extending from efficiency and cost studies (Lall, 2001), Martin and Sunley (2006) discussed regrading regions with organizations and systems which may not be able to move to marginal expansion.

Government efficiency

Upon consideration of the data gathered and presented, several discussions came up based on this indicator. The research data suggests that the municipalities of Maco, Nabunturan, and Maragusan obtained high index scores as these can be attributed to their economic performances and subsequent growth (Huggins et al., 2013). However, the low scores of New Bataan, Montevista, and Mabini may not be translated as an indication of low performances, but its inability to adapt new technologies (Dijkstra et al., 2012) may have hindered their local governments to perform better.

The efficiency of government as regarded by Kovacic (2005) was to create an environment that provides a great deal of work among locations, specific of providing the larger society with the important determinant of systematic competitiveness. This somehow is reflected by the capability of the municipalities to comply with requirements; hence, getting awards and citation from the national government, high scores in transparency and economic governance thus, affirming Huggins et al., (2013) in the concepts about the factors necessary to support imminent progress and improvement route.

Infrastructure development

Another important indicator in the formulation of the Competitiveness Index model is Infrastructure development, as it involved basic inputs to production such as water, energy, transportation, communication and road networks. Also, the infrastructure indicator measures the production sustainability of a certain area or local government fortified by the statements of Antonelli et al., (2012) regarding economic performance and subsequent character that summarizes the main economic activities such as production, distribution and use of knowledge play within and across the economy. Moreover, Kovacic (2005) clearly emphasized that countries faced different paths to improve competitiveness and Johansen and Sabadie (2010) presented their perspective by defining competitiveness that should include the Infrastructure. Infrastructure development is measured

relative to investment in infrastructure, number of vehicles servicing the area, availability of electricity and water, road networks as provided to national, provincial, municipal and barangay roads.

Competitiveness is seen as a general welfare that includes trade issues (Kovacic, 2005) and that infrastructure priority is a major factor towards competitiveness. Furthermore, Viasone (2008) reiterated that the enduring capability of a region comes then from its capability to redevelop, to captivate external resources; hence, the capability of the municipalities of Compostela Valley depends on how accessible the location is, how abundant the basic social and economic resources are and how effective are their road networks and transportation capability.

The provincial competitiveness index

Discussions defining the national competitiveness should be critically assessed as to its measurement (Dijkstra et al., 2012) pointed immensely to the quality of public institutions, as general conditions that create opportunities for higher productivity (World Economic Forum, 2009). The provincial competitiveness index suggests that the competitiveness of the municipalities reflect that how effective the provincial government and the 11 municipalities are disposing opportunities efficiently.

The Provincial Competitiveness Index measure showed the municipality of Nabunturan as the highly competitive local government of the province, and its index score is far from the other municipalities. This is expected since Nabunturan qualified not just as a first class municipality but of being the province's economic and political capital, characterized by its percentages in business registrations, employment rate and number of financial institutions. The comparable competitiveness of Nabunturan can be compared to that of Monkayo, Maragusan, and Pantukan whose competitiveness scores are close. Maco and Laak have close competitive scores.

Though Laak, Compostela, and New Bataan, ranked 6, 7, and 8 respectively falls in the middle of the pact, this does not manifest that they are out as compared to the top five LGUs. In fact, their employment rates were high which signifies how effective their municipalities are. High efficiency in economic governance, investment and promotion can sustain them to become Compostela Valley's rising LGU in terms of creating an optimal investment climate. Bristow (2010) categorically presented the notion about competitiveness that refers to the inclination of skills to compete, to win and retain position in the market. Hence, understanding the political and economic environment of the municipalities to become better must be consistently shown by them to enhance the indicators that measure competitiveness.

Mawab, Mabini, and Montevista's low scores may be attributed to poor performance in economic efficiency, government efficiency, and infrastructure development, but not an indication of being non-competitive. In fact, high rates in employment, transportation capability, effective delivery of basic services, and a well-established Municipal Disaster Risk Management plan can be their major tool in enticing investment. Relatively high percentages in economic governance and awards of excellence received manifest that they are in the optimal position. But then, for them to be fully competitive they need to consider their weak areas and benchmark with their neighboring municipalities whose competitive scores are high such as Nabunturan, Monkayo, and Maragusan. This somehow is a better gauge among these municipalities to cluster based on creativity and enhancement of knowledge (Porter, 2008; Huggins et al., 2013)

CONCLUSION

The competitiveness of the province of Compostela Valley in terms of economic efficiency needs an in-depth assessment, specifically on the areas of business registration and financial institutions which are considered to be the province's "Achilles heel". The data provided is critical as it explains the demand of confidence among investors to pour in their investment to these mentioned municipalities

and create an optimal environment. Moreover, economic development resides on the efficiency and effectiveness of a municipal or provincial entity's plan and policy to infrastructure.

