

Data Cleaning: Enhancing the integrity of the Cities and Municipalities Competitiveness Index (CMCI) database

Mary Gretchen F. Chaves, DBA
Associate Professor
University of the Philippines Cebu, School of Management

Johnny E. Snyder, Ph.D.
Professor of Computer Information Systems
Colorado Mesa University, Department of Business

Abstract

The Philippines' Cities and Municipalities Competitiveness Index (CMCI) annually reports the competitiveness ranks of the country's local government units. Respective cities and municipalities submit their data using a CMCI-prescribed data capture sheet. The provinces are likewise ranked in competitiveness based on the scores of the of municipalities and component cities under its administrative supervision. The Cebu province was ranked 27th in the 2019 CMCI report. During the same period of the 2019 CMCI evaluation, the Cebu province was reported (Commission on Audit) as the richest province in the Philippines, both in cash and real properties. This asymmetry motivated the researchers to investigate and hypothesize the presence of potential lapses in the CMCI data capture, data processing and/or a combination of both, which may have contributed to the subsequent disparities in computation results. This study's objective is to investigate the integrity of the data capture and contents of the CMCI database. The knowledge discovery in databases (KDD) framework undergird this study's investigation. In the KDD process, extracting and discovering useful knowledge from the data set requires that the data undergo the crucial step of data cleansing to prepare the data for ensuing data mining and interpretation. Data events analysis (data entry at source - provenance) and error cluster analysis (data cleaning algorithms) were the methods used to analyze the meta data of the CMCI Local Data Capture Sheet and to inspect the integrity of the CMCI dataset. The results show that the meta-data and the guidelines of data capture contain potential data entry error sources. The results of the data error analysis yield data imperfections including several "NDA" and "NA" entries, typographical errors, missing values, and potential outliers. This study concludes with the recommendations to improve CMCI data capture at the source so as to reduce potential data entry errors, as well as to include systematic data cleansing of the CMCI dataset to be able to extract meaningful and useful CMCI competitiveness scoring.

I. Introduction

The Philippines' Cities and Municipalities Competitiveness Index, an initiative of the National Competitiveness Council and the Department of Industry Competitive Bureau, annually reports the competitiveness scores and ranks of the country's local government units. The CMCI project, in its inception in 2012, was designed to generate competitiveness index scores which can "be used as a diagnostic tool by local government officials to assess the competitiveness of their city or municipality and identify areas for improvement and collaboration." The reported index data are envisioned to "provide insight for policy making, development planning and investment promotion." For the private sector, the data can serve as a "guide in deciding where to locate," where business prospectors may find value "depending on the specific needs of their business." For the academe and the civil society, the Index may be used as a "take-off point for further research."

A. Background of the Study

The 2017 end-of-term report by the Open Government Partnership (OGP) assessed the CMCI project as one of six commitments having a "major" contribution to opening government. The terminal report on the CMCI program punctuates with the recommendation that "the program continues its work, focusing on making the CMCI data user-friendly, actionable, and accessible to citizens" and that "closer attention should be paid to how LGUs act upon the CMCI findings to undertake reforms that improve their competitiveness, particularly focusing on LGUs that have not improved their scores." The report also states the stakeholders' concern on "whether the public is accessing the information and using it to engage government, particularly in improving local government's performance on competitiveness." (Aceron, J., 2018)

The Cebu province was ranked 27th in the 2019 CMCI report. During the same period of the 2019 CMCI evaluation, the Cebu province was reported by the Commission on Audit as the richest province in the Philippines, both in cash and real properties. This asymmetry motivated the researchers to investigate and hypothesize the presence of potential lapses in the CMCI data capture, data processing and/or a combination of both, which may have contributed to the subsequent disparities in the computation of Cebu province CMCI rank.

B. Statement of the Research Problem and Objectives

As indicated, the researchers hypothesize the presence of data errors in the CMCI dataset, and that these data errors may have come from the data entry at source. Data errors in the dataset, if not preprocessed, have an impact in the succeeding data analysis and transformation. The overarching purpose of this study is to uncover opportunities which will ensure that the CMCI is able to deliver the above-stated CMCI program objectives through reliable, preprocessed data

set. Specifically, this study investigates the reliability of the data capture at source as well as integrity of the contents of the CMCI database.

C. Significance of the Study

The usefulness of the CMCI database and the consequent competitiveness rankings which are generated and reported as the CMCI index values are only as good as the accuracy and completeness of the data inputs. Data processing literature emphasize the importance of raw data being successfully pre-processed (removal of errors) before these data are processed for data extraction and subsequent evaluation and interpretation. While data pre-processing is challenging, it has an impact on the overall analysis and on the data value chain (Bilalli, Abelló, Aluja-Banet, & Wrembel, 2019; Jony et al., 2015). It is thus expected that the CMCI process of data collection needs to put forth clear, concise directions for data capture, and that the individuals in charge of inputting the data must ensure accurate and complete data capture.

D. Scope and Limitations

This study involves data collected from the 1,516 Local Governmental Units (LGUs) in the Philippines who reported in 2018, and the construction of a “competitive index” ranking of the LGUs along the four CMCI pillars, namely, Pillar 1 – Economic Dynamism, Pillar 2 – Government Efficiency, Pillar 3 – Infrastructure, and Pillar 4 – Resiliency.

Analysis of the data quality, together with actionable recommendations to prepare the CMCI dataset for transformation, are the underlying themes for this research. The quality of the CMCI dataset was analyzed through data event analysis and error cluster analysis. The data event analysis involved the data provenance at the data capture, analyzing the instructions provided in the Local Data Capture Sheet (LDCS). The error cluster analysis focused on the types and extent of errors, tracking the inaccuracies and inconsistencies of the data in the CMCI dataset. Actionable directives for data capture and recommendations for data pre-processing comprise the summary and conclusion of this research.

II. Review of Related Literature

A. Competitiveness Reports

Among the major concerns of economic policy managers of many nations are their respective countries’ competitiveness performance. Not only do these competitiveness measures portray their nations’ economic efforts, but these indicators facilitate international trade and value creation networking as well. Whether global, regional or national in coverage, competitiveness reports are easily accessible. Vargha et al. (2019) describe how economic policymakers aim to

improve their respective competitiveness levels to measure up with the world's leading performers.

Vargha et al. (2019) further differentiate the main characteristics of two of the world's leading competitiveness rankings providers, namely, the World Economic Forum's Global Competitiveness Report (GCR) and the International Institute for Management Development's World Competitiveness Yearbook. These competitiveness reports cover the assessment of overall competitiveness of many countries. Alongside these reports is the World Bank's Cost of Doing Business which provides competitiveness ranking among nations but is tailored-fit on measuring the ease of doing business with respect to regulatory best practices among economies.

Various national economies, the Philippines included, have established their respective National Competitiveness Councils in their attempt to compete regionally and globally. In the Philippines, the National Competitiveness Council of the Philippines, in collaboration with the Competitiveness Bureau of the Department of Trade and Industry had initiated the Cities and Municipalities Competitiveness Index.

B. Cities and Municipalities Competitiveness Index

The Cities and Municipalities Competitiveness Index, developed by the National Competitiveness Council is an annual ranking of Philippine cities and municipalities. Each year, the LGUs (cities and municipalities) submit their data, complying data entry through the CMCI-designed local data capture sheet where the required indicator data are entered.

The cities and municipalities are then ranked on the basis of their overall competitiveness scores computed from the composite scores of four pillars, namely economic dynamism, government efficiency, infrastructure, and resiliency. Each of these pillars comprise ten (10) indicators as shown in Table 1. Each indicator in turn may consist of a variety of data items. The following excerpts from the description of the pillars are cited from the CMCI website (2018).

The first pillar, *Economic Dynamism*, is “usually associated with activities that create stable expansion of business and industries and higher employment. This is the concrete representation of productivity as it matches the output of the local economy with local resources. It is recognized that localities are the centers of economic activities. Therefore, business expansion and job creation are easily observable in local settings.”

The second pillar, *Government Efficiency*, refers to “the quality and reliability of government services and government support for effective and sustainable productive expansion. Conceptually, this factor looks at government as an institution that is generally not corruptable to

protect and enforce contracts; apply moderate and reasonable taxation and is able to regulate proactively.”

Table 1. Indicators of CMCI Pillars

Pillar 1	Pillar 2	Pillar 3	Pillar 4
Economic Dynamism	Government Efficiency	Infrastructure	Resiliency
1. Size of the Local Economy	11. Compliance to National Directives	21. Basic Infrastructure: Roads	31. Organization and Coordination: Land Use Plan
2. Growth of the Local Economy	12. Presence of Investment Promotion Unit	22. Basic Infrastructure: Ports	32. Organization and Coordination: Disaster Risk Reduction Plan
3. Structure of Local Economy	13. Business Registration Efficiency	23. Basic Infrastructure: Availability of Basic Utilities	33. Organization and Coordination: Annual Disaster Drill
4. Safety Compliant Business	14. Capacity to Generate Local Resource	24. Number of PUBLIC Transportation Vehicles	34. Organization and Coordination: Early Warning System
5. Increase in Employment	15. Capacity of Health Services	25. Education Infrastructure	35. Resiliency Financing: Budget for DRRMP
6. Cost of Living	16. Capacity of School Services	26. Health Infrastructure	36. Resiliency Reports: Local Risk Assessments
7. Cost of Doing Business	17. Recognition of Performance	27. LGU Investment in Infrastructure	37. Resiliency Infrastructure: Emergency Infrastructure
8. Financial Deepening	18. Compliance to Business Permits and Licensing System (BPLS) Standards	28. Accommodation Capacity	38. Resiliency Infrastructure: Utilities
9. Productivity	19. Peace and Order	29. Information Technology Capacity	39. Resilience of System: Employed Population
10. Presence of Business and Professional Organizations	20. Social Protection	30. Financial Technology Capacity	40. Resilience of System: Sanitary System

The third pillar, ***Infrastructure***, refers to “the physical building blocks that connect, expand, and sustain a locality and its surroundings to enable the provision of goods and services. It involves basic inputs of production such as energy, and water; interconnection of production such as transportation, roads, and communications; sustenance of production such as waste, disaster preparedness, environmental sustainability and human capital formation infrastructure. This represents the idea of making productivity sustainable over time.”

The fourth pillar, ***Resiliency***, is “the capacity of a locality to facilitate businesses and industries to create jobs, raise productivity, and increase the incomes of citizens over time despite of the shocks and stresses it encounters. This implies that the role of local governments is critical in ensuring a competitive environment to make businesses sustain their profits, create jobs, and increase the productivity of its people. In order for localities to be able to do this, it must be resilient in its infrastructure, governance, social and environmental systems.”

The overall competitiveness score is the sum of the scores of the pillars. The competitiveness index ranking has a total index value of 100, and each of the four pillars represent twenty five percent (25%) of the index value. These scores (pillars and indicators) are determined by the values of the actual data, as well as the completeness of the submitted data. The higher the competitiveness score of a city or municipality, the more competitive it is. The cities and municipalities are ranked according to the Philippine local government classification, with cities classified as highly urbanized, independent or component, and municipalities as first, second, third, fourth, fifth, or sixth class.

The provinces which are the largest units in the political structure of the Philippines are likewise ranked in competitiveness. The computation of the competitiveness scores of the Provinces are based on the competitiveness scores of the of municipalities and component cities under its administrative supervision. For a province to qualify in the competitiveness ranking, it must comply with the following requirements. First, the combined population of all participating LGUs under the province should constitute at least 60% of the total province population. Second, the covered participating localities must be 90% of the total number of local government units under the province. When a province meets the stated conditions, the prescribed scoring calculates the population and income weighted average of the cities and municipalities covered. The respective scores of the cities and municipalities covered are then aggregated.

Navigating through the CMCI webpage (www.cmci.dti.gov.ph) illustrates the straightforward presentation of the index reports in row-column formats. The annual rankings of the various cities and municipalities with their respective classifications are shown as selected by the user from the navigation pane.

C. CMCI Data Set and Data Capture

The annual CMCI database (electronic worksheet, MS Excel) is populated by the participating cities and municipalities at source. The various LGUs are provided the *Local Data Capture Sheet (LDCS)*, the instrument by which the LGU data set are keyed in. Each of the indicators of the four CMCI pillars comprise the data fields in rows. For every indicator, the data encoders are guided by descriptors in three additional columns, namely: (a) the measurement type / data required, (b) the source and (c) the definition.

The *measurement type* indicates whether the values expected are actual numbers in magnitude (e.g., Number of approved/issued fire safety inspection permit, rate, in Philippine peso, e.g. Philippine peso per cubic meter (ex. 16.50), or such instruction as “Number / Actual Count (0 - "Zero " if none, NDA for No Data Available)”).

The *source* of each of the data item required guides the encoder which specific government office (local government units, local government agencies) and for some entries, which specific mandated summary forms or reports these data should be culled from.

The *definition* provides short description of the expected data to be entered for each required indicator. Some descriptors are operational definitions of some of the data required (e.g., “Capitalization is usually defined as the aggregate valuation of a company based on its current share price and the total number of outstanding stocks,” while other descriptors provide justification of the type of data required (e.g. “price after minimum per cubic meter consumption for commercial and industrial.”) Still other descriptors define what the indicator measures (“This indicator measures the number of “active” establishments in a locality,”) and other descriptors provide standards/references and guidance (“Price of Diesel at the biggest Gas station in the locality (as of December 31)”; “average rental rate per square meter for commercial /office space.”) Some other descriptors provide justification of why such sources are utilized as "proxy" information.

Other than these three data entry descriptors, the Local Data Capture Sheet does not provide data entry format guides that allow for guided encoding, data entry validation, or even error alerts for erroneous entries that do not comply with the expected formats, data entry types, expected range of values, or even the judicious use of “NA” and “NDA” entries or even “0” (zero) as a valid entry. There are however some guidelines in the LDCS that accept or create non-numeric entries, and potentially cause confusion about how to enter the data items, and in some cases, how to generate or compute the value requested. Some of these are listed in Table 2. The comprehensive data event analysis of the error potential descriptors is summarized in: *Appendix A. Potential Data Capture Error Per Data Item by Classification.*

Table 2. Selected Instructions in the CMCI Local Data Capture Sheet

Pillar component (Indicator)	Instruction for data capture
3.1.1. Number of approved business permits for NEW business applications	<ul style="list-style-type: none"> Actual / Item Count; "0" if Zero; "NDA" for No Data Available
12.2. Presence of the equivalent of an Investment Promotions Unit (Physical Office)	<ul style="list-style-type: none"> Yes or No
13.1.1. Getting Building Permits - Minutes	<ul style="list-style-type: none"> Computed Value / Number of Days
13.1.2. Getting Building Permits - Steps	<ul style="list-style-type: none"> Number of Steps / Number Actual Count in units specified
21.1. Asphalt (in.)	<ul style="list-style-type: none"> Actual Count in units specified; "0" if Zero; "NDA" for No Data Available; N/A not applicable to LGU
33.2. Date of latest LGU-wide disaster drill	<ul style="list-style-type: none"> Date
41.1. Cost of Air freight	<ul style="list-style-type: none"> Amount in Peso / kilogram; "NDA" for No Data Available; N/A if data required is not applicable to LGU
42.1. Number of PUBLIC Transport Terminals - Buses	<ul style="list-style-type: none"> Number / Actual Count; 0 - "Zero" if none; NDA for No Data Available
45.1. Net Enrolment Ratio (secondary level)	<ul style="list-style-type: none"> Ratio

The final raw CMCI database comprises all the entries of all the represented local government units (represented in rows, and all the indicators of all four pillars, represented in columns). For the 2018 CMCI database, a total of 1,516 LGUs participated.

D. Data Cleaning and the Knowledge Discovery in Databases

Knowledge Discovery in Databases (KDD) is described by Tomar & Agarwal (2014) as the process of exploring valuable, understandable and novel information from large and complex data repositories. In the KDD process, after having obtained and selected the data, the process of extracting and discovering useful knowledge from the data set requires that the data undergo the crucial step of data cleaning in order to prepare the data for subsequent data mining and interpretation.

Figure 1 illustrates the proposition of Pazmiño-Maji et al. (2017) on the KDD steps in a systematic and mapping review in knowledge discovery database framework. Pazmiño-Maji et al. (2017) identify the necessity of preprocessing data, consistent with the data cleaning step suggested by Tomar & Agarwal (2014).

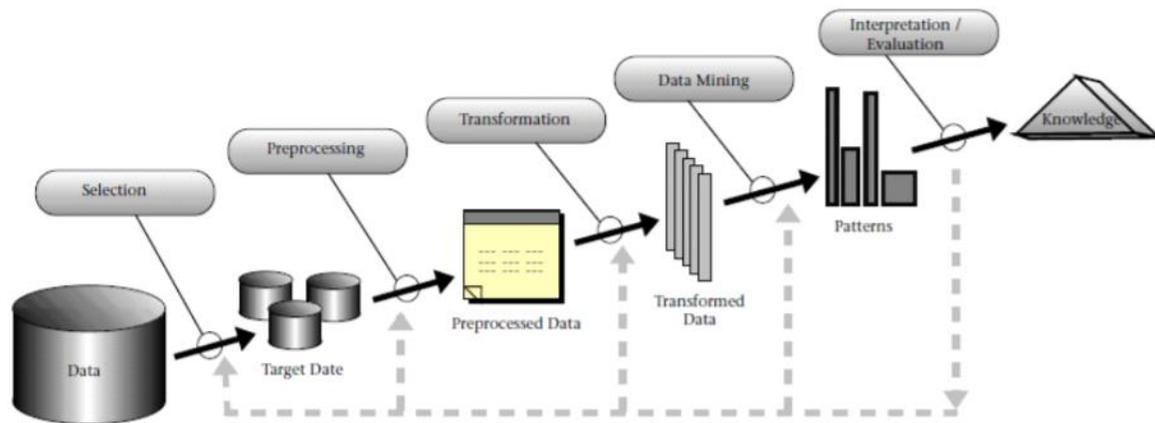


Figure 1. Overview of the steps constituting the KDD process.

Pazmiño-Maji et al. (2017)

For the CMCI data set to be processed for the computations of competitiveness scores, it is imperative that the dataset be preprocessed for the data transformation. In this study, as the initial step of the KDD, the CMCI dataset was analyzed. As aforementioned, the CMCI index is composed of four pillars namely, economic dynamism, government efficiency, infrastructure and resiliency, with each of the four pillars comprising multiple indicators. The CMCI database contains information, (populated at source) on the cities and municipalities all over the country. The cities, classified as highly urbanized, independent component and component cities, and the municipalities, classified as first, second, third, fourth, fifth, and sixth class municipalities comprise the row entries of the database.

The following are identified as the five main stages of the KDD process, namely, data selection, data preprocessing, data transformation, data mining and data interpretation (Blazquez & Domenech, 2018). Earlier on, Fayyad, Piatetsky-Shapiro, & Smyth (1996) assert that the additional steps in the KDD process, such as data preparation, data selection, data cleaning, incorporation of appropriate prior knowledge, and proper interpretation of the results of mining ensure that useful knowledge is derived from the data.

In any knowledge discovery process, the value of extracted knowledge is directly related to the quality of the data used (García-Gil, Luengo, García, & Herrera, 2019). Data quality is described by Corrales, Ledezma, & Corrales (2018) as being directly related to the perceived or established purposes of the data, stating that high-quality data meet expectations to a greater extent than low-quality data. Likewise, Hariharakrishnan, Mohanavalli, & Kumar (2017) explain the importance of obtaining quality and correct samples of data before applying data mining techniques to get the desired information.

Essentially, before a database may be processed for data extraction and subsequent evaluation and interpretation, the raw data need to be pre-processed. According to Jony, Mohammed,

Habib, Momen, & Rony (2015) raw data often contain noise, and are inconsistent and incomplete, requiring pre-processing in order to generate meaningful data. García-Gil et al. (2019) contend that the presence of imperfections, redundancies or inconsistencies will cause data to be of low quality. Data quality is defined in terms of accuracy, completeness, consistency, timeliness, believability, and interpretability where these qualities are assessed based on the intended use of the data (Han, Kamber, & Pei, 2012).

Corrales et al. (2018) posit that data quality issues may be classified into two classification tasks, namely provenance and noise. Figure 2 illustrates the quality issue in classification tasks. Jony et al. (2015) maintain that the target of the pre-processing phase is to increase the quality of data. Actual processing begins after data are successfully pre-processed. While data pre-processing is challenging, it has an impact on the overall analysis and on the data value chain (Bilalli, Abelló, Aluja-Banet, & Wrembel, 2019; Jony et al., 2015). Data pre-processing techniques can improve data quality, thereby helping to improve the accuracy and efficiency of the subsequent mining process (Han et al., 2012).

Raw data imperfections include inconsistencies, missing values, noise, or redundancies (Ramírez-Gallego, Krawczyk, García, Woźniak, & Herrera, 2017) which may transpire during data acquisition, transmission, storage, integration and categorization (García-Gil et al., 2019).

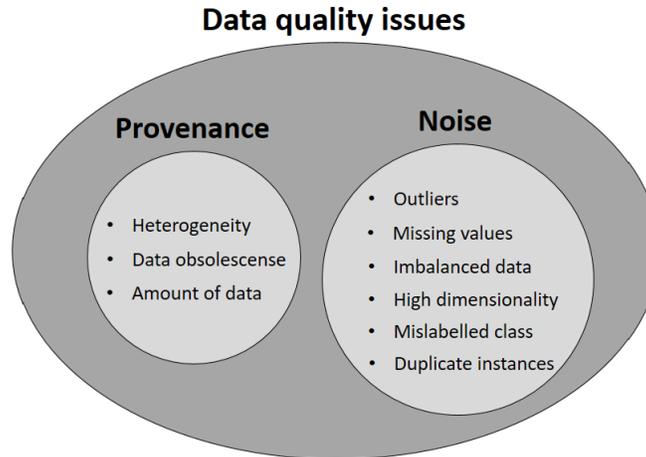


Figure 2. Data quality issues in classification tasks
Corrales et al. (2018)

Moreover, Garcia-Gil et al. (2019) note that the most common of these imperfections are noise and missing values. Jony et al. (2015) refer to noise as having incorrect or corrupted values which may be traced to technical problems within the tools, human error, transmission error, or possible outlier values. García-Gil et al. (2019) furthermore describe noise as the partial or complete alteration of the information gathered for a data item. Datasets with a large amount of

noise can have a detrimental impact on the success of classification tasks such as reducing the predictive ability of a classifier (Corrales et al., 2018).

Missing values are described by Corrales et al. (2018) as missed values of an attribute which typically occur due to faults in the process of data recollection, data transfer problems, sensor faults, or incompleteness in surveys. Jony et al. (2015) portray incomplete data as lacking in attribute values, or certain attributes of interest, or missing values in the dataset, adding that incomplete data occurs typically due to attributes unavailability and equipment malfunctioning. In the same token, Tomar & Agarwal (2014) describe a missing value or an unknown value for an attribute as an incomplete instance and further assert that incomplete records or missing values produce a challenge to data mining process and can lead to the wrong interpretation of data-based information.

Other than noise and missing values, Corrales et al. (2018) identify outliers and high dimensionality as two other quality issues to be addressed in the pre-processing and data cleaning steps in the KDD methodology. The authors define an outlier as an inconsistent value or abnormal behavior of the measured variable which is considered as a distant observation from other observations. On the other hand, the authors describe high dimensionality as datasets with a large number of variables, where these variables can be categorized as: relevant, irrelevant, or redundant. Because of the large number of features, a learning model tends to overfit, resulting in lower model performance. Corrales et al.(2018) also enumerate the following data quality issues of databases, namely data freshness, integrity constraints, duplicate rows, missing values, inconsistencies, and overloaded tables which need to be considered during the pre-processing and data cleaning steps.

4. Methodology

A. Variables and Measure / Concept and Indicators

The objective of this study is to investigate the reliability of the data capture at the source as well as integrity of the contents of the 2018 CMCI database. The document used to analyze the data capture at source is the CMCI Local Data Capture Sheet, particularly on the entries and instructions found on the last three fields, namely, (a) measurement type / data required, (b) the source, and (c) the definition.

The variables studied and measured to analyze the presence, extent and types of data errors are the values or entries of all the indicators of the pillars in CMCI the dataset.

B. Research Design and Methods

The research design of the investigation of the data quality is both reporting and descriptive. The investigation provides a summation of the data noise, specifically, the type and extent of data errors, using descriptive statistics of central measures and deviation. The study is cross-sectional since the analysis is limited only to the 2018 CMCI dataset, and is ex-post facto in design, since the variables have already been captured, with the researchers having no control over the collection and manipulation of the variables.

In investigating the data quality of the CMCI dataset, two data analysis methods were used, namely, data event analysis and error cluster analysis. The data event analysis entailed identifying and classifying the potential sources of error at data capture (provenance) analyzing the Local Data Capture Sheet, while the error cluster analysis involved extracting evidences of data errors (noise) in the CMCI dataset.

C. Statistical Tests and Parameters

The data event analysis which investigated the instructions of the Local Data Capture Sheet did not entail any statistical test. The basic investigation done was the evaluation of the level of clarity of the instructions as well as the identification of potential error-causing descriptors and instructions. These findings were then post-categorized, without performing statistical summaries. The results are then summarized and reported by categories of potential error-generating descriptors and instructions, at the level of the four CMCI pillars.

As the initial step of the data error analysis, the CMCI dataset was preprocessed through data cleaning algorithms. The error cluster analysis involved the computation of the central measures and the standard deviations of the relevant numeric variables. The potential errors (outliers, inconsistencies) were then identified based on these descriptive statistics values. Large departures from central measures were indicators of potential noise. In addition, relevant columns were sorted and data were visually generated as preliminary diagnostics for detecting patterns and anomalies.

5. Results

To illustrate the extent to which the CMCI data capture contained errors, the results of the of the cluster error analysis, with three randomly selected columns (data fields) are shown in Table 3. These multiple types of errors were counted for each data field (n = 1,516) of the CMCI data set from 2018.

Table 3. Data capture errors – First pass

Data Element	1.1 Gross Sales of Registered Firms	24.5 Taxis	22.1.3 Distance of City/Municipal Hall to Seaport / Local PUBLIC Wharf (in km)
numeric values	1458	1098	1407
NDA values	58	299	65
blanks	0	0	0
"-" entries	0	8	0
N/A values	0	109	43
NA entries	0	2	1
not required values	0	0	0
Totals, <i>n</i> =	1,516	1,516	1,516

Table 3 shows that there are a significant number of non-numeric (errors) entries in the database which can inhibit obtaining relevant statistics on the data. Overall, 11% of the entries in the 2018 data set have the type of errors presented in Table 3.

Table 4 gives a sample list of the types of typographical errors found in the dataset.

Table 4. Typographical errors

Data Entered	Location (Indicator Code) and Type of Error
354,257,133,62	1.1 last comma separator should be a decimal point
42..11	7.2.1 extra decimal point
43,414,684.245.38	9.1 first decimal point should be a comma
110, 403, 599.25	14.3 spaces in number
30 mins	18.3.1 data should be numeric (no “mins”)
NDANDA	24.5 typographical error
P36,033,416.00	35.1.1 no units required (P = Philippine Peso)
same as 27.2.	35.1.2 numeric value required

The type of errors in Table 4 represent .03% of the data, suggestive of high efficiency levels of the LGU staff in charge of entering the data. The occurrence of these types of errors need to be eliminated nevertheless.

Table 5 illustrates some potential logic errors in the data, either (suspected) outliers or inconsistencies in the data that need further analysis or interviews (for clarification), with the LGU staff involved in data capture. Many of these potential errors were identified by computing the average and standard deviation of the data column, then searching for anomalous values.

Table 5. Suspected errors

Data Entered	Location (Indicator) and Type of (suspected) Error
3,474	7.1.1 Cost of Electricity when the average cost of electricity is 13.19 peso, 3,474 pesos seem too large
43,595	13.2.1 Getting Occupancy Permits – minutes when the average number of minutes is 640 (= 10.67 hours), 43,595 minutes (=726 hours) seems too large
960	38.1.2. Distance of Water Source with the average distance to a water source being 8.74, 960 seems rather large
35.1.2. Total LGU Budget ≠ 27.2. Total LGU Budget	there are 81 (5.3%) LGU's whose reporting of the total LGU budget differs in the two indicators where it is requested

Table 5 indicates that the data collection methodology may still be improved. The nature of the error suggests that the data entry instructions need to be clear on the specific data item requested, the units of the data requested, whether a calculation is necessary, and the precision of the data requested. In addition, example data could be given, and the collection database could be structured to flag potential data entry errors for the user. *Appendix B. Table of Errors of the 2018 CMCI Database* shows in detail the various errors across the dataset encompassing the data capture, typographical, and logic errors.

6. Conclusions

A. Conclusion

The results of the analyses show that data coming into the CMCI data set need the crucial cleaning step to be ready for analysis and transformation. The error cluster analysis and the data event analysis point out that not only a variety of errors exist in the CMCI database, but that the data entry interface also contains lapses that may bring about the likelihood for data entry errors. These errors could potentially inhibit the accurate computation of meaningful CMCI rankings based on the four pillars.

This study was prompted after researchers have observed that the province of Cebu is ranked low in competitiveness (27th), even if the province was ranked by the Commission on Audit as the richest province in real property assets and cash on the same year. If the CMCI index were to be

utilized as envisioned “to guide where to locate, where business prospectors may find value,” having the competitiveness rank of 27 positions the Cebu Province at a disadvantage.

The KDD framework illustrates the imperatives of data preprocessing to facilitate the generation of meaningful and useful knowledge. Data errors, which include outliers, non-numeric data values, missing data, and typographical and transposition errors make the computation of an aggregate index value for any LGU suspect. The overall goal of the CMCI is to provide LGU leaders and decision makers with actionable results in an effort to improve the LGUs in pillars where they need the most assistance.

B. Recommendations

To be able to effectively analyze and transform the CMCI dataset to generate the reliable competitive rankings, the data acquisition process for the CMCI data needs to be addressed for correctness and completeness. Data noise may be reduced or eliminated if, at the data source, potential for data entry errors are already avoided. Occasional data errors may occur from various sources, other than data entry. However, literature affirms how data quality improves through data pre-processing techniques. Similarly, literature demonstrates the harmful and costly consequences of processing dataset with large amount of noise.

To improve the data quality issues of the CMCI data set, the following are recommended:

- clear instructions to the LGU personnel responsible for data acquisition, including specific steps when calculated entries are required
- concrete examples, with appropriate units, of the data requested for each entry, including the precision of numeric data types
- internal checks and data control measures on data entry using the current capture to evaluate valid ranges for each entry
- elimination of the opportunity to enter NDA, N/A, and other non-numeric values
- elimination of the use of arithmetic operators (“/” in particular) for clarity in the presentation and structural stability of the spreadsheet
- the development of a well-designed, standardized, user-friendly data entry interface, replete with data entry validation algorithms, with error alerts to flag potential errors, and data entry restrictions for erroneous or unexpected entries in terms of magnitude, format, or other identifiable errors

C. Policy Implications

The recommendations in the terminal report of the Open Government Partnership by Aceron (2018) that the CMCI “program continues its work, focusing on making the CMCI data user-friendly, actionable, and accessible to citizens” and that “closer attention should be paid to how

LGUs act upon the CMCI findings to undertake reforms that improve their competitiveness, particularly focusing on LGUs that have not improved their scores” are of telling import.

The CMCI program objectives are noble, and over the years, the program has elicited the increasing participation by LGUs, submitting their respective information for competitiveness ranking. In the assessment of CMCI champion and stalwart businessman Guillermo “Bill” Luz during the Webinar series on the CMCI pillars last July 2020, Mr. Luz asserted that the LGUs have appreciated the concept of “data centrism,” now supportive of the importance of data in decision making.

It is equally important however to consider that in order to achieve “making the CMCI data user-friendly, actionable,” the competitiveness index must be generated from clean and reliable data. Guided by the principles of the knowledge discovery in data (KDD) framework, it can then be recognized that error-free CMCI dataset generates reliable computations of the competitiveness index.

The researchers present their observation on the disparity between the CMCI competitiveness rank of the Cebu Province and its concurrent evaluation as the richest province in the country. To encourage the utilization of the CMCI “findings to undertake reforms that improve their competitiveness,” the LGUs and their respective stakeholders must be assured of the data integrity.

While not reported in the methods and results of the study, it worth mentioning that in the process of analyzing the data errors, data from the province of Cebu for 2018 were extracted from the larger CMCI data set, and comparisons were made for the first- and second- class municipalities. The current grouping used by the CMCI lumps the first- and second- class municipalities together in the competitive ranks of the municipalities. However, in test-ranking the municipalities, it is evident, due to the size differential of first- and second- class municipalities, that two separate rankings might be more appropriate.

Further, the current LGU groupings, first and second-class municipalities, as well as third, fourth, fifth, and sixth class municipalities need to be reviewed for possible disaggregation, so that only LGUs in the same class are compared. It was observed that the larger class municipalities trend, uniformly, to the top of the ranking due to their larger size, and their economic robustness, thus unfairly disadvantaging the smaller municipalities in the groupings.

There is also a need to consider the conversion of absolute metrics to relative metrics based on the population of each LGU. Aggregate measures likewise need to be constructed for logical groupings of individual indicators such as health care, emergency personnel, transportation, for simplicity of targeted presentation and communication to the LGU officials and decision makers.

Policy makers may be guided by the results of this study's investigation. Reforms may be undertaken on the CMCI data capture instrument and error-checking procedures, which in turn is anticipated to produce reliable competitiveness index values. Meaningful and useful CMCI competitiveness scoring may be generated by securing the CMCI dataset from potential sources of errors, particularly at the data capture, as well as by performing systematic preprocessing and data cleaning algorithms. Finally, when LGUs and indicator measures are aggregated appropriately, significant and actionable information may be delivered, facilitating one of CMCI's objectives of generating "insight for policy making, development planning and investment promotion," at a more granular, specific and actionable level.

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Appendix A. Potential Data Capture Error Per Data Item by Classification
(Data Cleaning: Enhancing the integrity of the CMCI database, Chaves & Snyder)

Pillar 1 - Economic Dynamism

Classification	Data Item	Description Potential Error Contributor
Clarification	7.4.1.1. Plantation	<ul style="list-style-type: none"> Who determines if Plantation or Non-Plantation? How is plantation category to be differentiated from non-plantation?
	7.4.1.2. Non-Plantation	
	7.4.2.1. Establishments with more than 10 workers	<ul style="list-style-type: none"> Who determines the number of workers? What is the basis for employment?
	7.4.2.2. Establishments with 10 workers or below	
	7.5. Cost of Land in a Central Business District	<ul style="list-style-type: none"> Who determines the Central Business District? Any descriptive characterization, say near the City or Municipal Hall, near the central market, or transport terminal?
Computation - Who is to Compute	2.1. Gross Sales of Registered Firms	<ul style="list-style-type: none"> For AUTOMATICALLY COMPUTED, who computes?
	2.2. Total Capitalization of NEW Businesses	<ul style="list-style-type: none"> Capitalization - current share price and the total number of outstanding stocks What if company is not CORPORATION
	6.1. Local Inflation Rate	<ul style="list-style-type: none"> Rate: Who is to compute the rate? How is the rate to be computed? For AUTOMATICALLY COMPUTED, who computes?
Domain Issue	1.2. Total Capitalization of NEW Businesses	<ul style="list-style-type: none"> Capitalization - current share price and the total number of outstanding stocks. What if company is not CORPORATION
	8.9. Number of Microfinance Institutions	<ul style="list-style-type: none"> Source of information on 2) non-banks with quasi banking functions such as financial cooperatives, savings and loan associations, pawnshops, microfinance institutions.
NDA	3.1.1. Number of approved business permits for NEW business applications	<ul style="list-style-type: none"> Number / Actual Count (0 - "Zero " if none, NDA for No Data Available) What is the basis for NDA? What if abused or misused? Why not have checklist of reasons, and get rid of NDA If NDA is indeed anticipated for some LGUs, should there be some classification or screening to indicate "skips" or autofill "NDA"?
	3.1.2. Number of approved business RENEWALS	
	4.1. Number of Occupancy Permits Approved	
	4.2. Number of approved fire safety inspection	
	5.1. Number of declared employees for NEW business applications	
	5.2. Number of declared employees for business RENEWALS	

	7.1.1. Commercial Users	
	7.1.2. Industrial Firms/Customers	
	7.2.1. Commercial Users	
	7.2.2. Industrial Firms/Customers	
	7.6. Cost of Rent	
	8.1. Number of Universal/Commercial Banks	
	8.2. Number of Thrift and Savings Banks	
	8.3. Number of Rural Banks	
	8.4. Number of Finance Cooperatives	
	8.5. Number of Savings and Loans Associations with Quasi-Banking Functions	
	8.6. Number of Pawnshops	
	8.7. Number of Money Changers/Foreign exchange dealers	
	8.8. Number of Remittance Centers	
	9.2. Number of declared employees for business RENEWALS	
	10.1. Total number of LGU recognized / registered business groups	
	10.2. Total Number of Other Business Groups	
No Comment	1.1. Gross Sales of Registered Firms	• No comments, instructions are clear
	7.3. Price of Diesel as of December 31 per year	
	9.1. Gross Sales of Registered Firms	

Pillar 2 - Government Efficiency

Classification	Data Item	Description Potential Error Contributor
Computation - Method Clarification	13.1.1. Days	<ul style="list-style-type: none"> Whole number for days? For minutes derivation or computation, who checks on accuracy?
	13.1.2. Steps	<ul style="list-style-type: none"> Number of steps needs clarification; several steps may be handled by a single processor; Steps or processor interaction?
	13.2.1. Days	<ul style="list-style-type: none"> Whole number for days? For minutes derivation or computation, who checks on accuracy?
	13.2.2. Steps	<ul style="list-style-type: none"> Number of steps needs clarification; several steps may be handled by a single processor; Steps or processor interaction?
	14.3. Total Revenues of the LGU (in Php)	<ul style="list-style-type: none"> Is this a generated value? The sum of business tax collected and real property tax collected?
	17.1. Number of DILG recognized awards	<ul style="list-style-type: none"> Some awards or recognition are more difficult to obtain or hurdle, but receive the same count?
	17.2.1. Regional Awards	
	17.2.2. National Awards	
	17.2.3. International Awards	
	18.2.1. Days	<ul style="list-style-type: none"> Whole number for days? For minutes derivation or computation, who checks on accuracy?
	18.2.2. Steps	<ul style="list-style-type: none"> Number of steps needs clarification; Several steps may be handled by a single processor; Steps or processor interaction?
	18.3.1. Days	<ul style="list-style-type: none"> Whole number for days? For minutes derivation or computation, who checks on accuracy?
	18.3.2. Steps	<ul style="list-style-type: none"> Number of steps needs clarification; Several steps may be handled by a single processor; Steps or processor interaction?
	NDA	15.1.1. Doctors
	15.1.2. Nurses	
	15.1.3. Midwives	
	15.2.1. Doctors	
	15.2.2. Nurses	
	15.2.3. Midwives	
	16.1.1. Number of Teachers	
	16.1.2. Number of Students	
	16.2.1. Number of Teachers	
	16.2.2. Number of Students	

	19.1. Number of policemen in the Locality	
	20.1. Number of Local citizens with PhilHealth registration	
No Comment	11.1.2. Year of Last Update	
	14.1. Business Tax collected by the LGU (in Php)	
	14.2. Real Property Tax collected by the LGU (in Php)	
Yes/No	11.1.1. Presence of CDP	<ul style="list-style-type: none"> • Should just the answer be entered or typed as “Yes” or “No”?
	12.1. Presence of the Local Investment Incentives Code	
	12.2. Presence of the equivalent of an Investment Promotions Unit (Physical Office)	
	12.3. Presence of Staff manning the IPU	
	12.4. Presence of local executive order or ordinance that mandates the implementation of the LIIC or the setting up of an IPU	
	18.1. BPLS Automation	

Pillar 3 – Infrastructure

Classification	Data Item	Description Potential Error Contributor	
Computation - Method Clarification	21.1. Asphalt (in km.)	<ul style="list-style-type: none"> • Whole number for km? For 1000m, derivation or computation, who checks on accuracy? 	
	21.1.2. Gravel (in km.)		
	21.1.3. Concrete (in km.)		
	21.1.5. Total Land Area		
	22.1.1. Distance to Operating Airport (in Km.)	<ul style="list-style-type: none"> • How are the distances to these infrastructures measured that contribute to competitiveness? 	
	22.1.1. Distance to Operating Airport (in Km.)	<ul style="list-style-type: none"> • Whole number for km? For 1000m, derivation or computation, who checks on accuracy? 	
	22.1.3. Distance to Seaport / Local PUBLIC Wharf (in Km.)	<ul style="list-style-type: none"> • How are the distances to these infrastructures measured that contribute to competitiveness? 	
	22.1.3. Distance to Seaport / Local PUBLIC Wharf (in Km.)	<ul style="list-style-type: none"> • Whole number for km? For 1000m, derivation or computation, who checks on accuracy? 	
Computation - Who is to Compute	23.2.1. Water	<ul style="list-style-type: none"> • Who computes the percentage? 	
	23.2.2. Electricity		
Domain Issue	21.1.2. Gravel (in km.)	<ul style="list-style-type: none"> • Regardless if these are national, barangay or private access roads? 	
	21.1.3. Concrete (in km.)		
	21.1.4. Unpaved (in km.)		
	21.1.5. Total Land Area		
	22.1.1. Distance to Operating Airport (in Km.)	<ul style="list-style-type: none"> • Is this not fair for LGUs that are far from the airport? Or the terrain does not permit? Or that they are inland that does not allow a seaport/wharf? How will the N/A disadvantage a city / municipality without these infrastructures? 	
	22.1.1. Distance to Operating Airport (in Km.)		
	22.1.3. Distance to Seaport / Local PUBLIC Wharf (in Km.)		
	22.1.3. Distance to Seaport / Local PUBLIC Wharf (in Km.)		
		23.1.2. Electricity	
		25.3.1.1. Schools	<ul style="list-style-type: none"> • Why for cities only? Do not some municipalities have tertiary SUCs?
		25.3.1.2. Classrooms	
		25.3.2.1. Schools	<ul style="list-style-type: none"> • Why for cities only? Do not some municipalities have tertiary private HEIs?
		25.3.2.2. Classrooms	
		25.4.1.1. Schools	<ul style="list-style-type: none"> • Why for cities only? Do not some municipalities have Tech or Voc providers affiliated by TESDA?
	25.4.1.2. Classrooms		
	25.4.2.1. Schools		