RECOMMENDATIONS

A friendly economic environment encourages confidence for investment hence, information to areas considered to be weakness among the municipalities of Pantukan, Maco, Mawab, New Bataan, Montevista, Compostela, Mabini, and Laak is provided which is the number of business registration and financial institutions. This in a way is a good venue of crafting a more sound business policy by revisiting their respective business and promotion programs, objectively respond to the national and global standards of business application, eradicate or eliminate red tape and consistent education drive among their constituents to be their own spenders and savers akin to that of the "Pilipino first" policy. Moreover, these municipalities and at the same time those considered to be the most competitive may have twin programs among them, strengthened their partnership and share of notes, and partner with the agencies of the national government. Lastly, the 11 municipalities are encouraged to bind their priorities through appropriate and effective marketing strategies.

The effect of efficient economic practice reflects on the effectiveness of governance. Hence, understanding the areas in government efficiency where the Province shows poor performances must be done especially in the secondary school capacity where the municipalities of Mawab, Compostela, Mabini, Monkayo, and Maragusan got the lowest score of 14. This means that these municipalities must formulate and revisit at the same their policies in education, objectively recognize this weakness and craft a fundamentally sound educational system through continuous partnership with the Department of Education.

In health manpower, though the low scores derived may be due to the inconsistent information gathered by the researcher, this one area of governance should not be ignored. Foundation of human resources is a requirement to development, hence, to effectively respond to this the 11 municipalities must monitor the plight and number of health workers; doctors, dentists, nurses, midwives, and barangay health workers. The researcher recommends to re assess the compensation package of these personnel who act as frontline in the delivery of health and wellness. In the area of public finance, where local taxation is based it is recommended that each LGU's considers the essence of local finance as this is their very lifeblood.

A fair and just imposition of these burdens must be clearly implemented, consistent study on preference and local taxation schemes must be deliberated by engaging toward benchmarking with neighboring municipalities and cities which are leaders and models of public finance. In effect, the municipalities of Pantukan, Mawab, New Bataan, Compostela, Mabini, Monkayo, Laak, and Maragusan are asked to seriously consider the researcher's viewpoint.

For infrastructure development, it is recommended that the 11 municipalities must be consistent in their priority to investment towards infrastructure, continuity in the delivery of the basic services and in the transportation sector, this can be sustained if the municipalities are eager to pour on more money in the road networks by widening and continuously developing their access to transportation that connects the market of raw materials to the market of goods and services.

To end, competitiveness study is time - bounded. The National Competitiveness Council of the Philippines is doing the Cities and Municipalities Competitiveness Report every year but since their scope is only limited to some of the local government units in the country it is therefore recommended that the provincial government of Compostela Valley must have their own version of a report in competitiveness among its municipalities. Thus, this study should be undertaken regularly (on a yearly basis).

REFERENCES

Antonelli, C., Patrucco, P.P., & Quatraro, F. (2012). Productivity Growth and Pecuniary Knowledge Externalities: An Empirical Analysis of Agglomeration Economies in European Regions. Retrieved on November 5, 2014 from <http://onlinelibrary.wiley.com/doi/10.1111/j.1944-8287.2010.01104.x/abstract>.

Balkyte, A. & Tvaronaviciene, M. (2010). Perception of competitiveness in the context of sustainable competitiveness. Retrieved on December 8, 2014 from <http://www.tandfonline.com/doi/abs/10.3846/jbem.2010.17?journalCode=tbem20#.VuZZ60CHmw>.

Balzaraviciene, S. & Pilinkiene, V. (2012). Comparison and Review of Competitiveness Indexes: Towards the EU Policy. Retrieved on August 13, 2014 from <http://www.ecoman.ktu.lt/index.php/Ekv/article/view/2257/1739>.