	25.4.2.2. Classrooms	<ul style="list-style-type: none"> Why for cities only? Do not some municipalities have Tech or Voc providers affiliated by TESDA?
	27.1. Total Investment in Infrastructure of LGU	<ul style="list-style-type: none"> Is this for the total investment for LGU budget for LGU investment in infrastructure? What about congress allocation to LGU? How determined?
	27.2. Total LGU Budget	Is this for the total LGU budget for LGU investment in infrastructure? What about congress allocation to LGU? How determined?
NDA	21.1. Asphalt (in km.)	<ul style="list-style-type: none"> Number or Actual Count (0 - "Zero " if none, NDA for No Data Available) What are the bases for NDA? What if abused or misused? Why not have checklist of reasons, and get rid of NDA If NDA is indeed anticipated for some LGUs, should there be some classification or screening to indicate "skips" or autofill "NDA"?
	21.1.2. Gravel (in km.)	
	21.1.3. Concrete (in km.)	
	21.1.5. Total Land Area	
	25.1.1. Schools	
	25.1.2. Classrooms	
	25.2.1. Schools	
	25.2.2. Classrooms	
	25.3.1.1. Schools	
	25.3.1.2. Classrooms	
	25.3.2.1. Schools	
	25.3.2.2. Classrooms	
	25.4.1.1. Schools	
	25.4.1.2. Classrooms	
	25.4.2.1. Schools	
	25.4.2.2. Classrooms	
NDA with Comments	22.1.3. Distance to Seaport / Local PUBLIC Wharf (in Km.)	<ul style="list-style-type: none"> Number or Actual Count (0 - "Zero " if none, NDA for No Data Available) What is the basis for NDA? What if abused or misused? Why not have checklist of reasons, and get rid of NDA If NDA is indeed anticipated for some LGUs, should there be some classification or screening to indicate "skips" or autofill "NDA"? How will the N/A disadvantage a city or municipality without these utilities? Number or Actual Count (0 - "Zero " if none, NDA for No Data Available) What is the basis for NDA? What if abused or misused? Why not have checklist of reasons, and get rid of NDA If NDA is indeed anticipated for some LGUs, should there be some classification or screening to indicate "skips" or autofill "NDA"? How will the N/A disadvantage a city or municipality without access to these public transportation vehicles?
	23.1.2. Electricity	
	23.2.1. Water	
	23.2.2. Electricity	
	24.1. Buses	
	24.2. Passenger Vans	
	24.3. Jeepneys	
	24.4. Tricycles	
	24.5. Taxis	
	24.6.1. Ship	
	24.6.2. Fast Craft	
	24.7. Passenger Bancas	
	24.8.1. Motorized Vehicles	
	24.8.2. Non-Motorized Vehicles	
	26.1.1. Clinics	

26.1.2. Total Clinic Beds	<ul style="list-style-type: none"> • Number or Actual Count (0 - "Zero " if none, NDA for No Data Available) • What are the bases for NDA? • What if abused or misused? • Why not have checklist of reasons, and get rid of NDA • If NDA is indeed anticipated for some LGUs, should there be some classification or screening to indicate "skips" or autofill "NDA"? 	
26.1.3. Diagnostic Centers		
26.1.4. Total Diagnostic Center Beds		
26.1.5. Hospitals		
26.1.6. Total Hospital Beds		
		<ul style="list-style-type: none"> • How shall these be computed in the scores? Are not cities or municipalities with fewer population, thus, fewer public facilities and corresponding bed capacities disadvantaged?
28.1.1. Hotels	<ul style="list-style-type: none"> • Number or Actual Count (0 - "Zero " if none, NDA for No Data Available) • What is the basis for NDA? • What if abused or misused? • Why not have checklist of reasons, and get rid of NDA • If NDA is indeed anticipated for some LGUs, should there be some classification or screening to indicate "skips" or autofill "NDA"? • How shall these be computed in the scores? Are not some cities or municipalities with fewer touristic endowments, none CBD, none education, none medical, no airports, no seaports? 	
28.1.2. Resorts		
28.1.3. Tourist Inns		
28.1.4. Apartelles		
28.1.5. Pension House		
28.1.6. Others		
28.2.1. Hotel Rooms		
28.2.2. Resort Rooms		
28.2.3. Tourist Inn Rooms		
28.2.4. Apartelle Rooms		
28.2.5. Pension House Rooms		
28.2.6. Others		
29.1. Number of Cable Service Providers		<ul style="list-style-type: none"> • Number or Actual Count (0 - "Zero " if none, NDA for No Data Available) • What is the basis for NDA? • What if abused or misused? • Why not have checklist of reasons, and get rid of NDA • If NDA is indeed anticipated for some LGUs, should there be some classification or screening to indicate "skips" or autofill "NDA"? • How shall these be computed in the scores? Are not some cities or municipalities with fewer business transactions, no CBD, no education centers, no medical centers, no touristic endowments be disadvantaged?
29.2. Number of Internet Service Providers		
29.3. Number of Telephone Companies / Mobile Service Providers		
30.1.1. Number of on-site ATMs (ATM machines are set-up in the premises where the banks are located)		
30.1.2. Number of off-site ATMs (ATM machines are set up on a stand-alone basis (e.g. ATMs located in malls or commercial establishments)		

Pillar 4 – Resiliency

Classification	Data Item	Description Potential Error Contributor
Clarification	32.5. Budget Allocation	<ul style="list-style-type: none"> Basis for budget should be specified for uniformity of interpretation
	38.4.1. Power	<ul style="list-style-type: none"> How shall the "if there are more than one source of power (coal, gas, solar, geothermal, biomass)" be scored?
	38.4.2. Water	<ul style="list-style-type: none"> How shall the "if there are more than one source of water" be scored?
	38.4.3. Telecom	<ul style="list-style-type: none"> How shall the "if there are more than one source of telecom" be scored?
	38.4.4. Alternate Route	<ul style="list-style-type: none"> How shall the alternate route be determined? How shall this be scored?
	38.4.5. Fuel	<ul style="list-style-type: none"> How shall the "if there are more than one source of fuel (coal, gas, solar, geothermal, biomass)" be scored?
Computation - Method Clarification	35.1.1. Total Budget for DRRMP	<ul style="list-style-type: none"> Basis for budget should be specified for uniformity of interpretation
	35.1.2. Total LGU Budget	<ul style="list-style-type: none"> Should be the same as the Total LGU Budget in the Governance Pillar; repeat entry of item 27.2, as specified? If repeat, what is the logic?
	38.1.2. Distance of Water Source	<ul style="list-style-type: none"> Whole number for km? For 1000m, derivation or computation, who checks on accuracy? How shall the distance be used in the scoring? Shall this be reversed? That is, the closer to the water source, the better? How exactly is water source to be defined? What if there are more than one water source?
	38.2.2. Distance of Power Source to LGU	<ul style="list-style-type: none"> Whole number for km? For 1000m, derivation or computation, who checks on accuracy? How shall the distance be used in the scoring? Shall this be reversed? How exactly is power source to be defined? What if there are more than one power source?
	40.2. Distance of Landfill to LGU Center	<ul style="list-style-type: none"> Should be the same as the Total LGU Budget in the Governance Pillar; repeat entry of item 27.2, as specified?
Domain Issue	37.4.1. Public Rubber Boat	<ul style="list-style-type: none"> Not all cities or municipalities may be proximate to bodies of water that will require rubber boats. There are also cities and municipalities that are not prone to flooding so rubber boats may not be needed. Shall this disadvantage the LGUs that do not invest in rubber boats?
	37.4.2. Private Rubber Boat	
	37.4.3. Other Boats Used for Rescue	
	40.5. Presence of Recycling/ Material Recovery Facility	<ul style="list-style-type: none"> Should not the presence of MRF be qualified as "functional"?
NDA	39.1. Number of Trained Responders	<ul style="list-style-type: none"> Number or Actual Count (0 - "Zero " if none, NDA for No Data Available)

		<ul style="list-style-type: none"> • What is the basis for NDA? • What if abused or misused? • Why not have checklist of reasons, and get rid of NDA • If NDA is indeed anticipated for some LGUs, should there be some classification or screening to indicate “skips” or autofill “NDA”? • How shall these be computed in the scores?
NDA with Comments	37.1.2. Private Ambulance	<ul style="list-style-type: none"> • Number or Actual Count (0 - "Zero " if none, NDA for No Data Available)
	37.2.1. Public Firetruck	<ul style="list-style-type: none"> • What are the bases for NDA? • What if abused or misused? • Why not have checklist of reasons, and get rid of NDA • If NDA is indeed anticipated for some LGUs, should there be some classification or screening to indicate “skips” or autofill “NDA”? • How shall these be computed in the scores? • Are not some cities or municipalities with fewer population and economic activities disadvantaged?
	37.2.2. Private Firetruck	
	37.3.1. Public Clearing Equipment	
	37.1.2. Private Ambulance	
	37.2.1. Public Firetruck	
	37.2.2. Private Firetruck	
	37.3.1. Public Clearing Equipment	
	37.1.2. Private Ambulance	
	37.2.1. Public Firetruck	
	37.2.2. Private Firetruck	
	37.3.1. Public Clearing Equipment	
	37.1.2. Private Ambulance	
	37.2.1. Public Firetruck	
	37.2.2. Private Firetruck	
	37.3.1. Public Clearing Equipment	
	37.3.2. Private Clearing Equipment	
	37.4.1. Public Rubber Boat	
	37.4.2. Private Rubber Boat	
	37.4.3. Other Boats Used for Rescue	
	37.5.1. Public Infrastructure for evacuation	
	37.5.2. Private Infrastructure for evacuation	
	38.4.1. Power	
	38.4.2. Water	
	38.4.3. Telecom	
	38.4.4. Alternate Route	
	38.4.5. Fuel	
	40.3. Frequency of Garbage Collection per Month	
No Comment	31.5. Year of Last Update	<ul style="list-style-type: none"> • No comments, instructions are clear
	32.6. Year of Last Update	
	33.2. Date of latest LGU-wide disaster drill	
Yes/No	31.1. Presence of the CLUP	

	31.2. Presence of an office that implements the CLUP (usually the Planning and Development Office)	<ul style="list-style-type: none"> • Should just the answer be entered or typed as “Yes” or “No”?
31.3. Presence of staff manning the office	31.4. Presence of local executive order or ordinance that mandates the implementation of the CLUP	
32.1. Presence of the DRRMP	32.2. Presence of an office that implements the DRRMP	
32.3. Presence of staff manning the office	32.4. Presence of local executive order or ordinance that mandates the implementation of the DRRMP	
33.1. Conduct of LGU-wide disaster drill	34.1. Presence of early warning system that integrates professional responders and grassroots organization	
36.1. Availability of local Geohazard Maps from DENR	36.2. Availability of LGU Risk Profile from Local DRRMO	
37.1.1. Public Ambulance	37.6. Presence of drainage systems in LGU Center	
38.1.1. Presence of Water Source	38.2.1. Presence of Power Source	
38.3.1. Presence of Generator Sets	40.1. Presence of a Sanitary Landfill	
40.4. Practice of Waste Segregation	40.5. Presence of Recycling/ Material Recovery Facility	

Appendix B. Table of Errors of the 2018 CMCI Database

(Data Cleaning: Enhancing the integrity of the CMCI database, Chaves & Snyder)

I. All Cities and Municipalities

Indicators	Numeric Vaues	NDA Values	Blanks	"-" Entries	N/A Values:	NA entries:	Not Required Values:
1.1. Gross Sales of Registered Firms	1,458	58	-	-	-	-	-
1.2. Total Capitalization of NEW Businesses	1,449	67	-	-	-	-	-
2.1. Growth of the Local Economy: Gross Sales of Registered Firms	1,364	119	1	32	-	-	-
2.2. Growth of the Local Economy: Total Capitalization of NEW Businesses	1,344	133	2	37	-	-	-
3.1.1. Number of approved business permits for NEW business applications	1,400	116	-	-	-	-	-
3.1.2. Number of approved business RENEWALS	1,405	111	-	-	-	-	-
4.1. Number of Occupancy Permits Approved	1,407	108	-	-	1	-	-
4.2. Number of approved fire safety inspection	1,444	72	-	-	-	-	-
5.1. Number of declared employees for NEW business applications	1,396	119	-	-	1	-	-
5.2. Number of declared employees for business RENEWALS	1,396	120	-	-	-	-	-
6.1. Local Inflation Rate	1,509	7	-	-	-	-	-
7.1.1. Cost of Electricity- Commercial Users	1,391	124	-	-	1	-	-
7.1.2. Cost of Electricity- Industrial Firms/Customers	1,314	182	-	-	20	-	-
7.2.1. Cost of Water- Commercial Users	1,354	130	-	-	31	1	-
7.2.2. Cost of Water- Industrial Firms/Customers	1,287	176	-	-	52	1	-

7.3. Price of Diesel as of December 31 per year	1,379	126	-	-	10	1	-
7.4.1.1. Daily Minimum Wage Rate - Agricultural (Plantation)	1,434	5	-	-	77	-	-
7.4.1.2. Daily Minimum Wage Rate - Agricultural (Non-Plantation)	1,435	4	-	-	77	-	-
7.4.2.1. Daily Minimum Wage Rate - Non-Agricultural (Establishments with more than 10 workers)	1,513	3	-	-	-	-	-
7.4.2.2. Daily Minimum Wage Rate - Non-Agricultural (Establishments with 10 workers or below)	1,513	3	-	-	-	-	-
7.5. Cost of Land in a Central Business District	1,390	123	-	-	3	-	-
7.6. Cost of Rent	1,306	206	-	-	4	-	-
8.1. Number of Universal/Commercial Banks	1,390	120	-	-	5	1	-
8.2. Number of Thrift and Savings Banks	1,391	120	-	-	5	-	-
8.3. Number of Rural Banks	1,452	61	-	-	3	-	-
8.4. Number of Finance Cooperatives	1,464	51	-	-	1	-	-
8.5. Number of Savings and Loans Associations with Quasi-Banking Functions	1,369	145	-	-	2	-	-
8.6. Number of Pawnshops	1,482	34	-	-	-	-	-
8.7. Number of Money Changers/Foreign exchange dealers	1,425	89	1	-	1	-	-
8.8. Number of Remittance Centers	1,466	49	-	-	1	-	-
8.9. Number of Microfinance Institutions	1,446	69	1	-	-	-	-
9.1. Gross Sales of Registered Firms	1,440	76	-	-	-	-	-
9.2. Number of declared employees for business RENEWALS	1,399	117	-	-	-	-	-

10.1. Total number of LGU recognized / registered business groups	1,359	155	-	-	2	-	-
10.2. Total Number of Other Business Groups	1,286	226	-	-	4	-	-
11.1.1. Presence of CDP	1,462	50	-	-	2	-	2
11.1.2. Year of Last Update	1,356	99	-	-	61	-	-
12.1. Presence of the Local Investment Incentives Code	1,451	61	1	-	-	-	3
12.2. Presence of the equivalent of an Investment Promotions Unit (Physical Office)	1,454	58	-	-	1	-	3
12.3. Presence of Staff manning the IPU	1,454	60	-	-	1	-	1
12.4. Presence of local executive order or ordinance that mandates the implementation of the LIIC or the setting up of an IPU	1,445	66	1	-	3	-	1
13.1.1. Getting Building Permits - Minutes	1,447	64	-	-	5	-	-
13.1.2. Getting Building Permits - Steps	1,437	71	-	-	8	-	-
13.2.1. Getting Occupancy Permits - Minutes	1,434	75	-	-	7	-	-
13.2.2. Getting Occupancy Permits - Steps	1,433	76	-	-	7	-	-
14.1. Business Tax collected by the LGU (in Php)	1,443	73	-	-	-	-	-
14.2. Real Property Tax collected by the LGU (in Php)	1,441	75	-	-	-	-	-
14.3. Total Revenues of the LGU (in Php)	1,386	130	-	-	-	-	-
15.1.1. Capacity of PUBLIC Health Services - Doctors	1,493	21	-	2	-	-	-
15.1.2. Capacity of PUBLIC Health Services - Nurses	1,490	26	-	-	-	-	-
15.1.3. Capacity of PUBLIC Health Services - Midwives	1,490	26	-	-	-	-	-
15.2.1. Capacity of PRIVATE Health Services - Doctors	1,407	107	-	-	2	-	-
15.2.2. Capacity of PRIVATE Health Services - Nurses	1,351	163	-	-	2	-	-

15.2.3. Capacity of PRIVATE Health Services - Midwives	1,354	160	-	-	2	-	-
16.1.1. PUBLIC secondary education - Number of Teachers	1,426	90	-	-	-	-	-
16.1.2. PUBLIC secondary education - Number of Students	1,417	98	-	-	1	-	-
16.2.1. PRIVATE secondary education - Number of Teachers	1,343	165	-	-	8	-	-
16.2.2. PRIVATE secondary education - Number of Students	1,346	163	-	-	7	-	-
17.1. Number of DILG recognized awards	1,414	102	-	-	-	-	-
17.2.1. Other awards conferred by credible institutions - Regional Awards	1,364	148	1	-	3	-	-
17.2.2. Other awards conferred by credible institutions - National Awards	1,355	159	-	-	2	-	-
17.2.3. Other awards conferred by credible institutions - International Awards	1,272	237	1	-	6	-	-
18.1. BPLS Automation	1,476	39	-	-	-	-	1
18.2.1. Getting Mayor's Permit for NEW business applications - Minutes	1,477	38	-	-	1	-	-
18.2.2. Getting Mayor's Permit for NEW business applications - Steps	1,483	31	1	-	1	-	-
18.3.1. Getting Business RENEWAL Permits- Minutes	1,475	40	-	-	1	-	-
18.3.2. Getting Business RENEWAL Permits - Steps	1,480	34	1	-	1	-	-
19.1. Number of policemen in the Locality	1,496	20	-	-	-	-	-
20.1. Number of Local citizens with PhilHealth registration	1,472	43	-	1	-	-	-
21.1. Asphalt (in.)	1,312	196	1	3	4	-	-
21.1.2. Gravel (in.)	1,367	144	-	2	3	-	-
21.1.3. Concrete (in.)	1,446	70	-	-	-	-	-

21.1.4. Unpaved (in.)	1,355	156	1	3	1	-	-
21.1.5. Total Land Area	1,472	44	-	-	-	-	-
22.1.1. Distance of City/Municipal Hall to Operating Airport (in.)	1,421	56	-	-	39	-	-
22.1.2. Distance of City/Municipal Hall to Land Transport Terminal (in.)	1,424	69	-	-	22	1	-
22.1.3. Distance of City/Municipal Hall to Seaport / Local PUBLIC Wharf	1,407	65	-	-	43	1	-
23.1.1. Average hours of WATER services per day at the Central Business District	1,405	83	-	-	28	-	-
23.1.2. Average hours of ELECTRICITY services per day at the Central Business District	1,465	48	-	-	3	-	-
23.2.1. Percentage of Households with WATER Service	1,358	133	-	-	25	-	-
23.2.2. Percentage of Households with ELECTRICITY Service	1,411	103	-	-	2	-	-
24.1. Buses	1,331	151	-	2	32	-	-
24.2. Passenger Vans	1,321	162	-	2	31	-	-
24.3. Jeepneys	1,397	105	-	2	12	-	-
24.4. Tricycles	1,436	71	1	2	6	-	-
24.5. Taxis	1,098	299	-	8	109	2	-
24.6.1. Ferries - Ship	890	259	-	4	359	4	-
24.6.2. Ferries - Fast Craft	870	272	-	5	364	5	-
24.7. Passenger Bancas	1,006	205	-	4	299	2	-
24.8.1. Others - Motorized Vehicles	1,136	302	-	5	72	1	-
24.8.2. Others - Non-Motorized Vehicles	1,072	354	-	5	85	-	-
25.1.1. Number of PUBLIC secondary SCHOOLS	1,482	34	-	-	-	-	-
25.1.2. Number of PUBLIC secondary school CLASSROOMS	1,427	88	-	-	1	-	-
25.2.1. Number of PRIVATE secondary SCHOOLS	1,368	131	-	3	14	-	-

25.2.2. Number of PRIVATE secondary school CLASSROOMS	1,298	198	-	3	17	-	-
25.3.1.1. PUBLIC Tertiary Schools	741	159	-	1	612	3	-
25.3.1.2. PUBLIC Tertiary school Classrooms	709	174	-	1	629	3	-
25.3.2.1. PRIVATE Tertiary Schools	691	171	-	3	648	3	-
25.3.2.2. PRIVATE Tertiary school Classrooms	668	188	-	2	655	3	-
25.4.1.1. PUBLIC Technical Vocational Education and Training Schools	711	169	-	2	630	4	-
25.4.1.2. PUBLIC Technical Vocational Education and Training school Classrooms	690	186	-	2	634	4	-
25.4.2.1. PRIVATE Technical Vocational Education and Training Schools	700	173	-	2	636	5	-
25.4.2.2. PRIVATE Technical Vocational Education and Training school Classrooms	698	181	-	2	631	4	-
26.1.1. Number of PUBLIC health - Clinics	1,446	65	-	2	3	-	-
26.1.2. Number of PUBLIC health - Total Clinic Beds	1,409	99	-	4	4	-	-
26.1.3. Number of PUBLIC health - Diagnostic Centers	1,300	202	-	7	7	-	-
26.1.4. Number of PUBLIC health - Total Diagnostic Center Beds	1,256	243	-	8	9	-	-
26.1.5. Number of PUBLIC health - Hospitals	1,295	205	-	6	10	-	-
26.1.6. Number of PUBLIC health - Total Hospital Beds	1,290	212	-	5	9	-	-
26.2.1. Number of PRIVATE health - Clinics	1,355	154	-	2	5	-	-
26.2.2. Number of PRIVATE health - Total Clinic Beds	1,294	211	-	3	8	-	-
26.2.3. Number of PRIVATE health - Diagnostic Centers	1,240	259	-	6	11	-	-
26.2.4. Number of PRIVATE health - Total Diagnostic Center Beds	1,211	287	-	7	11	-	-

26.2.5. Number of PRIVATE health - Hospitals	1,226	268	-	7	15	-	-
26.2.6. Number of PRIVATE health - Total Hospital Beds	1,215	279	-	6	16	-	-
27.1. Total Investment in Infrastructure of LGU	1,360	152	-	4	-	-	-
27.2. Total LGU Budget	1,425	89	-	2	-	-	-
28.1.1. Hotels	1,295	204	2	8	7	-	-
28.1.2. Resorts	1,350	152	-	9	5	-	-
28.1.3. Tourist Inns	1,313	191	-	6	6	-	-
28.1.4. Apartelles	1,279	220	1	9	7	-	-
28.1.5. Pension House	1,285	213	-	13	5	-	-
28.1.6. Others	1,121	341	41	5	8	-	-
28.2.1. Hotel Rooms	1,285	217	-	7	7	-	-
28.2.2. Resort Rooms	1,326	178	-	8	4	-	-
28.2.3. Tourist Inn Rooms	1,299	206	-	6	5	-	-
28.2.4. Apartelle Rooms	1,267	232	2	8	7	-	-
28.2.5. Pension House Rooms	1,265	233	2	9	7	-	-
28.2.6. Others	1,103	361	41	4	7	-	-
29.1. Number of Cable Service Providers	1,466	47	-	3	-	-	-
29.2. Number of Internet Service Providers	1,471	44	-	1	-	-	-
29.3. Number of Telephone Companies / Mobile Service Providers	1,475	37	-	4	-	-	-
30.1.1. Number of on-site ATMs	1,382	125	-	9	-	-	-
30.1.2. Number of off-site ATMs	1,393	105	-	13	5	-	-
31.1. Presence of the CLUP	1,471	45	-	-	-	-	-
31.2. Presence of an office that implements the CLUP (usually the Planning and Development Office)	1,470	46	-	-	-	-	-
31.3. Presence of staff manning the office	1,468	48	-	-	-	-	-
31.4. Presence of local executive order or ordinance that mandates the implementation of the CLUP	1,466	50	-	-	-	-	-
31.5. Year of Last Update	1,402	83	-	1	30	-	-
32.1. Presence of the DRRMP	1,475	41	-	-	-	-	-

32.2. Presence of an office that implements the DRRMP	1,475	41	-	-	-	-	-
32.3. Presence of staff manning the office	1,472	44	-	-	-	-	-
32.4. Presence of local executive order or ordinance that mandates the implementation of the DRRMP	1,466	49	-	-	1	-	-
32.5. Budget Allocation	1,421	94	1	-	-	-	-
32.6. Year of Last Update	1,419	96	-	-	1	-	-
33.1. Conduct of LGU-wide disaster drill	1,461	55	-	-	-	-	-
33.2. Date of latest LGU-wide disaster drill	1,241	255	-	-	14	-	-
34.1. Presence of early warning system that integrates professional responders and grassroots organization	1,459	55	-	-	-	-	2
35.1.1. Total Budget for DRRMP	1,416	100	-	-	-	-	-
35.1.2. Total LGU Budget	1,431	85	-	-	-	-	-
36.1. Availability of local Geohazard Maps from DENR	1,471	45	-	-	-	-	-
36.2. Availability of LGU Risk Profile from DSWD	1,464	51	1	-	-	-	-
37.1.1. Ambulance - Public	1,475	41	-	-	-	-	-
37.1.2. Ambulance - Private	1,350	161	-	-	5	-	-
37.2.1. Firetrucks - Public	1,478	38	-	-	-	-	-
37.2.2. Firetrucks - Private	1,342	167	1	-	6	-	-
37.3.1. Clearing Equipments- Public	1,407	108	-	-	1	-	-
37.3.2. Clearing Equipments - Private	1,282	230	1	-	3	-	-
37.4.1. Rubber boats - Public	1,354	133	-	1	28	-	-
37.4.2. Rubber boats - Private	1,258	227	-	1	30	-	-
37.4.3. Other Boats Used for Rescue	1,330	159	2	-	25	-	-
37.5.1. Infrastructure for evacuation - Public	1,438	77	-	1	-	-	-
37.5.2. Infrastructure for evacuation - Private	1,294	216	-	1	5	-	-

37.6. Presence of drainage systems in LGU Center	1,457	58	-	-	1	-	-
38.1.1. Presence of Water Source	1,470	46	-	-	-	-	-
38.1.2. Distance of Water Source	1,421	91	-	-	4	-	-
38.2.2. Presence of Power Source	1,462	54	-	-	-	-	-
38.2.2. Distance of Power Source to LGU	1,349	144	-	-	23	-	-
38.3.1. Presence of Generator Sets	1,465	51	-	-	-	-	-
38.4.1. Redundancy - Power	1,347	166	-	1	2	-	-
38.4.2. Redundancy - Water	1,338	173	-	3	2	-	-
38.4.3. Redundancy - Telecom	1,343	167	-	3	3	-	-
38.4.4. Alternate Route	1,280	230	-	5	1	-	-
38.4.5. Redundancy - Fuel	1,299	210	-	4	3	-	-
39.1. Number of Trained Responders	1,418	98	-	-	-	-	-
40.1. Presence of a Sanitary Landfill	1,452	58	1	-	5	-	-
40.2. Distance of Landfill to LGU Center	1,083	134	-	-	297	2	-
40.3. Frequency of Garbage Collection per Month	1,428	82	-	-	6	-	-
40.4. Practice of Waste Segregation	1,472	44	-	-	-	-	-
40.5. Presence of Recycling/ Material Recovery Facility	1,466	50	-	-	-	-	-

Indicators	Percent non-numeric entries:	minimum of indicator	maximum of indicator	average of indicator	standard deviation of indicator	Recommendation for indicator in order to do cluster analysis
1.1. Gross Sales of Registered Firms	0.038259	0.00	₱3,151,572,787.652.00	₱12,974,428,713.80	₱114,506,916,095.54	Normalize, investigate zero entries
1.2. Total Capitalization of NEW Businesses	4.42%	0.00	₱234,352,394,233.04	₱669,950,650.52	₱8,272,825,407.94	Normalize, investigate zero entries
2.1. Growth of the Local Economy: Gross Sales of Registered Firms	10.03%	-1.00	₱30,201.24	₱28.55	₱820.52	Normalize (?), investigate 30,201.24
2.2. Growth of the Local Economy: Total Capitalization of NEW Businesses	11.35%	-1.00	₱4,861.19	₱8.21	₱139.98	Normalize (?), investigate 4,861.19
3.1.1. Number of approved business permits for NEW business applications	7.65%	0.00	25,097.632.00	18,428.55	670,789.98	Normalize, investigate 25,097,632.00
3.1.2. Number of approved business RENEWALS	7.32%	0.00	75,545.00	1,201.74	3,990.63	Normalize
4.1. Number of Occupancy Permits Approved	7.19%	0.00	15,420.00	175.95	630.50	Normalize
4.2. Number of approved fire safety inspection	4.75%	0.00	70,469.00	1,132.40	3,228.55	Normalize
5.1. Number of declared employees for NEW business applications	7.92%	0.00	113,750.00	804.19	4,399.22	Normalize
5.2. Number of declared employees for business RENEWALS	7.92%	0.00	496,744.00	5,259.47	27,241.52	Normalize
6.1. Local Inflation Rate	0.46%	1.90	12.00	5.31	1.60	investigate 12.00
7.1.1. Cost of Electricity-Commercial Users	8.25%	0.00	3,474.00	13.19	93.50	investigate 3,474
7.1.2. Cost of Electricity-Industrial Firms/Customers	13.32%	0.00	639.71	10.56	21.66	investigate 639.71
7.2.1. Cost of Water-Commercial Users	10.69%	0.00	520.00	43.44	70.91	investigate 520
7.2.2. Cost of Water- Industrial Firms/Customers	15.11%	0.00	1,082.00	45.82	84.72	investigate 1082
7.3. Price of Diesel as of December 31 per year	9.04%	0.00	82.50	40.74	6.74	

7.4.1.1. Daily Minimum Wage Rate - Agricultural (Plantation)	5.41%	265.00	500.00	314.28	35.81	
7.4.1.2. Daily Minimum Wage Rate - Agricultural (Non-Plantation)	5.34%	200.00	500.00	312.40	35.93	
7.4.2.1. Daily Minimum Wage Rate - Non-Agricultural (Establishments with more than 10 workers)	0.20%	275.00	537.00	334.86	39.07	
7.4.2.2. Daily Minimum Wage Rate - Non-Agricultural (Establishments with 10 workers or below)	0.20%	167.00	500.00	316.80	40.15	
7.5. Cost of Land in a Central Business District	8.31%	0.00	500,000.00	5,153.36	19,948.35	investigate 500,000
7.6. Cost of Rent	13.85%	0.00	50,000.00	759.87	2,194.83	investigate 50,000
8.1. Number of Universal/Commercial Banks	8.31%	0.00	718.00	5.32	33.00	reduce/combine banking
8.2. Number of Thrift and Savings Banks	8.25%	0.00	189.00	2.26	9.33	
8.3. Number of Rural Banks	4.22%	0.00	257.00	2.00	7.30	
8.4. Number of Finance Cooperatives	3.43%	0.00	759.00	7.68	28.03	
8.5. Number of Savings and Loans Associations with Quasi-Banking Functions	9.70%	0.00	794.00	3.99	24.84	
8.6. Number of Pawnshops	2.24%	0.00	1,133.00	10.64	41.48	
8.7. Number of Money Changers/Foreign exchange dealers	6.00%	0.00	754.00	8.89	37.24	
8.8. Number of Remittance Centers	3.30%	0.00	1,357.00	11.65	53.75	
8.9. Number of Microfinance Institutions	4.62%	0.00	1,292.00	9.86	41.42	
9.1. Gross Sales of Registered Firms	5.01%	0.00	3,151,572,787,652.00	13,131,889,857.90	115,211,672,495.95	Same as column G, but different mean and standard deviation! Different number of non-numeric values as well...combine?

9.2. Number of declared employees for business RENEWALS	7.72%	0.00	57,987,000.00	71,920.39	1,814,599.80	Given that 58 million is more than half the population of the Philippines, this value is suspect.
10.1. Total number of LGU recognized / registered business groups	10.36%	0.00	4,128.00	28.94	152.91	
10.2. Total Number of Other Business Groups	15.17%	0.00	2,353.00	16.29	86.25	
11.1.1. Presence of CDP	3.56%	0.00	1.00	0.90	0.30	
11.1.2. Year of Last Update	10.55%	0.00	2,019.00	2,008.12	122.27	Year data should be eliminated, or transformed to "years since last update"
12.1. Presence of the Local Investment Incentives Code	4.29%	0.00	1.00	0.81	0.39	
12.2. Presence of the equivalent of an Investment Promotions Unit (Physical Office)	4.09%	0.00	1.00	0.80	0.40	
12.3. Presence of Staff manning the IPU	4.09%	0.00	1.00	0.81	0.39	
12.4. Presence of local executive order or ordinance that mandates the implementation of the LIIC or the setting up of an IPU	4.68%	0.00	1.00	0.82	0.38	
13.1.1. Getting Building Permits - Minutes	4.55%	0.00	47,520.00	782.71	1,782.73	47,520min = 33 days, is this correct?
13.1.2. Getting Building Permits - Steps	5.21%	0.00	3,360.00	6.84	88.55	Check Max Value
13.2.1. Getting Occupancy Permits - Minutes	5.41%	0.00	43,595.00	640.02	1,620.09	Check Max Value
13.2.2. Getting Occupancy Permits - Steps	5.47%	0.00	240.00	3.92	6.58	Check Max Value
14.1. Business Tax collected by the LGU (in Php)	4.82%	0.00	10,426,974,575.94	64,619,833.15	466,347,336.83	Normalize
14.2. Real Property Tax collected by the LGU (in Php)	4.95%	0.00	6,194,836,192.47	48,863,717.39	292,129,069.70	Normalize
14.3. Total Revenues of the LGU (in Php)	8.58%	0.00	22,591,150,488.37	221,212,378.89	1,079,902,181.73	Normalize

15.1.1. Capacity of PUBLIC Health Services - Doctors	1.52%	0.00	3,780.00	16.44	120.70	Normalize, combine doctors and make per 1000 people?
15.1.2. Capacity of PUBLIC Health Services - Nurses	1.72%	0.00	4,551.00	34.75	165.56	Normalize
15.1.3. Capacity of PUBLIC Health Services - Midwives	1.72%	0.00	1,023.00	18.74	41.89	Normalize
15.2.1. Capacity of PRIVATE Health Services - Doctors	7.19%	0.00	12,074.00	64.88	426.17	Normalize
15.2.2. Capacity of PRIVATE Health Services - Nurses	10.88%	0.00	4,955.00	50.12	256.36	Normalize
15.2.3. Capacity of PRIVATE Health Services - Midwives	10.69%	0.00	3,202.00	11.42	95.38	Normalize
16.1.1. PUBLIC secondary education - Number of Teachers	5.94%	0.00	10,862.00	215.27	538.93	Normalize, or combine teachers and make per 1000 students?
16.1.2. PUBLIC secondary education - Number of Students	6.53%	0.00	167,209.00	5,308.09	9,956.27	
16.2.1. PRIVATE secondary education - Number of Teachers	11.41%	0.00	4,876.00	83.38	282.39	
16.2.2. PRIVATE secondary education - Number of Students	11.21%	0.00	116,591.00	1,727.76	5,671.20	
17.1. Number of DILG recognized awards	6.73%	0.00	27.00	1.65	2.42	
17.2.1. Other awards conferred by credible institutions - Regional Awards	10.03%	0.00	33.00	2.52	3.91	
17.2.2. Other awards conferred by credible institutions - National Awards	10.62%	0.00	22.00	1.30	2.15	
17.2.3. Other awards conferred by credible institutions - International Awards	16.09%	0.00	6.00	0.08	0.43	
18.1. BPLS Automation	2.64%	0.00	1.00	0.57	0.50	
18.2.1. Getting Mayor's Permit for NEW business applications - Minutes	2.57%	0.00	7,200.00	394.90	495.74	Make days to bring this variable to units (rather than thousands)
18.2.2. Getting Mayor's Permit for NEW business applications - Steps	2.18%	0.00	1,920.00	4.61	49.90	1920 steps? Need to check

18.3.1. Getting Business RENEWAL Permits- Minutes	2.70%	0.00	14,400.0 0	323.79	583.33	Make days
18.3.2. Getting Business RENEWAL Permits - Steps	2.37%	1.00	120.00	3.20	3.29	120 steps? Check.
19.1. Number of policemen in the Locality	1.32%	6.00	5,236.00	67.82	260.03	convert to number police/1000 residents
20.1. Number of Local citizens with PhilHealth registration	2.90%	1.00	3,048,64 2.00	49,297.4 2	142,098. 76	normalize
21.1. Asphalt (in.)	13.46%	0.00	21,267.0 0	116.15	1,004.58	
21.1.2. Gravel (in.)	9.83%	0.00	65,344.0 0	223.71	2,635.43	
21.1.3. Concrete (in.)	4.62%	0.00	51,757.6 7	285.89	2,606.14	
21.1.4. Unpaved (in.)	10.62%	0.00	44,770.0 0	157.53	1,660.43	
21.1.5. Total Land Area	2.90%	1.76	4,479.77	209.95	251.46	units not specified in File 2
22.1.1. Distance of City/Municipal Hall to Operating Airport (in.)	6.27%	0.00	508.00	67.05	55.45	
22.1.2. Distance of City/Municipal Hall to Land Transport Terminal (in.)	6.07%	0.00	600.00	19.15	47.73	
22.1.3. Distance of City/Municipal Hall to Seaport / Local PUBLIC Wharf	7.19%	0.00	29,133.0 0	72.38	778.77	29,133 seems large....
23.1.1. Average hours of WATER services per day at the Central Business District	7.32%	0.00	24.00	22.33	4.87	
23.1.2. Average hours of ELECTRICITY services per day at the Central Business District	3.36%	4.00	24.00	23.65	2.02	
23.2.1. Percentage of Households with WATER Service	10.42%	0.00	100.00	72.79	30.69	
23.2.2. Percentage of Households with ELECTRICITY Service	6.93%	0.00	100.00	86.29	21.98	
24.1. Buses	12.20%	0.00	12,283.0 0	118.18	627.53	normalize transportation, perhaps combine some or make per 1000 people?

24.2. Passenger Vans	12.86%	0.00	15,926.00	105.84	678.39	
24.3. Jeepneys	7.85%	0.00	24,699.00	292.54	1,520.79	
24.4. Tricycles	5.28%	0.00	48,775.00	994.09	2,637.63	
24.5. Taxis	27.57%	0.00	19,903.00	84.87	865.34	
24.6.1. Ferries - Ship	41.29%	0.00	20,516.00	37.69	767.90	
24.6.2. Ferries - Fast Craft	42.61%	0.00	15,660.00	21.59	535.51	
24.7. Passenger Bancas	33.64%	0.00	2,555.00	23.78	124.57	
24.8.1. Others - Motorized Vehicles	25.07%	0.00	104,015.00	567.26	3,923.25	
24.8.2. Others - Non-Motorized Vehicles	29.29%	0.00	40,200.00	199.84	1,419.31	
25.1.1. Number of PUBLIC secondary SCHOOLS	2.24%	0.00	287.00	6.78	10.82	Only use classrooms, and compute number students/classroom
25.1.2. Number of PUBLIC secondary school CLASSROOMS	5.87%	0.00	3,120.00	137.22	240.59	
25.2.1. Number of PRIVATE secondary SCHOOLS	9.76%	0.00	269.00	5.08	14.87	
25.2.2. Number of PRIVATE secondary school CLASSROOMS	14.38%	0.00	5,254.00	66.16	254.21	
25.3.1.1. PUBLIC Tertiary Schools	51.12%	0.00	72.00	0.82	3.18	
25.3.1.2. PUBLIC Tertiary school Classrooms	53.23%	0.00	1,962.00	30.25	103.12	
25.3.2.1. PRIVATE Tertiary Schools	54.42%	0.00	104.00	2.20	6.92	
25.3.2.2. PRIVATE Tertiary school Classrooms	55.94%	0.00	3,985.00	56.46	232.52	
25.4.1.1. PUBLIC Technical Vocational Education and Training Schools	53.10%	0.00	36.00	0.91	2.39	
25.4.1.2. PUBLIC Technical Vocational Education and Training school Classrooms	54.49%	0.00	550.00	9.18	33.71	
25.4.2.1. PRIVATE Technical Vocational Education and Training Schools	53.83%	0.00	187.00	4.02	15.96	

25.4.2.2. PRIVATE Technical Vocational Education and Training school Classrooms	53.96%	0.00	1,876.00	24.48	116.86	
26.1.1. Number of PUBLIC health - Clinics	4.62%	0.00	935.00	12.04	29.54	use a relative measure such as #beds/1000 residents
26.1.2. Number of PUBLIC health - Total Clinic Beds	7.06%	0.00	699.00	14.60	34.16	
26.1.3. Number of PUBLIC health - Diagnostic Centers	14.25%	0.00	87.00	1.32	4.64	
26.1.4. Number of PUBLIC health - Total Diagnostic Center Beds	17.15%	0.00	250.00	2.72	14.84	
26.1.5. Number of PUBLIC health - Hospitals	14.58%	0.00	59.00	0.69	1.92	
26.1.6. Number of PUBLIC health - Total Hospital Beds	14.91%	0.00	5,874.00	53.64	265.23	
26.2.1. Number of PRIVATE health - Clinics	10.62%	0.00	1,235.00	14.91	63.31	
26.2.2. Number of PRIVATE health - Total Clinic Beds	14.64%	0.00	1,716.00	19.51	91.28	
26.2.3. Number of PRIVATE health - Diagnostic Centers	18.21%	0.00	255.00	2.78	11.42	
26.2.4. Number of PRIVATE health - Total Diagnostic Center Beds	20.12%	0.00	312.00	4.14	19.55	
26.2.5. Number of PRIVATE health - Hospitals	19.13%	0.00	3,309.00	3.70	94.51	
26.2.6. Number of PRIVATE health - Total Hospital Beds	19.85%	0.00	4,725.00	59.02	235.66	
27.1. Total Investment in Infrastructure of LGU	10.29%	0.00	7,193,859,675.00	81,609,350.73	298,395,929.60	normalize or relative measure
27.2. Total LGU Budget	6.00%	73,500.00	23,319,753,825.16	346,512,027.45	1,162,249,488.50	
28.1.1. Hotels	14.58%	0.00	233.00	1.38	8.82	
28.1.2. Resorts	10.95%	0.00	259.00	1.93	8.83	
28.1.3. Tourist Inns	13.39%	0.00	69.00	1.37	5.50	
28.1.4. Apartelles	15.63%	0.00	71.00	0.73	3.87	
28.1.5. Pension House	15.24%	0.00	1,212.00	1.72	33.95	
28.1.6. Others	26.06%	0.00	292.00	1.56	12.99	
28.2.1. Hotel Rooms	15.24%	0.00	13,470.00	75.04	617.75	
28.2.2. Resort Rooms	12.53%	0.00	9,741.00	30.31	296.23	