Bristow, G. (2010). Resilient regions: Re – “place”ing regional competitiveness. *Cambridge Journal of Regions, Economy and Society*, 3(1), 153 – 167. [Dx.doi.org/10.1093/cjres/rsp030](https://doi.org/10.1093/cjres/rsp030). Retrieved on December 8, 2014 from <http://cjres.oxfordjournals.org/content/3/1/153.abstract>.

Celini, R. & Soci, A. (2001). Pop Competitiveness, Banca Nazionale del Lavoro. Retrieved on December 8, 2014 from <https://www.highbeam.com/doc/1P3-126419371.html>.

Competitiveness Advisory Group (1995). Retrieved on December 8, 2014 from http://europa.eu/rapid/press-release_IP-95-141_en.htm?locale=en.

Danciu, A.R. (2012). A study on the factors of regional competitiveness. Retrieved on September 23, 2014 from http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/3cr/competitiveness.pdf.

Dijkstra, L., Annoni, P., & Kozovska, K. (2012). A new European regional competitiveness index: theory, methods, and findings. Retrieved on August 13, 2014 from http://ec.europa.eu/enterprise/policies/industrial-competitiveness/competitiveness-analysis/seminars/files/bbs_annoni_dijkstra_paper_en.pdf.

Huggins, R., & Izushi, H. (2007). *Competing for knowledge: creating, connecting and growing*. Retrieved on August 13, 2014 from <http://www.amazon.com/Competing-Knowledge-Creating-Connecting-Growing/dp/0415569354>

Huggins, R., & Thompson, P., (2010). UK Competitiveness Index 2010. Retrieved on August 13, 2014 from <http://www.cforic.org/pages/ukci2010.php>.

Huggins, R., Izushi, H., & Thompson, P., (2013). Regional competitiveness: theories and methodologies for empirical analysis. Retrieved on July 6, 2014 from <http://www.centrum.pucp.edu.pe/pdf/revistas/JCC-vol6-issue2-86.pdf>.

Johansen, J., & Sabadie, J.A., (2010). How economic competitiveness indexes view human capital. Retrieved on July 6, 2014 from www.etf.europa.eu/EVENTSMGMT.../Indexes%20Jens%20Johansen.

Kayar, C. H., & Kozak, N., (2008). Measuring destination competitiveness: An application of the travel and tourism competitiveness index. Retrieved on July 6, 2014 from <http://www.tandfonline.com/doi/abs/10.1080/19368621003591319>.

Kitson, M. (2004). Regional Competitiveness: An elusive yet key concept?. Retrieved on July 6, 2014 from <https://michaelkitson.files.wordpress.com/2013/02/kitson-marrtin-tyler-rs-2004.pdf>.

Kotios, A., & Tselios, V., (2002). Globalization, new economy and regional development. University of Thessaly. Discussion paper series, 8(4), 67 – 86. Retrieved on September 8, 2014 from [www.ier.si/files/Working%20paperseries-67\(86\).pdf](http://www.ier.si/files/Working%20paperseries-67(86).pdf).

Kovacic, A., (2005). Competitiveness as a source of development. Working paper no. 28. Retrieved on September 8, 2014 from www.ier.si/files/Working%20paper-28.pdf

Lall, S., (2001). Competitiveness Indices and developing countries: an economic evaluation of the global competitiveness report. Retrieved on September 8, 2014 from <http://ideas.repec.org/a/eee/wdevel/v29y2001i9p1501-1525.html>

Lall, S., (2010). Comparing national competitive performance: an economic analysis of the world economic forum's competitiveness index. Working paper no. 61. Retrieved on September 15, 2014 from www.qeh.ox.ac.uk/pdf/qehwp/qehwps61.pdf

MacArthur, J., & Sachs, J. (2009). The Growth Competitiveness Index: Measuring Technological Advancement and the Stages of Development. Center for International Development, Harvard University. Retrieved on October 8, 2014 from http://earth.columbia.edu/sitefiles/file/Sachs%20Writing/2002/WorldEconomicForum_2001-2002_GlobalCompetitivenessReport2001-2002_GrowthCompetitivenessIndex.pdf.