28.2.3. Tourist Inn Rooms	14.31%	0.00	1,371.00	17.57	89.01	
28.2.4. Apartelle Rooms	16.42%	0.00	2,527.00	9.01	91.75	
28.2.5. Pension House Rooms	16.56%	0.00	1,868.00	9.91	75.32	
28.2.6. Others	27.24%	0.00	4,053.00	10.83	139.98	
29.1. Number of Cable Service Providers	3.30%	0.00	100.00	2.59	3.81	100? Check this
29.2. Number of Internet Service Providers	2.97%	0.00	100.00	3.33	4.30	100? Check
29.3. Number of Telephone Companies / Mobile Service Providers	2.70%	0.00	31.00	3.23	2.06	31? Check
30.1.1. Number of on-site ATMs	8.84%	0.00	885.00	8.61	44.47	
30.1.2. Number of off-site ATMs	8.11%	0.00	1,496.00	6.98	53.57	
31.1. Presence of the CLUP	2.97%	0.00	1.00	0.93	0.25	File 2 specifies INPUT: YES or NO How is this coded? 1 = yes?
31.2. Presence of an office that implements the CLUP (usually the Planning and Development Office)	3.03%	0.00	1.00	0.96	0.20	
31.3. Presence of staff manning the office	3.17%	0.00	2.00	0.96	0.20	
31.4. Presence of local executive order or ordinance that mandates the implementation of the CLUP	3.30%	0.00	2.00	0.93	0.26	
31.5. Year of Last Update	7.52%	1.00	2,019.00	2,012.20	54.06	change to year since last update
32.1. Presence of the DRRMP	2.70%	0.00	1.00	0.98	0.13	with these means being so close to 1, there is very little differentiation possible with these variables....remove from calculations
32.2. Presence of an office that implements the DRRMP	2.70%	0.00	1.00	0.98	0.13	
32.3. Presence of staff manning the office	2.90%	0.00	1.00	0.99	0.12	
32.4. Presence of local executive order or ordinance	3.30%	0.00	1.00	0.98	0.14	

that mandates the implementation of the DRRMP						
32.5. Budget Allocation	6.27%	0.00	1.00	0.98	0.13	
32.6. Year of Last Update	6.40%	2,010.00	2,019.00	2,017.29	1.17	change to year since last update
33.1. Conduct of LGU-wide disaster drill	3.63%	0.00	1.00	0.97	0.18	remove?
33.2. Date of latest LGU-wide disaster drill	17.81%	2,005.00	2,019.00	2,017.91	0.76	change to year since last drill
34.1. Presence of early warning system that integrates professional responders and grassroots organization	3.76%	0.00	1.00	0.97	0.17	remove?
35.1.1. Total Budget for DRRMP	6.60%	4,225.00	24,983,435,368.00	38,041,199.31	670,141,242.08	Wow, more budget than 35.1.2? Check the Max here
35.1.2. Total LGU Budget	5.61%	0.00	23,319,753,825.16	342,295,925.29	1,159,547,786.50	Same data as 27.2, but different statistics
36.1. Availability of local Geohazard Maps from DENR	2.97%	0.00	1.00	0.98	0.15	remove?
36.2. Availability of LGU Risk Profile from DSWD	3.43%	0.00	1.00	0.96	0.20	remove?
37.1.1. Ambulance - Public	2.70%	0.00	255.00	5.06	13.20	combine and have number/1000 residents?
37.1.2. Ambulance - Private	10.95%	0.00	71.00	1.23	4.15	
37.2.1. Firetrucks - Public	2.51%	0.00	158.00	2.47	5.92	combine and have number/1000 residents?
37.2.2. Firetrucks - Private	11.48%	0.00	100.00	0.79	3.78	
37.3.1. Clearing Equipments- Public	7.19%	0.00	270.00	9.21	22.76	combine and have number/1000 residents?
37.3.2. Clearing Equipments - Private	15.44%	0.00	8,902.00	13.64	249.37	
37.4.1. Rubber boats - Public	10.69%	0.00	124.00	1.52	4.77	combine and have number/1000 residents?
37.4.2. Rubber boats - Private	17.02%	0.00	400.00	1.34	14.90	
37.4.3. Other Boats Used for Rescue	12.27%	0.00	1,172.00	9.55	64.04	

37.5.1. Infrastructure for evacuation - Public	5.15%	0.00	506.00	27.23	41.32	
37.5.2. Infrastructure for evacuation - Private	14.64%	0.00	3,937.00	13.15	127.82	
37.6. Presence of drainage systems in LGU Center	3.89%	0.00	2.00	0.96	0.21	Why 2? Shouldn't it be 0 or 1?
38.1.1. Presence of Water Source	3.03%	0.00	2.00	0.99	0.11	
38.1.2. Distance of Water Source	6.27%	0.00	960.00	8.74	50.82	
38.2.2. Presence of Power Source	3.56%	0.00	2.00	0.94	0.23	
38.2.2. Distance of Power Source to LGU	11.02%	0.00	2,723.31	19.75	106.59	I think 2,723 is too far, check this.
38.3.1. Presence of Generator Sets	3.36%	0.00	1.00	0.97	0.18	
38.4.1. Redundancy - Power	11.15%	0.00	1,778.00	3.46	48.98	I think 1,778 is too large, check this.
38.4.2. Redundancy - Water	11.74%	0.00	9,124.00	22.30	312.18	I think 9,124 is too large, check this
38.4.3. Redundancy - Telecom	11.41%	0.00	487.00	5.32	21.53	I think 487 is too large
38.4.4. Alternate Route	15.57%	0.00	328.00	4.76	17.00	
38.4.5. Redundancy - Fuel	14.31%	0.00	601.00	4.86	23.14	
39.1. Number of Trained Responders	6.46%	0.00	17,930.00	263.74	1,061.88	
40.1. Presence of a Sanitary Landfill	4.22%	0.00	2.00	0.62	0.49	Why is a yes/no response having 0, 1, and 2?
40.2. Distance of Landfill to LGU Center	28.56%	0.00	330.00	14.62	27.21	check 330
40.3. Frequency of Garbage Collection per Month	5.80%	0.00	3,772.00	64.58	237.71	check how these numbers are computed. 3772?
40.4. Practice of Waste Segregation	2.90%	0.00	1.00	0.95	0.22	
40.5. Presence of Recycling/ Material Recovery Facility	3.30%	0.00	1.00	0.95	0.23	

Indicators	Percent non-numeric entries:	minimum of indicator	maximum of indicator	average of indicator	standard deviation of indicator	Items/values to check:
1.1. Gross Sales of Registered Firms	0	₱3,500,000.00	₱129,161,310,238.53	₱5,980,018,252.38	₱20,653,568,616.64	
1.2. Total Capitalization of NEW Businesses	0	₱145,000.00	₱1,775,469,979.00	₱100,132,055.14	₱289,730,681.89	
2.1. Growth of the Local Economy: Gross Sales of Registered Firms	0	-1	321.61	9.8976	48.63309491	321.61
2.2. Growth of the Local Economy: Total Capitalization of NEW Businesses	0	-0.8	17.57	0.8688	3.048342902	17.57
3.1.1. Number of approved business permits for NEW business applications	0	6	1322	204.84	248.0559812	
3.1.2. Number of approved business RENEWALS	0	23	2528	743.66	637.3551091	
4.1. Number of Occupancy Permits Approved	0	0	810	134.56	197.7219404	
4.2. Number of approved fire safety inspection	0	10	4546	734.88	795.8726603	
5.1. Number of declared employees for NEW business applications	0	0	2220	303.64	456.9503059	
5.2. Number of declared employees for business RENEWALS	0	0	27116	2486.9	4421.787921	
6.1. Local Inflation Rate	0	5.8	6	5.924	0.09806287	
7.1.1. Cost of Electricity-Commercial Users	0	7.54	20	10.5082	1.998511375	
7.1.2. Cost of Electricity-Industrial Firms/Customers	0	7.54	49	11.302	5.792885151	
7.2.1. Cost of Water-Commercial Users	0	3	180	23.0598	25.28586905	
7.2.2. Cost of Water- Industrial Firms/Customers	0	2	100	20.4054	15.41308114	
7.3. Price of Diesel as of December 31 per year	0	34.9	37.75	37.636	0.564153692	

7.4.1.1. Daily Minimum Wage Rate - Agricultural (Plantation)	0	313	316	313.36	0.984782 168	
7.4.1.2. Daily Minimum Wage Rate - Agricultural (Non-Plantation)	0	313	348	324	12.76154 939	
7.4.2.1. Daily Minimum Wage Rate - Non-Agricultural (Establishments with more than 10 workers)	0	348	386	356.36	15.90117 439	
7.4.2.2. Daily Minimum Wage Rate - Non-Agricultural (Establishments with 10 workers or below)	0	343	378	349.8	13.74550 019	
7.5. Cost of Land in a Central Business District	0	120	35000	3863.5	5705.787 185	
7.6. Cost of Rent	0	100	7500	745.8066	1290.132 501	
8.1. Number of Universal/Commercial Banks	0	0	33	1.76	4.975696 034	
8.2. Number of Thrift and Savings Banks	0	0	3	0.84	1.075895 451	
8.3. Number of Rural Banks	0	0	14	1.82	2.553029 413	
8.4. Number of Finance Cooperatives	0	0	98	6.96	14.42214 85	
8.5. Number of Savings and Loans Associations with Quasi-Banking Functions	0	0	120	6.36	17.75083 786	
8.6. Number of Pawnshops	0	0	90	10.88	14.61427 873	
8.7. Number of Money Changers/Foreign exchange dealers	0	0	60	8.2	10	
8.8. Number of Remittance Centers	0	0	65	8.8	11.48024 034	
8.9. Number of Microfinance Institutions	0	0	47	8.8	9.950899 867	
9.1. Gross Sales of Registered Firms	0	3500000	1.29161E +11	5980018 252	2065356 8617	
9.2. Number of declared employees for business RENEWALS	0	0	27116	2487.88	4421.297 167	

10.1. Total number of LGU recognized / registered business groups	0	0	98	7.94	15.84286 358	
10.2. Total Number of Other Business Groups	0	0	60	3.86	10.37266 817	
11.1.1. Presence of CDP	0	1	1	1	0	remove indicator
11.1.2. Year of Last Update	0	1984	2018	2014.42	6.224015 372	
12.1. Presence of the Local Investment Incentives Code	0	1	1	1	0	remove indicator
12.2. Presence of the equivalent of an Investment Promotions Unit (Physical Office)	0	1	1	1	0	remove indicator
12.3. Presence of Staff manning the IPU	0	1	1	1	0	remove indicator
12.4. Presence of local executive order or ordinance that mandates the implementation of the LIIC or the setting up of an IPU	0	1	1	1	0	remove indicator
13.1.1. Getting Building Permits - Minutes	0	10	14400	1797.02	2720.397 199	
13.1.2. Getting Building Permits - Steps	0	1	9	4.48	1.644285 094	
13.2.1. Getting Occupancy Permits - Minutes	0	2	14400	1363.82	2261.634 976	
13.2.2. Getting Occupancy Permits - Steps	0	1	10	3.92	1.914925 266	
14.1. Business Tax collected by the LGU (in Php)	0	246635.4 7	5209531 58.1	2595415 1.7	7641950 9.72	
14.2. Real Property Tax collected by the LGU (in Php)	0	303186.7 4	2557060 64.6	1878494 7.17	4866348 8.24	
14.3. Total Revenues of the LGU (in Php)	0	2186131. 43	6539641 16.9	1203201 90.9	1567116 21.5	
15.1.1. Capacity of PUBLIC Health Services - Doctors	0	1	67	6.28	11.59528 405	
15.1.2. Capacity of PUBLIC Health Services - Nurses	0	1	112	18.04	19.02625 469	
15.1.3. Capacity of PUBLIC Health Services - Midwives	0	1	53	13.76	9.713361 301	
15.2.1. Capacity of PRIVATE Health Services - Doctors	0	0	220	14.12	39.47959 432	

15.2.2. Capacity of PRIVATE Health Services - Nurses	0	0	104	8.72	19.69568 481	
15.2.3. Capacity of PRIVATE Health Services - Midwives	0	0	40	4.22	7.519471 323	
16.1.1. PUBLIC secondary education - Number of Teachers	0	12	839	192.26	182.6895 225	
16.1.2. PUBLIC secondary education - Number of Students	0	843	17063	5206.78	3920.950 516	
16.2.1. PRIVATE secondary education - Number of Teachers	0	0	411	48.86	73.13030 305	
16.2.2. PRIVATE secondary education - Number of Students	0	0	7581	1057.46	1421.959 229	
17.1. Number of DILG recognized awards	0	0	5	1.5	1.343920 552	
17.2.1. Other awards conferred by credible institutions - Regional Awards	0	0	27	2.5	4.625792 817	
17.2.2. Other awards conferred by credible institutions - National Awards	0	0	3	0.66	0.939170 281	
17.2.3. Other awards conferred by credible institutions - International Awards	0	0	1	0.04	0.197948 664	
18.1. BPLS Automation	0	0	1	0.68	0.471212 071	
18.2.1. Getting Mayor's Permit for NEW business applications - Minutes	0	1	2400	558.3	508.1815 62	
18.2.2. Getting Mayor's Permit for NEW business applications - Steps	0	2	6	3.46	0.952119 012	
18.3.1. Getting Business RENEWAL Permits- Minutes	0	1	2400	480.5	477.4145 612	
18.3.2. Getting Business RENEWAL Permits - Steps	0	1	6	3.24	1.170382 808	
19.1. Number of policemen in the Locality	0	20	223	34.26	31.53605 646	
20.1. Number of Local citizens with PhilHealth registration	0	1662	195306	52726.38	40886.15 669	

21.1. Asphalt (in.)	0	0	83.66	15.1122	18.35841 989	
21.1.2. Gravel (in.)	0	0	277.34	46.0098	62.69361 366	
21.1.3. Concrete (in.)	0	1.27	104.9	38.9566	23.55953 922	
21.1.4. Unpaved (in.)	0	0	193.85	36.0158	38.93954 436	
21.1.5. Total Land Area	0	11.89	891.01	121.9776	137.3270 349	
22.1.1. Distance of City/Municipal Hall to Operating Airport (in.)	0	3	274	75.2784	58.52489 913	
22.1.2. Distance of City/Municipal Hall to Land Transport Terminal (in.)	0	0	200	34.3442	47.29414 526	
22.1.3. Distance of City/Municipal Hall to Seaport / Local PUBLIC Wharf	0	0	150	18.6812	26.97313 476	
23.1.1. Average hours of WATER services per day at the Central Business District	0	18	24	23.88	0.848528 137	
23.1.2. Average hours of ELECTRICITY services per day at the Central Business District	0	24	24	24	0	
23.2.1. Percentage of Households with WATER Service	0	35	100	82.7444	17.51218 551	
23.2.2. Percentage of Households with ELECTRICITY Service	0	25	100	91.1216	11.27249 775	
24.1. Buses	0	0	9125	279.04	1285.328 767	
24.2. Passenger Vans	0	0	7300	195.32	1031.483 703	
24.3. Jeepneys	0	0	3700	183.66	573.4552 848	
24.4. Tricycles	0	7	18250	700.24	2581.660 726	
24.5. Taxis	0	0	5475	124.02	775.5182 991	
24.6.1. Ferries - Ship	0	0	1825	37.7	257.9323 792	
24.6.2. Ferries - Fast Craft	0	0	1825	36.94	258.0353 092	

24.7. Passenger Bancas	0	0	1825	52.62	260.3084 426	
24.8.1. Others - Motorized Vehicles	0	0	3408	325.74	585.4008 851	
24.8.2. Others - Non-Motorized Vehicles	0	0	40200	918.02	5672.399 803	
25.1.1. Number of PUBLIC secondary SCHOOLS	0	1	22	7.24	5.008401 105	
25.1.2. Number of PUBLIC secondary school CLASSROOMS	0	16	1818	169.08	267.2154 859	
25.2.1. Number of PRIVATE secondary SCHOOLS	0	0	14	3.12	3.520435 966	
25.2.2. Number of PRIVATE secondary school CLASSROOMS	0	0	306	40.78	56.66380 985	
25.3.1.1. PUBLIC Tertiary Schools	0	0	16	0.8	2.258769 757	
25.3.1.2. PUBLIC Tertiary school Classrooms	0	0	192	15.82	31.29236 068	
25.3.2.1. PRIVATE Tertiary Schools	0	0	5	0.42	1.011969 186	
25.3.2.2. PRIVATE Tertiary school Classrooms	0	0	90	6.18	16.46603 183	
25.4.1.1. PUBLIC Technical Vocational Education and Training Schools	0	0	2	0.34	0.557325 977	
25.4.1.2. PUBLIC Technical Vocational Education and Training school Classrooms	0	0	59	2.78	8.892303 482	
25.4.2.1. PRIVATE Technical Vocational Education and Training Schools	0	0	3	0.22	0.648074 07	
25.4.2.2. PRIVATE Technical Vocational Education and Training school Classrooms	0	0	10	0.58	1.785314 241	
26.1.1. Number of PUBLIC health - Clinics	0	0	45	10.84	11.13435 573	
26.1.2. Number of PUBLIC health - Total Clinic Beds	0	0	100	15.3	17.58971 174	
26.1.3. Number of PUBLIC health - Diagnostic Centers	0	0	3	0.66	0.798212 288	
26.1.4. Number of PUBLIC health - Total Diagnostic Center Beds	0	0	50	1.6	7.096995 628	

26.1.5. Number of PUBLIC health - Hospitals	0	0	2	0.4	0.534522 484	
26.1.6. Number of PUBLIC health - Total Hospital Beds	0	0	184	17.78	35.42873 848	
26.2.1. Number of PRIVATE health - Clinics	0	0	35	4.96	7.488658 091	
26.2.2. Number of PRIVATE health - Total Clinic Beds	0	0	154	9.18	23.30778 096	
26.2.3. Number of PRIVATE health - Diagnostic Centers	0	0	9	1.04	1.772349 991	
26.2.4. Number of PRIVATE health - Total Diagnostic Center Beds	0	0	50	1.76	7.112966 028	
26.2.5. Number of PRIVATE health - Hospitals	0	0	2	0.32	0.586932 531	
26.2.6. Number of PRIVATE health - Total Hospital Beds	0	0	155	11.12	31.17929 716	
27.1. Total Investment in Infrastructure of LGU	0	8059534	3885696 98.8	5000150 7.52	7156995 4.65	
27.2. Total LGU Budget	0	1666345 1.8	8231397 97	2086301 65.1	1870321 79.7	
28.1.1. Hotels	0	0	4	0.36	0.802038 22	
28.1.2. Resorts	0	0	44	3.54	7.298895 639	
28.1.3. Tourist Inns	0	0	17	1.52	3.604079 321	
28.1.4. Apartelles	0	0	6	0.72	1.414790 675	
28.1.5. Pension House	0	0	12	1.22	2.332468 256	
28.1.6. Others	0	0	0	0	0	remove indicator
28.2.1. Hotel Rooms	0	0	980	23.1	138.4403 283	
28.2.2. Resort Rooms	0	0	1250	53.72	195.9172 087	
28.2.3. Tourist Inn Rooms	0	0	65	4.86	10.96936 364	
28.2.4. Apartelle Rooms	0	0	47	3.56	8.308245 228	
28.2.5. Pension House Rooms	0	0	58	5.94	11.40248 809	
28.2.6. Others	0	0	0	0	0	remove indicator

29.1. Number of Cable Service Providers	0	0	7	2.88	1.573245 703	
29.2. Number of Internet Service Providers	0	0	8	2.8	1.714285 714	
29.3. Number of Telephone Companies / Mobile Service Providers	0	0	7	3.24	1.672832 134	
30.1.1. Number of on-site ATMs	0	0	25	3.48	5.636035 66	
30.1.2. Number of off-site ATMs	0	0	18	3.02	3.139543 708	
31.1. Presence of the CLUP	0	1	1	1	0	remove indicator
31.2. Presence of an office that implements the CLUP (usually the Planning and Development Office)	0	1	1	1	0	remove indicator
31.3. Presence of staff manning the office	0	1	1	1	0	remove indicator
31.4. Presence of local executive order or ordinance that mandates the implementation of the CLUP	0	1	1	1	0	remove indicator
31.5. Year of Last Update	0	1983	2019	2011.08	8.270527 955	
32.1. Presence of the DRRMP	0	1	1	1	0	remove indicator
32.2. Presence of an office that implements the DRRMP	0	1	1	1	0	remove indicator
32.3. Presence of staff manning the office	0	1	1	1	0	remove indicator
32.4. Presence of local executive order or ordinance that mandates the implementation of the DRRMP	0	1	1	1	0	remove indicator
32.5. Budget Allocation	0	1	1	1	0	remove indicator
32.6. Year of Last Update	0	2015	2018	2017.14	0.833238 09	
33.1. Conduct of LGU-wide disaster drill	0	1	1	1	0	remove indicator
33.2. Date of latest LGU-wide disaster drill	0	2015	2019	2017.6	0.808122 036	

34.1. Presence of early warning system that integrates professional responders and grassroots organization	0	1	1	1	0	remove indicator
35.1.1. Total Budget for DRRMP	0	2897500	5100000 0	1121299 1.89	1095498 9.29	
35.1.2. Total LGU Budget	0	1128823 5	8718245 00	2110155 35	2075304 66.3	
36.1. Availability of local Geohazard Maps from DENR	0	1	1	1	0	remove indicator
36.2. Availability of LGU Risk Profile from DSWD	0	1	1	1	0	remove indicator
37.1.1. Ambulance - Public	0	1	40	5.3	5.810792 211	
37.1.2. Ambulance - Private	0	0	10	0.96	1.783827 575	
37.2.1. Firetrucks - Public	0	0	6	1.98	1.332329 554	
37.2.2. Firetrucks - Private	0	0	9	0.6	1.538618 516	
37.3.1. Clearing Equipments- Public	0	0	35	4.12	5.913112 375	
37.3.2. Clearing Equipments - Private	0	0	68	4.76	10.46580 438	
37.4.1. Rubber boats - Public	0	0	5	0.76	1.333401 359	
37.4.2. Rubber boats - Private	0	0	25	1.3	3.807886 553	
37.4.3. Other Boats Used for Rescue	0	0	212	9.94	32.37749 912	212
37.5.1. Infrastructure for evacuation - Public	0	0	155	32.12	35.62138 775	155
37.5.2. Infrastructure for evacuation - Private	0	0	850	31.14	129.1327 445	850
37.6. Presence of drainage systems in LGU Center	0	1	1	1	0	remove indicator
38.1.1. Presence of Water Source	0	1	1	1	0	remove indicator
38.1.2. Distance of Water Source	0	0.01	500	13.3462	70.36387 985	500
38.2.2. Presence of Power Source	0	1	1	1	0	remove indicator
38.2.2. Distance of Power Source to LGU	0	0	67.5	8.9002	12.72343 338	

38.3.1. Presence of Generator Sets	0	1	1	1	0	remove indicator
38.4.1. Redundancy - Power	0	0	40	2.64	5.958221896	
38.4.2. Redundancy - Water	0	0	35	5.5	7.332482944	
38.4.3. Redundancy - Telecom	0	0	150	11.18	29.85180403	150
38.4.4. Alternate Route	0	0	328	9.68	46.16140273	328
38.4.5. Redundancy - Fuel	0	0	20	3.42	4.549456124	
39.1. Number of Trained Responders	0	1	7865	223.74	1109.283163	7865
40.1. Presence of a Sanitary Landfill	0	0	1	0.72	0.453557368	
40.2. Distance of Landfill to LGU Center	0	0	36	3.8312	6.559569311	
40.3. Frequency of Garbage Collection per Month	0	4	90	32	14.13924918	90
40.4. Practice of Waste Segregation	0	1	1	1	0	remove indicator
40.5. Presence of Recycling/ Material Recovery Facility	0	1	1	1	0	remove indicator

II. 2018 Data Cebu Cluster

Indicators	Numeric Vaues	NDA Values	Blanks	"-" Entries	N/A Values:	NA entries:	Not Required Values:
1.1. Gross Sales of Registered Firms	50	-	-	-	-	-	-
1.2. Total Capitalization of NEW Businesses	50	-	-	-	-	-	-
2.1. Growth of the Local Economy: Gross Sales of Registered Firms	50	-	-	-	-	-	-
2.2. Growth of the Local Economy: Total Capitalization of NEW Businesses	50	-	-	-	-	-	-
3.1.1. Number of approved business permits for NEW business applications	50	-	-	-	-	-	-
3.1.2. Number of approved business RENEWALS	50	-	-	-	-	-	-
4.1. Number of Occupancy Permits Approved	50	-	-	-	-	-	-
4.2. Number of approved fire safety inspection	50	-	-	-	-	-	-
5.1. Number of declared employees for NEW business applications	50	-	-	-	-	-	-
5.2. Number of declared employees for business RENEWALS	50	-	-	-	-	-	-
6.1. Local Inflation Rate	50	-	-	-	-	-	-
7.1.1. Cost of Electricity- Commercial Users	50	-	-	-	-	-	-
7.1.2. Cost of Electricity- Industrial Firms/Customers	50	-	-	-	-	-	-
7.2.1. Cost of Water- Commercial Users	50	-	-	-	-	-	-
7.2.2. Cost of Water- Industrial Firms/Customers	50	-	-	-	-	-	-
7.3. Price of Diesel as of December 31 per year	50	-	-	-	-	-	-
7.4.1.1. Daily Minimum Wage Rate - Agricultural (Plantation)	50	-	-	-	-	-	-

7.4.1.2. Daily Minimum Wage Rate - Agricultural (Non-Plantation)	50	-	-	-	-	-	-
7.4.2.1. Daily Minimum Wage Rate - Non-Agricultural (Establishments with more than 10 workers)	50	-	-	-	-	-	-
7.4.2.2. Daily Minimum Wage Rate - Non-Agricultural (Establishments with 10 workers or below)	50	-	-	-	-	-	-
7.5. Cost of Land in a Central Business District	50	-	-	-	-	-	-
7.6. Cost of Rent	50	-	-	-	-	-	-
8.1. Number of Universal/Commercial Banks	50	-	-	-	-	-	-
8.2. Number of Thrift and Savings Banks	50	-	-	-	-	-	-
8.3. Number of Rural Banks	50	-	-	-	-	-	-
8.4. Number of Finance Cooperatives	50	-	-	-	-	-	-
8.5. Number of Savings and Loans Associations with Quasi-Banking Functions	50	-	-	-	-	-	-
8.6. Number of Pawnshops	50	-	-	-	-	-	-
8.7. Number of Money Changers/Foreign exchange dealers	50	-	-	-	-	-	-
8.8. Number of Remittance Centers	50	-	-	-	-	-	-
8.9. Number of Microfinance Institutions	50	-	-	-	-	-	-
9.1. Gross Sales of Registered Firms	50	-	-	-	-	-	-
9.2. Number of declared employees for business RENEWALS	50	-	-	-	-	-	-
10.1. Total number of LGU recognized / registered business groups	50	-	-	-	-	-	-
10.2. Total Number of Other Business Groups	50	-	-	-	-	-	-
11.1.1. Presence of CDP	50	-	-	-	-	-	-
11.1.2. Year of Last Update	50	-	-	-	-	-	-

12.1. Presence of the Local Investment Incentives Code	50	-	-	-	-	-	-
12.2. Presence of the equivalent of an Investment Promotions Unit (Physical Office)	50	-	-	-	-	-	-
12.3. Presence of Staff manning the IPU	50	-	-	-	-	-	-
12.4. Presence of local executive order or ordinance that mandates the implementation of the LIIC or the setting up of an IPU	50	-	-	-	-	-	-
13.1.1. Getting Building Permits - Minutes	50	-	-	-	-	-	-
13.1.2. Getting Building Permits - Steps	50	-	-	-	-	-	-
13.2.1. Getting Occupancy Permits - Minutes	50	-	-	-	-	-	-
13.2.2. Getting Occupancy Permits - Steps	50	-	-	-	-	-	-
14.1. Business Tax collected by the LGU (in Php)	50	-	-	-	-	-	-
14.2. Real Property Tax collected by the LGU (in Php)	50	-	-	-	-	-	-
14.3. Total Revenues of the LGU (in Php)	50	-	-	-	-	-	-
15.1.1. Capacity of PUBLIC Health Services - Doctors	50	-	-	-	-	-	-
15.1.2. Capacity of PUBLIC Health Services - Nurses	50	-	-	-	-	-	-
15.1.3. Capacity of PUBLIC Health Services - Midwives	50	-	-	-	-	-	-
15.2.1. Capacity of PRIVATE Health Services - Doctors	50	-	-	-	-	-	-
15.2.2. Capacity of PRIVATE Health Services - Nurses	50	-	-	-	-	-	-
15.2.3. Capacity of PRIVATE Health Services - Midwives	50	-	-	-	-	-	-
16.1.1. PUBLIC secondary education - Number of Teachers	50	-	-	-	-	-	-
16.1.2. PUBLIC secondary education - Number of Students	50	-	-	-	-	-	-

16.2.1. PRIVATE secondary education - Number of Teachers	50	-	-	-	-	-	-
16.2.2. PRIVATE secondary education - Number of Students	50	-	-	-	-	-	-
17.1. Number of DILG recognized awards	50	-	-	-	-	-	-
17.2.1. Other awards conferred by credible institutions - Regional Awards	50	-	-	-	-	-	-
17.2.2. Other awards conferred by credible institutions - National Awards	50	-	-	-	-	-	-
17.2.3. Other awards conferred by credible institutions - International Awards	50	-	-	-	-	-	-
18.1. BPLS Automation	50	-	-	-	-	-	-
18.2.1. Getting Mayor's Permit for NEW business applications - Minutes	50	-	-	-	-	-	-
18.2.2. Getting Mayor's Permit for NEW business applications - Steps	50	-	-	-	-	-	-
18.3.1. Getting Business RENEWAL Permits- Minutes	50	-	-	-	-	-	-
18.3.2. Getting Business RENEWAL Permits - Steps	50	-	-	-	-	-	-
19.1. Number of policemen in the Locality	50	-	-	-	-	-	-
20.1. Number of Local citizens with PhilHealth registration	50	-	-	-	-	-	-
21.1. Asphalt (in.)	50	-	-	-	-	-	-
21.1.2. Gravel (in.)	50	-	-	-	-	-	-
21.1.3. Concrete (in.)	50	-	-	-	-	-	-
21.1.4. Unpaved (in.)	50	-	-	-	-	-	-
21.1.5. Total Land Area	50	-	-	-	-	-	-
22.1.1. Distance of City/Municipal Hall to Operating Airport (in.)	50	-	-	-	-	-	-
22.1.2. Distance of City/Municipal Hall to Land Transport Terminal (in.)	50	-	-	-	-	-	-

22.1.3. Distance of City/Municipal Hall to Seaport / Local PUBLIC Wharf	50	-	-	-	-	-	-
23.1.1. Average hours of WATER services per day at the Central Business District	50	-	-	-	-	-	-
23.1.2. Average hours of ELECTRICITY services per day at the Central Business District	50	-	-	-	-	-	-
23.2.1. Percentage of Households with WATER Service	50	-	-	-	-	-	-
23.2.2. Percentage of Households with ELECTRICITY Service	50	-	-	-	-	-	-
24.1. Buses	50	-	-	-	-	-	-
24.2. Passenger Vans	50	-	-	-	-	-	-
24.3. Jeepneys	50	-	-	-	-	-	-
24.4. Tricycles	50	-	-	-	-	-	-
24.5. Taxis	50	-	-	-	-	-	-
24.6.1. Ferries - Ship	50	-	-	-	-	-	-
24.6.2. Ferries - Fast Craft	50	-	-	-	-	-	-
24.7. Passenger Bancas	50	-	-	-	-	-	-
24.8.1. Others - Motorized Vehicles	50	-	-	-	-	-	-
24.8.2. Others - Non-Motorized Vehicles	50	-	-	-	-	-	-
25.1.1. Number of PUBLIC secondary SCHOOLS	50	-	-	-	-	-	-
25.1.2. Number of PUBLIC secondary school CLASSROOMS	50	-	-	-	-	-	-
25.2.1. Number of PRIVATE secondary SCHOOLS	50	-	-	-	-	-	-
25.2.2. Number of PRIVATE secondary school CLASSROOMS	50	-	-	-	-	-	-
25.3.1.1. PUBLIC Tertiary Schools	50	-	-	-	-	-	-
25.3.1.2. PUBLIC Tertiary school Classrooms	50	-	-	-	-	-	-
25.3.2.1. PRIVATE Tertiary Schools	50	-	-	-	-	-	-

25.3.2.2. PRIVATE Tertiary school Classrooms	50	-	-	-	-	-	-
25.4.1.1. PUBLIC Technical Vocational Education and Training Schools	50	-	-	-	-	-	-
25.4.1.2. PUBLIC Technical Vocational Education and Training school Classrooms	50	-	-	-	-	-	-
25.4.2.1. PRIVATE Technical Vocational Education and Training Schools	50	-	-	-	-	-	-
25.4.2.2. PRIVATE Technical Vocational Education and Training school Classrooms	50	-	-	-	-	-	-
26.1.1. Number of PUBLIC health - Clinics	50	-	-	-	-	-	-
26.1.2. Number of PUBLIC health - Total Clinic Beds	50	-	-	-	-	-	-
26.1.3. Number of PUBLIC health - Diagnostic Centers	50	-	-	-	-	-	-
26.1.4. Number of PUBLIC health - Total Diagnostic Center Beds	50	-	-	-	-	-	-
26.1.5. Number of PUBLIC health - Hospitals	50	-	-	-	-	-	-
26.1.6. Number of PUBLIC health - Total Hospital Beds	50	-	-	-	-	-	-
26.2.1. Number of PRIVATE health - Clinics	50	-	-	-	-	-	-
26.2.2. Number of PRIVATE health - Total Clinic Beds	50	-	-	-	-	-	-
26.2.3. Number of PRIVATE health - Diagnostic Centers	50	-	-	-	-	-	-
26.2.4. Number of PRIVATE health - Total Diagnostic Center Beds	50	-	-	-	-	-	-
26.2.5. Number of PRIVATE health - Hospitals	50	-	-	-	-	-	-
26.2.6. Number of PRIVATE health - Total Hospital Beds	50	-	-	-	-	-	-
27.1. Total Investment in Infrastructure of LGU	50	-	-	-	-	-	-
27.2. Total LGU Budget	50	-	-	-	-	-	-
28.1.1. Hotels	50	-	-	-	-	-	-

28.1.2. Resorts	50	-	-	-	-	-	-
28.1.3. Tourist Inns	50	-	-	-	-	-	-
28.1.4. Apartelles	50	-	-	-	-	-	-
28.1.5. Pension House	50	-	-	-	-	-	-
28.1.6. Others	50	-	-	-	-	-	-
28.2.1. Hotel Rooms	50	-	-	-	-	-	-
28.2.2. Resort Rooms	50	-	-	-	-	-	-
28.2.3. Tourist Inn Rooms	50	-	-	-	-	-	-
28.2.4. Apartelle Rooms	50	-	-	-	-	-	-
28.2.5. Pension House Rooms	50	-	-	-	-	-	-
28.2.6. Others	50	-	-	-	-	-	-
29.1. Number of Cable Service Providers	50	-	-	-	-	-	-
29.2. Number of Internet Service Providers	50	-	-	-	-	-	-
29.3. Number of Telephone Companies / Mobile Service Providers	50	-	-	-	-	-	-
30.1.1. Number of on-site ATMs	50	-	-	-	-	-	-
30.1.2. Number of off-site ATMs	50	-	-	-	-	-	-
31.1. Presence of the CLUP	50	-	-	-	-	-	-
31.2. Presence of an office that implements the CLUP (usually the Planning and Development Office)	50	-	-	-	-	-	-
31.3. Presence of staff manning the office	50	-	-	-	-	-	-
31.4. Presence of local executive order or ordinance that mandates the implementation of the CLUP	50	-	-	-	-	-	-
31.5. Year of Last Update	50	-	-	-	-	-	-
32.1. Presence of the DRRMP	50	-	-	-	-	-	-
32.2. Presence of an office that implements the DRRMP	50	-	-	-	-	-	-
32.3. Presence of staff manning the office	50	-	-	-	-	-	-
32.4. Presence of local executive order or ordinance that mandates the implementation of the DRRMP	50	-	-	-	-	-	-

32.5. Budget Allocation	50	-	-	-	-	-	-
32.6. Year of Last Update	50	-	-	-	-	-	-
33.1. Conduct of LGU-wide disaster drill	50	-	-	-	-	-	-
33.2. Date of latest LGU-wide disaster drill	50	-	-	-	-	-	-
34.1. Presence of early warning system that integrates professional responders and grassroots organization	50	-	-	-	-	-	-
35.1.1. Total Budget for DRRMP	50	-	-	-	-	-	-
35.1.2. Total LGU Budget	50	-	-	-	-	-	-
36.1. Availability of local Geohazard Maps from DENR	50	-	-	-	-	-	-
36.2. Availability of LGU Risk Profile from DSWD	50	-	-	-	-	-	-
37.1.1. Ambulance - Public	50	-	-	-	-	-	-
37.1.2. Ambulance - Private	50	-	-	-	-	-	-
37.2.1. Firetrucks - Public	50	-	-	-	-	-	-
37.2.2. Firetrucks - Private	50	-	-	-	-	-	-
37.3.1. Clearing Equipments- Public	50	-	-	-	-	-	-
37.3.2. Clearing Equipments - Private	50	-	-	-	-	-	-
37.4.1. Rubber boats - Public	50	-	-	-	-	-	-
37.4.2. Rubber boats - Private	50	-	-	-	-	-	-
37.4.3. Other Boats Used for Rescue	50	-	-	-	-	-	-
37.5.1. Infrastructure for evacuation - Public	50	-	-	-	-	-	-
37.5.2. Infrastructure for evacuation - Private	50	-	-	-	-	-	-
37.6. Presence of drainage systems in LGU Center	50	-	-	-	-	-	-
38.1.1. Presence of Water Source	50	-	-	-	-	-	-
38.1.2. Distance of Water Source	50	-	-	-	-	-	-
38.2.2. Presence of Power Source	50	-	-	-	-	-	-

38.2.2. Distance of Power Source to LGU	50	-	-	-	-	-	-
38.3.1. Presence of Generator Sets	50	-	-	-	-	-	-
38.4.1. Redundancy - Power	50	-	-	-	-	-	-
38.4.2. Redundancy - Water	50	-	-	-	-	-	-
38.4.3. Redundancy - Telecom	50	-	-	-	-	-	-
38.4.4. Alternate Route	50	-	-	-	-	-	-
38.4.5. Redundancy - Fuel	50	-	-	-	-	-	-
39.1. Number of Trained Responders	50	-	-	-	-	-	-
40.1. Presence of a Sanitary Landfill	50	-	-	-	-	-	-
40.2. Distance of Landfill to LGU Center	50	-	-	-	-	-	-
40.3. Frequency of Garbage Collection per Month	50	-	-	-	-	-	-
40.4. Practice of Waste Segregation	50	-	-	-	-	-	-
40.5. Presence of Recycling/ Material Recovery Facility	50	-	-	-	-	-	-

Indicators	Percent non-numeric entries:	minimum of indicator	maximum of indicator	average of indicator	standard deviation of indicator	Items/values to check:
1.1. Gross Sales of Registered Firms	0	₱3,500,000.00	₱129,161,310,238.53	₱5,980,018,252.38	₱20,653,568,616.64	
1.2. Total Capitalization of NEW Businesses	0	₱145,000.00	₱1,775,469,979.00	₱100,132,055.14	₱289,730,681.89	
2.1. Growth of the Local Economy: Gross Sales of Registered Firms	0	-1	321.61	9.8976	48.63309491	321.61
2.2. Growth of the Local Economy: Total Capitalization of NEW Businesses	0	-0.8	17.57	0.8688	3.048342902	17.57
3.1.1. Number of approved business permits for NEW business applications	0	6	1322	204.84	248.0559812	
3.1.2. Number of approved business RENEWALS	0	23	2528	743.66	637.3551091	
4.1. Number of Occupancy Permits Approved	0	0	810	134.56	197.7219404	
4.2. Number of approved fire safety inspection	0	10	4546	734.88	795.8726603	
5.1. Number of declared employees for NEW business applications	0	0	2220	303.64	456.9503059	
5.2. Number of declared employees for business RENEWALS	0	0	27116	2486.9	4421.787921	
6.1. Local Inflation Rate	0	5.8	6	5.924	0.09806287	
7.1.1. Cost of Electricity-Commercial Users	0	7.54	20	10.5082	1.998511375	
7.1.2. Cost of Electricity-Industrial Firms/Customers	0	7.54	49	11.302	5.792885151	
7.2.1. Cost of Water-Commercial Users	0	3	180	23.0598	25.28586905	
7.2.2. Cost of Water- Industrial Firms/Customers	0	2	100	20.4054	15.41308114	
7.3. Price of Diesel as of December 31 per year	0	34.9	37.75	37.636	0.564153692	

7.4.1.1. Daily Minimum Wage Rate - Agricultural (Plantation)	0	313	316	313.36	0.984782 168	
7.4.1.2. Daily Minimum Wage Rate - Agricultural (Non-Plantation)	0	313	348	324	12.76154 939	
7.4.2.1. Daily Minimum Wage Rate - Non-Agricultural (Establishments with more than 10 workers)	0	348	386	356.36	15.90117 439	
7.4.2.2. Daily Minimum Wage Rate - Non-Agricultural (Establishments with 10 workers or below)	0	343	378	349.8	13.74550 019	
7.5. Cost of Land in a Central Business District	0	120	35000	3863.5	5705.787 185	
7.6. Cost of Rent	0	100	7500	745.8066	1290.132 501	
8.1. Number of Universal/Commercial Banks	0	0	33	1.76	4.975696 034	
8.2. Number of Thrift and Savings Banks	0	0	3	0.84	1.075895 451	
8.3. Number of Rural Banks	0	0	14	1.82	2.553029 413	
8.4. Number of Finance Cooperatives	0	0	98	6.96	14.42214 85	
8.5. Number of Savings and Loans Associations with Quasi-Banking Functions	0	0	120	6.36	17.75083 786	
8.6. Number of Pawnshops	0	0	90	10.88	14.61427 873	
8.7. Number of Money Changers/Foreign exchange dealers	0	0	60	8.2	10	
8.8. Number of Remittance Centers	0	0	65	8.8	11.48024 034	
8.9. Number of Microfinance Institutions	0	0	47	8.8	9.950899 867	
9.1. Gross Sales of Registered Firms	0	3500000	1.29161E +11	5980018 252	2065356 8617	
9.2. Number of declared employees for business RENEWALS	0	0	27116	2487.88	4421.297 167	

10.1. Total number of LGU recognized / registered business groups	0	0	98	7.94	15.84286 358	
10.2. Total Number of Other Business Groups	0	0	60	3.86	10.37266 817	
11.1.1. Presence of CDP	0	1	1	1	0	remove indicator
11.1.2. Year of Last Update	0	1984	2018	2014.42	6.224015 372	
12.1. Presence of the Local Investment Incentives Code	0	1	1	1	0	remove indicator
12.2. Presence of the equivalent of an Investment Promotions Unit (Physical Office)	0	1	1	1	0	remove indicator
12.3. Presence of Staff manning the IPU	0	1	1	1	0	remove indicator
12.4. Presence of local executive order or ordinance that mandates the implementation of the LIIC or the setting up of an IPU	0	1	1	1	0	remove indicator
13.1.1. Getting Building Permits - Minutes	0	10	14400	1797.02	2720.397 199	
13.1.2. Getting Building Permits - Steps	0	1	9	4.48	1.644285 094	
13.2.1. Getting Occupancy Permits - Minutes	0	2	14400	1363.82	2261.634 976	
13.2.2. Getting Occupancy Permits - Steps	0	1	10	3.92	1.914925 266	
14.1. Business Tax collected by the LGU (in Php)	0	246635.4 7	5209531 58.1	2595415 1.7	7641950 9.72	
14.2. Real Property Tax collected by the LGU (in Php)	0	303186.7 4	2557060 64.6	1878494 7.17	4866348 8.24	
14.3. Total Revenues of the LGU (in Php)	0	2186131. 43	6539641 16.9	1203201 90.9	1567116 21.5	
15.1.1. Capacity of PUBLIC Health Services - Doctors	0	1	67	6.28	11.59528 405	
15.1.2. Capacity of PUBLIC Health Services - Nurses	0	1	112	18.04	19.02625 469	
15.1.3. Capacity of PUBLIC Health Services - Midwives	0	1	53	13.76	9.713361 301	
15.2.1. Capacity of PRIVATE Health Services - Doctors	0	0	220	14.12	39.47959 432	