Malecki, E.J., (2007). Cities and regions competing in the global economy. Knowledge and local development policies. Environment and planning C: Government and policy, 25(5), 638 – 654. [Dx.doi.org/10.1068/co645](https://doi.org/10.1068/co645). Retrieved on December 22, 2014 from <http://epc.sagepub.com/content/25/5/638.abstract?id=c0645>.

Martin, R., (2012). A study on the factors of regional competitiveness. Retrieved on January 8, 2015 from http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/3cr/competitiveness.pdf.

Martin, R. (2013). Thinking about regional competitiveness: Critical issues. Retrieved on January 15, 2015 from <http://irep.ntu.ac.uk/519/>.

Martin, R., & Sunley, P. (2006). Path dependence and regional economic evolution. Retrieved on January 15, 2015 from <http://joeg.oxfordjournals.org/content/6/4/395.short?rss=1&ssource=mfc>.

Porter, M.E. (2008). Locations, Clusters, and company strategy. Retrieved on January 15, 2015 from <http://www.hbs.edu/faculty/Pages/item.aspx?num=5432>.

Porter, M., & Stern, C. (1999). The new challenge to America's prosperity: findings from the innovation index. Retrieved on December 10, 2014 from https://www.google.com.ph/?gfe_rd=cr&ei=mk7mVuygIYqk8gXblYbgAg&gws_rd=ssl#q=the+new+challenge+to+america%E2%80%99s+prosperity+findings+from+the+innovation+index.

Porter, M., Delgado, M., & Ketels, C. (2013). Measuring Competitiveness at the National Level. Retrieved on December 4, 2014 from <https://www.google.com/search?q=g&ie=utf-8&oe=utf-8#q=measuring+competitiveness+at+the+national+level>.

Porter, M., Ketels, C., & Delgado, M., (2007). The microeconomic foundations of prosperity: findings from the business competitiveness index. Retrieved on July 8, 2014 from http://www.weforum.org/pdf/Global_Competitiveness_Reports/Reports/gcr_2007/Chapter2.pdf.

Porter, M., Delgado, M., & Ketels, C., Stern, S. (2008). Moving to a new global competitiveness index. Retrieved on September 8, 2014 from <http://www.weforum.org/pdf/GCR08/Chapter%201.2.pdf>.

Romer, P.M. (2007). Economic Growth. Retrieved on September 8, 2014 from <http://paulromer.net/portfolio/economic-growth/>.

Sala – I – Martin, X., et. al., (2009). The Global Competitiveness Index: Prioritizing the Economic Policy Agenda. Retrieved on September 10, 2014 from https://www.google.com.ph/?gfe_rd=cr&ei=hEfmVqCIE4aS2ASb-pagCA&gws_rd=ssl#q=the+global+competitiveness+index+prioritizing+the+economic+policy+agenda

Silvia, M., (2006). Competitiveness: From Microeconomic Foundations to National Determinants. Retrieved on September 10, 2014 from <https://ideas.repec.org/a/blg/journal/y2006v1p29-35.html>.

Snieska, V. & Bruneckiene, J. (2009). Measurement of Lithuanian Regions Competitiveness Index. Retrieved on January 15, 2014 from <http://www.ecoman.ktu.lt/index.php/Ekv/article/view/9460>

Tamayo, A., Arquiza, M.L., & Alabado, R. (2013). Local Economic and development competitiveness measures of Davao Region, The University of Mindanao, Davao City.

The Global Competitiveness Index (2014). The Global Competitiveness Report. Retrieved on February 8, 2015 from <http://www.weforum.org/reports/global-competitiveness-report-2014-2015>.

The Institute for Management Development (2009). The IMD World Competitiveness Yearbook. Retrieved on September 8, 2014 from <https://www.efmd.org/efmd-deans-across-frontiers/view/846-imd-world-competitiveness-yearbook-2015-results>.

The National Competitiveness Council of the Philippines (2013). Cities and Municipalities Competitiveness Index. Retrieved on September 8, 2014 from <http://www.competitive.org.ph/cmindex/>.

The World Economic Forum (2009). The Global Competitiveness Report. Retrieved on September 8, 2014 from <http://www.weforum.org/reports/global-competitiveness-report-2014-2015>.

Viasone, M. (2008). Regional competitive index as a tool to improve regional foresight: theory and evidence from two western – Europe regions. Retrieved on July 6, 2014 from www.gcbe.us/8th_GCBE/data/Milena%20%20Viassone.doc.