15.2.2. Capacity of PRIVATE Health Services - Nurses	0	0	104	8.72	19.69568 481	
15.2.3. Capacity of PRIVATE Health Services - Midwives	0	0	40	4.22	7.519471 323	
16.1.1. PUBLIC secondary education - Number of Teachers	0	12	839	192.26	182.6895 225	
16.1.2. PUBLIC secondary education - Number of Students	0	843	17063	5206.78	3920.950 516	
16.2.1. PRIVATE secondary education - Number of Teachers	0	0	411	48.86	73.13030 305	
16.2.2. PRIVATE secondary education - Number of Students	0	0	7581	1057.46	1421.959 229	
17.1. Number of DILG recognized awards	0	0	5	1.5	1.343920 552	
17.2.1. Other awards conferred by credible institutions - Regional Awards	0	0	27	2.5	4.625792 817	
17.2.2. Other awards conferred by credible institutions - National Awards	0	0	3	0.66	0.939170 281	
17.2.3. Other awards conferred by credible institutions - International Awards	0	0	1	0.04	0.197948 664	
18.1. BPLS Automation	0	0	1	0.68	0.471212 071	
18.2.1. Getting Mayor's Permit for NEW business applications - Minutes	0	1	2400	558.3	508.1815 62	
18.2.2. Getting Mayor's Permit for NEW business applications - Steps	0	2	6	3.46	0.952119 012	
18.3.1. Getting Business RENEWAL Permits- Minutes	0	1	2400	480.5	477.4145 612	
18.3.2. Getting Business RENEWAL Permits - Steps	0	1	6	3.24	1.170382 808	
19.1. Number of policemen in the Locality	0	20	223	34.26	31.53605 646	
20.1. Number of Local citizens with PhilHealth registration	0	1662	195306	52726.38	40886.15 669	

21.1. Asphalt (in.)	0	0	83.66	15.1122	18.35841 989	
21.1.2. Gravel (in.)	0	0	277.34	46.0098	62.69361 366	
21.1.3. Concrete (in.)	0	1.27	104.9	38.9566	23.55953 922	
21.1.4. Unpaved (in.)	0	0	193.85	36.0158	38.93954 436	
21.1.5. Total Land Area	0	11.89	891.01	121.9776	137.3270 349	
22.1.1. Distance of City/Municipal Hall to Operating Airport (in.)	0	3	274	75.2784	58.52489 913	
22.1.2. Distance of City/Municipal Hall to Land Transport Terminal (in.)	0	0	200	34.3442	47.29414 526	
22.1.3. Distance of City/Municipal Hall to Seaport / Local PUBLIC Wharf	0	0	150	18.6812	26.97313 476	
23.1.1. Average hours of WATER services per day at the Central Business District	0	18	24	23.88	0.848528 137	
23.1.2. Average hours of ELECTRICITY services per day at the Central Business District	0	24	24	24	0	
23.2.1. Percentage of Households with WATER Service	0	35	100	82.7444	17.51218 551	
23.2.2. Percentage of Households with ELECTRICITY Service	0	25	100	91.1216	11.27249 775	
24.1. Buses	0	0	9125	279.04	1285.328 767	
24.2. Passenger Vans	0	0	7300	195.32	1031.483 703	
24.3. Jeepneys	0	0	3700	183.66	573.4552 848	
24.4. Tricycles	0	7	18250	700.24	2581.660 726	
24.5. Taxis	0	0	5475	124.02	775.5182 991	
24.6.1. Ferries - Ship	0	0	1825	37.7	257.9323 792	
24.6.2. Ferries - Fast Craft	0	0	1825	36.94	258.0353 092	

24.7. Passenger Bancas	0	0	1825	52.62	260.3084 426	
24.8.1. Others - Motorized Vehicles	0	0	3408	325.74	585.4008 851	
24.8.2. Others - Non-Motorized Vehicles	0	0	40200	918.02	5672.399 803	
25.1.1. Number of PUBLIC secondary SCHOOLS	0	1	22	7.24	5.008401 105	
25.1.2. Number of PUBLIC secondary school CLASSROOMS	0	16	1818	169.08	267.2154 859	
25.2.1. Number of PRIVATE secondary SCHOOLS	0	0	14	3.12	3.520435 966	
25.2.2. Number of PRIVATE secondary school CLASSROOMS	0	0	306	40.78	56.66380 985	
25.3.1.1. PUBLIC Tertiary Schools	0	0	16	0.8	2.258769 757	
25.3.1.2. PUBLIC Tertiary school Classrooms	0	0	192	15.82	31.29236 068	
25.3.2.1. PRIVATE Tertiary Schools	0	0	5	0.42	1.011969 186	
25.3.2.2. PRIVATE Tertiary school Classrooms	0	0	90	6.18	16.46603 183	
25.4.1.1. PUBLIC Technical Vocational Education and Training Schools	0	0	2	0.34	0.557325 977	
25.4.1.2. PUBLIC Technical Vocational Education and Training school Classrooms	0	0	59	2.78	8.892303 482	
25.4.2.1. PRIVATE Technical Vocational Education and Training Schools	0	0	3	0.22	0.648074 07	
25.4.2.2. PRIVATE Technical Vocational Education and Training school Classrooms	0	0	10	0.58	1.785314 241	
26.1.1. Number of PUBLIC health - Clinics	0	0	45	10.84	11.13435 573	
26.1.2. Number of PUBLIC health - Total Clinic Beds	0	0	100	15.3	17.58971 174	
26.1.3. Number of PUBLIC health - Diagnostic Centers	0	0	3	0.66	0.798212 288	
26.1.4. Number of PUBLIC health - Total Diagnostic Center Beds	0	0	50	1.6	7.096995 628	

26.1.5. Number of PUBLIC health - Hospitals	0	0	2	0.4	0.534522 484	
26.1.6. Number of PUBLIC health - Total Hospital Beds	0	0	184	17.78	35.42873 848	
26.2.1. Number of PRIVATE health - Clinics	0	0	35	4.96	7.488658 091	
26.2.2. Number of PRIVATE health - Total Clinic Beds	0	0	154	9.18	23.30778 096	
26.2.3. Number of PRIVATE health - Diagnostic Centers	0	0	9	1.04	1.772349 991	
26.2.4. Number of PRIVATE health - Total Diagnostic Center Beds	0	0	50	1.76	7.112966 028	
26.2.5. Number of PRIVATE health - Hospitals	0	0	2	0.32	0.586932 531	
26.2.6. Number of PRIVATE health - Total Hospital Beds	0	0	155	11.12	31.17929 716	
27.1. Total Investment in Infrastructure of LGU	0	8059534	3885696 98.8	5000150 7.52	7156995 4.65	
27.2. Total LGU Budget	0	1666345 1.8	8231397 97	2086301 65.1	1870321 79.7	
28.1.1. Hotels	0	0	4	0.36	0.802038 22	
28.1.2. Resorts	0	0	44	3.54	7.298895 639	
28.1.3. Tourist Inns	0	0	17	1.52	3.604079 321	
28.1.4. Apartelles	0	0	6	0.72	1.414790 675	
28.1.5. Pension House	0	0	12	1.22	2.332468 256	
28.1.6. Others	0	0	0	0	0	remove indicator
28.2.1. Hotel Rooms	0	0	980	23.1	138.4403 283	
28.2.2. Resort Rooms	0	0	1250	53.72	195.9172 087	
28.2.3. Tourist Inn Rooms	0	0	65	4.86	10.96936 364	
28.2.4. Apartelle Rooms	0	0	47	3.56	8.308245 228	
28.2.5. Pension House Rooms	0	0	58	5.94	11.40248 809	
28.2.6. Others	0	0	0	0	0	remove indicator

29.1. Number of Cable Service Providers	0	0	7	2.88	1.573245 703	
29.2. Number of Internet Service Providers	0	0	8	2.8	1.714285 714	
29.3. Number of Telephone Companies / Mobile Service Providers	0	0	7	3.24	1.672832 134	
30.1.1. Number of on-site ATMs	0	0	25	3.48	5.636035 66	
30.1.2. Number of off-site ATMs	0	0	18	3.02	3.139543 708	
31.1. Presence of the CLUP	0	1	1	1	0	remove indicator
31.2. Presence of an office that implements the CLUP (usually the Planning and Development Office)	0	1	1	1	0	remove indicator
31.3. Presence of staff manning the office	0	1	1	1	0	remove indicator
31.4. Presence of local executive order or ordinance that mandates the implementation of the CLUP	0	1	1	1	0	remove indicator
31.5. Year of Last Update	0	1983	2019	2011.08	8.270527 955	
32.1. Presence of the DRRMP	0	1	1	1	0	remove indicator
32.2. Presence of an office that implements the DRRMP	0	1	1	1	0	remove indicator
32.3. Presence of staff manning the office	0	1	1	1	0	remove indicator
32.4. Presence of local executive order or ordinance that mandates the implementation of the DRRMP	0	1	1	1	0	remove indicator
32.5. Budget Allocation	0	1	1	1	0	remove indicator
32.6. Year of Last Update	0	2015	2018	2017.14	0.833238 09	
33.1. Conduct of LGU-wide disaster drill	0	1	1	1	0	remove indicator
33.2. Date of latest LGU-wide disaster drill	0	2015	2019	2017.6	0.808122 036	

34.1. Presence of early warning system that integrates professional responders and grassroots organization	0	1	1	1	0	remove indicator
35.1.1. Total Budget for DRRMP	0	2897500	5100000 0	1121299 1.89	1095498 9.29	
35.1.2. Total LGU Budget	0	1128823 5	8718245 00	2110155 35	2075304 66.3	
36.1. Availability of local Geohazard Maps from DENR	0	1	1	1	0	remove indicator
36.2. Availability of LGU Risk Profile from DSWD	0	1	1	1	0	remove indicator
37.1.1. Ambulance - Public	0	1	40	5.3	5.810792 211	
37.1.2. Ambulance - Private	0	0	10	0.96	1.783827 575	
37.2.1. Firetrucks - Public	0	0	6	1.98	1.332329 554	
37.2.2. Firetrucks - Private	0	0	9	0.6	1.538618 516	
37.3.1. Clearing Equipments- Public	0	0	35	4.12	5.913112 375	
37.3.2. Clearing Equipments - Private	0	0	68	4.76	10.46580 438	
37.4.1. Rubber boats - Public	0	0	5	0.76	1.333401 359	
37.4.2. Rubber boats - Private	0	0	25	1.3	3.807886 553	
37.4.3. Other Boats Used for Rescue	0	0	212	9.94	32.37749 912	212
37.5.1. Infrastructure for evacuation - Public	0	0	155	32.12	35.62138 775	155
37.5.2. Infrastructure for evacuation - Private	0	0	850	31.14	129.1327 445	850
37.6. Presence of drainage systems in LGU Center	0	1	1	1	0	remove indicator
38.1.1. Presence of Water Source	0	1	1	1	0	remove indicator
38.1.2. Distance of Water Source	0	0.01	500	13.3462	70.36387 985	500
38.2.2. Presence of Power Source	0	1	1	1	0	remove indicator
38.2.2. Distance of Power Source to LGU	0	0	67.5	8.9002	12.72343 338	

38.3.1. Presence of Generator Sets	0	1	1	1	0	remove indicator
38.4.1. Redundancy - Power	0	0	40	2.64	5.958221896	
38.4.2. Redundancy - Water	0	0	35	5.5	7.332482944	
38.4.3. Redundancy - Telecom	0	0	150	11.18	29.85180403	150
38.4.4. Alternate Route	0	0	328	9.68	46.16140273	328
38.4.5. Redundancy - Fuel	0	0	20	3.42	4.549456124	
39.1. Number of Trained Responders	0	1	7865	223.74	1109.283163	7865
40.1. Presence of a Sanitary Landfill	0	0	1	0.72	0.453557368	
40.2. Distance of Landfill to LGU Center	0	0	36	3.8312	6.559569311	
40.3. Frequency of Garbage Collection per Month	0	4	90	32	14.13924918	90
40.4. Practice of Waste Segregation	0	1	1	1	0	remove indicator
40.5. Presence of Recycling/ Material Recovery Facility	0	1	1	1	0	remove indicator

Indicators	Numeric Vaues	NDA Values	Blanks	"-" Entries	N/A Values:	NA entries:	Not Required Values:
1.1. Gross Sales of Registered Firms	50	-	-	-	-	-	-
1.2. Total Capitalization of NEW Businesses	50	-	-	-	-	-	-
2.1. Growth of the Local Economy: Gross Sales of Registered Firms	50	-	-	-	-	-	-
2.2. Growth of the Local Economy: Total Capitalization of NEW Businesses	50	-	-	-	-	-	-
3.1.1. Number of approved business permits for NEW business applications	50	-	-	-	-	-	-
3.1.2. Number of approved business RENEWALS	50	-	-	-	-	-	-
4.1. Number of Occupancy Permits Approved	50	-	-	-	-	-	-
4.2. Number of approved fire safety inspection	50	-	-	-	-	-	-
5.1. Number of declared employees for NEW business applications	50	-	-	-	-	-	-
5.2. Number of declared employees for business RENEWALS	50	-	-	-	-	-	-
6.1. Local Inflation Rate	50	-	-	-	-	-	-
7.1.1. Cost of Electricity- Commercial Users	50	-	-	-	-	-	-
7.1.2. Cost of Electricity- Industrial Firms/Customers	50	-	-	-	-	-	-
7.2.1. Cost of Water- Commercial Users	50	-	-	-	-	-	-
7.2.2. Cost of Water- Industrial Firms/Customers	50	-	-	-	-	-	-
7.3. Price of Diesel as of December 31 per year	50	-	-	-	-	-	-
7.4.1.1. Daily Minimum Wage Rate - Agricultural (Plantation)	50	-	-	-	-	-	-

7.4.1.2. Daily Minimum Wage Rate - Agricultural (Non-Plantation)	50	-	-	-	-	-	-
7.4.2.1. Daily Minimum Wage Rate - Non-Agricultural (Establishments with more than 10 workers)	50	-	-	-	-	-	-
7.4.2.2. Daily Minimum Wage Rate - Non-Agricultural (Establishments with 10 workers or below)	50	-	-	-	-	-	-
7.5. Cost of Land in a Central Business District	50	-	-	-	-	-	-
7.6. Cost of Rent	50	-	-	-	-	-	-
8.1. Number of Universal/Commercial Banks	50	-	-	-	-	-	-
8.2. Number of Thrift and Savings Banks	50	-	-	-	-	-	-
8.3. Number of Rural Banks	50	-	-	-	-	-	-
8.4. Number of Finance Cooperatives	50	-	-	-	-	-	-
8.5. Number of Savings and Loans Associations with Quasi-Banking Functions	50	-	-	-	-	-	-
8.6. Number of Pawnshops	50	-	-	-	-	-	-
8.7. Number of Money Changers/Foreign exchange dealers	50	-	-	-	-	-	-
8.8. Number of Remittance Centers	50	-	-	-	-	-	-
8.9. Number of Microfinance Institutions	50	-	-	-	-	-	-
9.1. Gross Sales of Registered Firms	50	-	-	-	-	-	-
9.2. Number of declared employees for business RENEWALS	50	-	-	-	-	-	-
10.1. Total number of LGU recognized / registered business groups	50	-	-	-	-	-	-
10.2. Total Number of Other Business Groups	50	-	-	-	-	-	-
11.1.1. Presence of CDP	50	-	-	-	-	-	-
11.1.2. Year of Last Update	50	-	-	-	-	-	-

12.1. Presence of the Local Investment Incentives Code	50	-	-	-	-	-	-
12.2. Presence of the equivalent of an Investment Promotions Unit (Physical Office)	50	-	-	-	-	-	-
12.3. Presence of Staff manning the IPU	50	-	-	-	-	-	-
12.4. Presence of local executive order or ordinance that mandates the implementation of the LIIC or the setting up of an IPU	50	-	-	-	-	-	-
13.1.1. Getting Building Permits - Minutes	50	-	-	-	-	-	-
13.1.2. Getting Building Permits - Steps	50	-	-	-	-	-	-
13.2.1. Getting Occupancy Permits - Minutes	50	-	-	-	-	-	-
13.2.2. Getting Occupancy Permits - Steps	50	-	-	-	-	-	-
14.1. Business Tax collected by the LGU (in Php)	50	-	-	-	-	-	-
14.2. Real Property Tax collected by the LGU (in Php)	50	-	-	-	-	-	-
14.3. Total Revenues of the LGU (in Php)	50	-	-	-	-	-	-
15.1.1. Capacity of PUBLIC Health Services - Doctors	50	-	-	-	-	-	-
15.1.2. Capacity of PUBLIC Health Services - Nurses	50	-	-	-	-	-	-
15.1.3. Capacity of PUBLIC Health Services - Midwives	50	-	-	-	-	-	-
15.2.1. Capacity of PRIVATE Health Services - Doctors	50	-	-	-	-	-	-
15.2.2. Capacity of PRIVATE Health Services - Nurses	50	-	-	-	-	-	-
15.2.3. Capacity of PRIVATE Health Services - Midwives	50	-	-	-	-	-	-
16.1.1. PUBLIC secondary education - Number of Teachers	50	-	-	-	-	-	-
16.1.2. PUBLIC secondary education - Number of Students	50	-	-	-	-	-	-

16.2.1. PRIVATE secondary education - Number of Teachers	50	-	-	-	-	-	-
16.2.2. PRIVATE secondary education - Number of Students	50	-	-	-	-	-	-
17.1. Number of DILG recognized awards	50	-	-	-	-	-	-
17.2.1. Other awards conferred by credible institutions - Regional Awards	50	-	-	-	-	-	-
17.2.2. Other awards conferred by credible institutions - National Awards	50	-	-	-	-	-	-
17.2.3. Other awards conferred by credible institutions - International Awards	50	-	-	-	-	-	-
18.1. BPLS Automation	50	-	-	-	-	-	-
18.2.1. Getting Mayor's Permit for NEW business applications - Minutes	50	-	-	-	-	-	-
18.2.2. Getting Mayor's Permit for NEW business applications - Steps	50	-	-	-	-	-	-
18.3.1. Getting Business RENEWAL Permits- Minutes	50	-	-	-	-	-	-
18.3.2. Getting Business RENEWAL Permits - Steps	50	-	-	-	-	-	-
19.1. Number of policemen in the Locality	50	-	-	-	-	-	-
20.1. Number of Local citizens with PhilHealth registration	50	-	-	-	-	-	-
21.1. Asphalt (in.)	50	-	-	-	-	-	-
21.1.2. Gravel (in.)	50	-	-	-	-	-	-
21.1.3. Concrete (in.)	50	-	-	-	-	-	-
21.1.4. Unpaved (in.)	50	-	-	-	-	-	-
21.1.5. Total Land Area	50	-	-	-	-	-	-
22.1.1. Distance of City/Municipal Hall to Operating Airport (in.)	50	-	-	-	-	-	-
22.1.2. Distance of City/Municipal Hall to Land Transport Terminal (in.)	50	-	-	-	-	-	-

22.1.3. Distance of City/Municipal Hall to Seaport / Local PUBLIC Wharf	50	-	-	-	-	-	-
23.1.1. Average hours of WATER services per day at the Central Business District	50	-	-	-	-	-	-
23.1.2. Average hours of ELECTRICITY services per day at the Central Business District	50	-	-	-	-	-	-
23.2.1. Percentage of Households with WATER Service	50	-	-	-	-	-	-
23.2.2. Percentage of Households with ELECTRICITY Service	50	-	-	-	-	-	-
24.1. Buses	50	-	-	-	-	-	-
24.2. Passenger Vans	50	-	-	-	-	-	-
24.3. Jeepneys	50	-	-	-	-	-	-
24.4. Tricycles	50	-	-	-	-	-	-
24.5. Taxis	50	-	-	-	-	-	-
24.6.1. Ferries - Ship	50	-	-	-	-	-	-
24.6.2. Ferries - Fast Craft	50	-	-	-	-	-	-
24.7. Passenger Bancas	50	-	-	-	-	-	-
24.8.1. Others - Motorized Vehicles	50	-	-	-	-	-	-
24.8.2. Others - Non-Motorized Vehicles	50	-	-	-	-	-	-
25.1.1. Number of PUBLIC secondary SCHOOLS	50	-	-	-	-	-	-
25.1.2. Number of PUBLIC secondary school CLASSROOMS	50	-	-	-	-	-	-
25.2.1. Number of PRIVATE secondary SCHOOLS	50	-	-	-	-	-	-
25.2.2. Number of PRIVATE secondary school CLASSROOMS	50	-	-	-	-	-	-
25.3.1.1. PUBLIC Tertiary Schools	50	-	-	-	-	-	-
25.3.1.2. PUBLIC Tertiary school Classrooms	50	-	-	-	-	-	-
25.3.2.1. PRIVATE Tertiary Schools	50	-	-	-	-	-	-

25.3.2.2. PRIVATE Tertiary school Classrooms	50	-	-	-	-	-	-
25.4.1.1. PUBLIC Technical Vocational Education and Training Schools	50	-	-	-	-	-	-
25.4.1.2. PUBLIC Technical Vocational Education and Training school Classrooms	50	-	-	-	-	-	-
25.4.2.1. PRIVATE Technical Vocational Education and Training Schools	50	-	-	-	-	-	-
25.4.2.2. PRIVATE Technical Vocational Education and Training school Classrooms	50	-	-	-	-	-	-
26.1.1. Number of PUBLIC health - Clinics	50	-	-	-	-	-	-
26.1.2. Number of PUBLIC health - Total Clinic Beds	50	-	-	-	-	-	-
26.1.3. Number of PUBLIC health - Diagnostic Centers	50	-	-	-	-	-	-
26.1.4. Number of PUBLIC health - Total Diagnostic Center Beds	50	-	-	-	-	-	-
26.1.5. Number of PUBLIC health - Hospitals	50	-	-	-	-	-	-
26.1.6. Number of PUBLIC health - Total Hospital Beds	50	-	-	-	-	-	-
26.2.1. Number of PRIVATE health - Clinics	50	-	-	-	-	-	-
26.2.2. Number of PRIVATE health - Total Clinic Beds	50	-	-	-	-	-	-
26.2.3. Number of PRIVATE health - Diagnostic Centers	50	-	-	-	-	-	-
26.2.4. Number of PRIVATE health - Total Diagnostic Center Beds	50	-	-	-	-	-	-
26.2.5. Number of PRIVATE health - Hospitals	50	-	-	-	-	-	-
26.2.6. Number of PRIVATE health - Total Hospital Beds	50	-	-	-	-	-	-
27.1. Total Investment in Infrastructure of LGU	50	-	-	-	-	-	-
27.2. Total LGU Budget	50	-	-	-	-	-	-
28.1.1. Hotels	50	-	-	-	-	-	-

28.1.2. Resorts	50	-	-	-	-	-	-
28.1.3. Tourist Inns	50	-	-	-	-	-	-
28.1.4. Apartelles	50	-	-	-	-	-	-
28.1.5. Pension House	50	-	-	-	-	-	-
28.1.6. Others	50	-	-	-	-	-	-
28.2.1. Hotel Rooms	50	-	-	-	-	-	-
28.2.2. Resort Rooms	50	-	-	-	-	-	-
28.2.3. Tourist Inn Rooms	50	-	-	-	-	-	-
28.2.4. Apartelle Rooms	50	-	-	-	-	-	-
28.2.5. Pension House Rooms	50	-	-	-	-	-	-
28.2.6. Others	50	-	-	-	-	-	-
29.1. Number of Cable Service Providers	50	-	-	-	-	-	-
29.2. Number of Internet Service Providers	50	-	-	-	-	-	-
29.3. Number of Telephone Companies / Mobile Service Providers	50	-	-	-	-	-	-
30.1.1. Number of on-site ATMs	50	-	-	-	-	-	-
30.1.2. Number of off-site ATMs	50	-	-	-	-	-	-
31.1. Presence of the CLUP	50	-	-	-	-	-	-
31.2. Presence of an office that implements the CLUP (usually the Planning and Development Office)	50	-	-	-	-	-	-
31.3. Presence of staff manning the office	50	-	-	-	-	-	-
31.4. Presence of local executive order or ordinance that mandates the implementation of the CLUP	50	-	-	-	-	-	-
31.5. Year of Last Update	50	-	-	-	-	-	-
32.1. Presence of the DRRMP	50	-	-	-	-	-	-
32.2. Presence of an office that implements the DRRMP	50	-	-	-	-	-	-
32.3. Presence of staff manning the office	50	-	-	-	-	-	-
32.4. Presence of local executive order or ordinance that mandates the implementation of the DRRMP	50	-	-	-	-	-	-

32.5. Budget Allocation	50	-	-	-	-	-	-
32.6. Year of Last Update	50	-	-	-	-	-	-
33.1. Conduct of LGU-wide disaster drill	50	-	-	-	-	-	-
33.2. Date of latest LGU-wide disaster drill	50	-	-	-	-	-	-
34.1. Presence of early warning system that integrates professional responders and grassroots organization	50	-	-	-	-	-	-
35.1.1. Total Budget for DRRMP	50	-	-	-	-	-	-
35.1.2. Total LGU Budget	50	-	-	-	-	-	-
36.1. Availability of local Geohazard Maps from DENR	50	-	-	-	-	-	-
36.2. Availability of LGU Risk Profile from DSWD	50	-	-	-	-	-	-
37.1.1. Ambulance - Public	50	-	-	-	-	-	-
37.1.2. Ambulance - Private	50	-	-	-	-	-	-
37.2.1. Firetrucks - Public	50	-	-	-	-	-	-
37.2.2. Firetrucks - Private	50	-	-	-	-	-	-
37.3.1. Clearing Equipments- Public	50	-	-	-	-	-	-
37.3.2. Clearing Equipments - Private	50	-	-	-	-	-	-
37.4.1. Rubber boats - Public	50	-	-	-	-	-	-
37.4.2. Rubber boats - Private	50	-	-	-	-	-	-
37.4.3. Other Boats Used for Rescue	50	-	-	-	-	-	-
37.5.1. Infrastructure for evacuation - Public	50	-	-	-	-	-	-
37.5.2. Infrastructure for evacuation - Private	50	-	-	-	-	-	-
37.6. Presence of drainage systems in LGU Center	50	-	-	-	-	-	-
38.1.1. Presence of Water Source	50	-	-	-	-	-	-
38.1.2. Distance of Water Source	50	-	-	-	-	-	-
38.2.2. Presence of Power Source	50	-	-	-	-	-	-

38.2.2. Distance of Power Source to LGU	50	-	-	-	-	-	-
38.3.1. Presence of Generator Sets	50	-	-	-	-	-	-
38.4.1. Redundancy - Power	50	-	-	-	-	-	-
38.4.2. Redundancy - Water	50	-	-	-	-	-	-
38.4.3. Redundancy - Telecom	50	-	-	-	-	-	-
38.4.4. Alternate Route	50	-	-	-	-	-	-
38.4.5. Redundancy - Fuel	50	-	-	-	-	-	-
39.1. Number of Trained Responders	50	-	-	-	-	-	-
40.1. Presence of a Sanitary Landfill	50	-	-	-	-	-	-
40.2. Distance of Landfill to LGU Center	50	-	-	-	-	-	-
40.3. Frequency of Garbage Collection per Month	50	-	-	-	-	-	-
40.4. Practice of Waste Segregation	50	-	-	-	-	-	-
40.5. Presence of Recycling/ Material Recovery Facility	50	-	-	-	-	-	-

Indicators	Percent non-numeric entries:	minimum of indicator	maximum of indicator	average of indicator	standard deviation of indicator	Items/values to check:	Percent non-numeric entries:
1.1. Gross Sales of Registered Firms	0	₱3,500,000.00	₱129,161,310,238.53	₱5,980,018,252.38	₱20,653,568,616.64		0
1.2. Total Capitalization of NEW Businesses	0	₱145,000.00	₱1,775,469,979.00	₱100,132,055.14	₱289,730,681.89		0
2.1. Growth of the Local Economy: Gross Sales of Registered Firms	0	-1	321.61	9.8976	48.63309491	321.61	0
2.2. Growth of the Local Economy: Total Capitalization of NEW Businesses	0	-0.8	17.57	0.8688	3.048342902	17.57	0
3.1.1. Number of approved business permits for NEW business applications	0	6	1322	204.84	248.0559812		0
3.1.2. Number of approved business RENEWALS	0	23	2528	743.66	637.3551091		0
4.1. Number of Occupancy Permits Approved	0	0	810	134.56	197.7219404		0
4.2. Number of approved fire safety inspection	0	10	4546	734.88	795.8726603		0
5.1. Number of declared employees for NEW business applications	0	0	2220	303.64	456.9503059		0
5.2. Number of declared employees for business RENEWALS	0	0	27116	2486.9	4421.787921		0
6.1. Local Inflation Rate	0	5.8	6	5.924	0.09806287		0
7.1.1. Cost of Electricity-Commercial Users	0	7.54	20	10.5082	1.998511375		0
7.1.2. Cost of Electricity-Industrial Firms/Customers	0	7.54	49	11.302	5.792885151		0
7.2.1. Cost of Water-Commercial Users	0	3	180	23.0598	25.28586905		0
7.2.2. Cost of Water- Industrial Firms/Customers	0	2	100	20.4054	15.41308114		0
7.3. Price of Diesel as of December 31 per year	0	34.9	37.75	37.636	0.564153692		0

7.4.1.1. Daily Minimum Wage Rate - Agricultural (Plantation)	0	313	316	313.36	0.984782 168		0
7.4.1.2. Daily Minimum Wage Rate - Agricultural (Non-Plantation)	0	313	348	324	12.76154 939		0
7.4.2.1. Daily Minimum Wage Rate - Non-Agricultural (Establishments with more than 10 workers)	0	348	386	356.36	15.90117 439		0
7.4.2.2. Daily Minimum Wage Rate - Non-Agricultural (Establishments with 10 workers or below)	0	343	378	349.8	13.74550 019		0
7.5. Cost of Land in a Central Business District	0	120	35000	3863.5	5705.787 185		0
7.6. Cost of Rent	0	100	7500	745.8066	1290.132 501		0
8.1. Number of Universal/Commercial Banks	0	0	33	1.76	4.975696 034		0
8.2. Number of Thrift and Savings Banks	0	0	3	0.84	1.075895 451		0
8.3. Number of Rural Banks	0	0	14	1.82	2.553029 413		0
8.4. Number of Finance Cooperatives	0	0	98	6.96	14.42214 85		0
8.5. Number of Savings and Loans Associations with Quasi-Banking Functions	0	0	120	6.36	17.75083 786		0
8.6. Number of Pawnshops	0	0	90	10.88	14.61427 873		0
8.7. Number of Money Changers/Foreign exchange dealers	0	0	60	8.2	10		0
8.8. Number of Remittance Centers	0	0	65	8.8	11.48024 034		0
8.9. Number of Microfinance Institutions	0	0	47	8.8	9.950899 867		0
9.1. Gross Sales of Registered Firms	0	3500000	1.29161E +11	5980018 252	2065356 8617		0
9.2. Number of declared employees for business RENEWALS	0	0	27116	2487.88	4421.297 167		0

10.1. Total number of LGU recognized / registered business groups	0	0	98	7.94	15.84286 358		0
10.2. Total Number of Other Business Groups	0	0	60	3.86	10.37266 817		0
11.1.1. Presence of CDP	0	1984	2018	2014.42	6.224015 372		0
11.1.2. Year of Last Update	0	10	14400	1797.02	2720.397 199		0
12.1. Presence of the Local Investment Incentives Code	0	1	9	4.48	1.644285 094		0
12.2. Presence of the equivalent of an Investment Promotions Unit (Physical Office)	0	2	14400	1363.82	2261.634 976		0
12.3. Presence of Staff manning the IPU	0	1	10	3.92	1.914925 266		0
12.4. Presence of local executive order or ordinance that mandates the implementation of the LIIC or the setting up of an IPU	0	246635.4 7	5209531 58.1	2595415 1.7	7641950 9.72		0
13.1.1. Getting Building Permits - Minutes	0	303186.7 4	2557060 64.6	1878494 7.17	4866348 8.24		0
13.1.2. Getting Building Permits - Steps	0	2186131. 43	6539641 16.9	1203201 90.9	1567116 21.5		0
13.2.1. Getting Occupancy Permits - Minutes	0	1	67	6.28	11.59528 405		0
13.2.2. Getting Occupancy Permits - Steps	0	1	112	18.04	19.02625 469		0
14.1. Business Tax collected by the LGU (in Php)	0	1	53	13.76	9.713361 301		0
14.2. Real Property Tax collected by the LGU (in Php)	0	0	220	14.12	39.47959 432		0
14.3. Total Revenues of the LGU (in Php)	0	0	104	8.72	19.69568 481		0
15.1.1. Capacity of PUBLIC Health Services - Doctors	0	0	40	4.22	7.519471 323		0
15.1.2. Capacity of PUBLIC Health Services - Nurses	0	12	839	192.26	182.6895 225		0
15.1.3. Capacity of PUBLIC Health Services - Midwives	0	843	17063	5206.78	3920.950 516		0
15.2.1. Capacity of PRIVATE Health Services - Doctors	0	0	411	48.86	73.13030 305		0

15.2.2. Capacity of PRIVATE Health Services - Nurses	0	0	7581	1057.46	1421.959 229		0
15.2.3. Capacity of PRIVATE Health Services - Midwives	0	0	5	1.5	1.343920 552		0
16.1.1. PUBLIC secondary education - Number of Teachers	0	0	27	2.5	4.625792 817		0
16.1.2. PUBLIC secondary education - Number of Students	0	0	3	0.66	0.939170 281		0
16.2.1. PRIVATE secondary education - Number of Teachers	0	0	1	0.04	0.197948 664		0
16.2.2. PRIVATE secondary education - Number of Students	0	0	1	0.68	0.471212 071		0
17.1. Number of DILG recognized awards	0	1	2400	558.3	508.1815 62		0
17.2.1. Other awards conferred by credible institutions - Regional Awards	0	2	6	3.46	0.952119 012		0
17.2.2. Other awards conferred by credible institutions - National Awards	0	1	2400	480.5	477.4145 612		0
17.2.3. Other awards conferred by credible institutions - International Awards	0	1	6	3.24	1.170382 808		0
18.1. BPLS Automation	0	20	223	34.26	31.53605 646		0
18.2.1. Getting Mayor's Permit for NEW business applications - Minutes	0	1662	195306	52726.38	40886.15 669		0
18.2.2. Getting Mayor's Permit for NEW business applications - Steps	0	0	83.66	15.1122	18.35841 989		0
18.3.1. Getting Business RENEWAL Permits- Minutes	0	0	277.34	46.0098	62.69361 366		0
18.3.2. Getting Business RENEWAL Permits - Steps	0	1.27	104.9	38.9566	23.55953 922		0
19.1. Number of policemen in the Locality	0	0	193.85	36.0158	38.93954 436		0
20.1. Number of Local citizens with PhilHealth registration	0	11.89	891.01	121.9776	137.3270 349		0

21.1. Asphalt (in.)	0	3	274	75.2784	58.52489 913		0
21.1.2. Gravel (in.)	0	0	200	34.3442	47.29414 526		0
21.1.3. Concrete (in.)	0	0	150	18.6812	26.97313 476		0
21.1.4. Unpaved (in.)	0	18	24	23.88	0.848528 137		0
21.1.5. Total Land Area	0	24	24	24	0		0
22.1.1. Distance of City/Municipal Hall to Operating Airport (in.)	0	35	100	82.7444	17.51218 551		0
22.1.2. Distance of City/Municipal Hall to Land Transport Terminal (in.)	0	25	100	91.1216	11.27249 775		0
22.1.3. Distance of City/Municipal Hall to Seaport / Local PUBLIC Wharf	0	0	9125	279.04	1285.328 767		0
23.1.1. Average hours of WATER services per day at the Central Business District	0	0	7300	195.32	1031.483 703		0
23.1.2. Average hours of ELECTRICITY services per day at the Central Business District	0	0	3700	183.66	573.4552 848		0
23.2.1. Percentage of Households with WATER Service	0	7	18250	700.24	2581.660 726		0
23.2.2. Percentage of Households with ELECTRICITY Service	0	0	5475	124.02	775.5182 991		0
24.1. Buses	0	0	1825	37.7	257.9323 792		0
24.2. Passenger Vans	0	0	1825	36.94	258.0353 092		0
24.3. Jeepneys	0	0	1825	52.62	260.3084 426		0
24.4. Tricycles	0	0	3408	325.74	585.4008 851		0
24.5. Taxis	0	0	40200	918.02	5672.399 803		0
24.6.1. Ferries - Ship	0	1	22	7.24	5.008401 105		0
24.6.2. Ferries - Fast Craft	0	16	1818	169.08	267.2154 859		0

24.7. Passenger Bancas	0	0	14	3.12	3.520435 966		0
24.8.1. Others - Motorized Vehicles	0	0	306	40.78	56.66380 985		0
24.8.2. Others - Non-Motorized Vehicles	0	0	16	0.8	2.258769 757		0
25.1.1. Number of PUBLIC secondary SCHOOLS	0	0	192	15.82	31.29236 068		0
25.1.2. Number of PUBLIC secondary school CLASSROOMS	0	0	5	0.42	1.011969 186		0
25.2.1. Number of PRIVATE secondary SCHOOLS	0	0	90	6.18	16.46603 183		0
25.2.2. Number of PRIVATE secondary school CLASSROOMS	0	0	2	0.34	0.557325 977		0
25.3.1.1. PUBLIC Tertiary Schools	0	0	59	2.78	8.892303 482		0
25.3.1.2. PUBLIC Tertiary school Classrooms	0	0	3	0.22	0.648074 07		0
25.3.2.1. PRIVATE Tertiary Schools	0	0	10	0.58	1.785314 241		0
25.3.2.2. PRIVATE Tertiary school Classrooms	0	0	45	10.84	11.13435 573		0
25.4.1.1. PUBLIC Technical Vocational Education and Training Schools	0	0	100	15.3	17.58971 174		0
25.4.1.2. PUBLIC Technical Vocational Education and Training school Classrooms	0	0	3	0.66	0.798212 288		0
25.4.2.1. PRIVATE Technical Vocational Education and Training Schools	0	0	50	1.6	7.096995 628		0
25.4.2.2. PRIVATE Technical Vocational Education and Training school Classrooms	0	0	2	0.4	0.534522 484		0
26.1.1. Number of PUBLIC health - Clinics	0	0	184	17.78	35.42873 848		0
26.1.2. Number of PUBLIC health - Total Clinic Beds	0	0	35	4.96	7.488658 091		0
26.1.3. Number of PUBLIC health - Diagnostic Centers	0	0	154	9.18	23.30778 096		0
26.1.4. Number of PUBLIC health - Total Diagnostic Center Beds	0	0	9	1.04	1.772349 991		0

26.1.5. Number of PUBLIC health - Hospitals	0	0	50	1.76	7.112966 028		0
26.1.6. Number of PUBLIC health - Total Hospital Beds	0	0	2	0.32	0.586932 531		0
26.2.1. Number of PRIVATE health - Clinics	0	0	155	11.12	31.17929 716		0
26.2.2. Number of PRIVATE health - Total Clinic Beds	0	8059534	3885696 98.8	5000150 7.52	7156995 4.65		0
26.2.3. Number of PRIVATE health - Diagnostic Centers	0	1666345 1.8	8231397 97	2086301 65.1	1870321 79.7		0
26.2.4. Number of PRIVATE health - Total Diagnostic Center Beds	0	0	4	0.36	0.802038 22		0
26.2.5. Number of PRIVATE health - Hospitals	0	0	44	3.54	7.298895 639		0
26.2.6. Number of PRIVATE health - Total Hospital Beds	0	0	17	1.52	3.604079 321		0
27.1. Total Investment in Infrastructure of LGU	0	0	6	0.72	1.414790 675		0
27.2. Total LGU Budget	0	0	12	1.22	2.332468 256		0
28.1.1. Hotels	0	0	980	23.1	138.4403 283		0
28.1.2. Resorts	0	0	1250	53.72	195.9172 087		0
28.1.3. Tourist Inns	0	0	65	4.86	10.96936 364		0
28.1.4. Apartelles	0	0	47	3.56	8.308245 228		0
28.1.5. Pension House	0	0	58	5.94	11.40248 809		0
28.1.6. Others	0	0	7	2.88	1.573245 703		0
28.2.1. Hotel Rooms	0	0	8	2.8	1.714285 714		0
28.2.2. Resort Rooms	0	0	7	3.24	1.672832 134		0
28.2.3. Tourist Inn Rooms	0	0	25	3.48	5.636035 66		0
28.2.4. Apartelle Rooms	0	0	18	3.02	3.139543 708		0
28.2.5. Pension House Rooms	0	1983	2019	2011.08	8.270527 955		0
28.2.6. Others	0	2015	2018	2017.14	0.833238 09		0

29.1. Number of Cable Service Providers	0	2015	2019	2017.6	0.808122 036		0
29.2. Number of Internet Service Providers	0	2897500	5100000 0	1121299 1.89	1095498 9.29		0
29.3. Number of Telephone Companies / Mobile Service Providers	0	1128823 5	8718245 00	2110155 35	2075304 66.3		0
30.1.1. Number of on-site ATMs	0	1	40	5.3	5.810792 211		0
30.1.2. Number of off-site ATMs	0	0	10	0.96	1.783827 575		0
31.1. Presence of the CLUP	0	0	6	1.98	1.332329 554		0
31.2. Presence of an office that implements the CLUP (usually the Planning and Development Office)	0	0	9	0.6	1.538618 516		0
31.3. Presence of staff manning the office	0	0	35	4.12	5.913112 375		0
31.4. Presence of local executive order or ordinance that mandates the implementation of the CLUP	0	0	68	4.76	10.46580 438		0
31.5. Year of Last Update	0	0	5	0.76	1.333401 359		0
32.1. Presence of the DRRMP	0	0	25	1.3	3.807886 553		0
32.2. Presence of an office that implements the DRRMP	0	0	212	9.94	32.37749 912	212	0
32.3. Presence of staff manning the office	0	0	155	32.12	35.62138 775	155	0
32.4. Presence of local executive order or ordinance that mandates the implementation of the DRRMP	0	0	850	31.14	129.1327 445	850	0
32.5. Budget Allocation	0	0.01	500	13.3462	70.36387 985	500	0
32.6. Year of Last Update	0	0	67.5	8.9002	12.72343 338		0
33.1. Conduct of LGU-wide disaster drill	0	0	40	2.64	5.958221 896		0
33.2. Date of latest LGU-wide disaster drill	0	0	35	5.5	7.332482 944		0

34.1. Presence of early warning system that integrates professional responders and grassroots organization	0	0	150	11.18	29.85180 403	150	0
35.1.1. Total Budget for DRRMP	0	0	328	9.68	46.16140 273	328	0
35.1.2. Total LGU Budget	0	0	20	3.42	4.549456 124		0
36.1. Availability of local Geohazard Maps from DENR	0	1	7865	223.74	1109.283 163	7865	0
36.2. Availability of LGU Risk Profile from DSWD	0	0	1	0.72	0.453557 368		0
37.1.1. Ambulance - Public	0	0	36	3.8312	6.559569 311		0
37.1.2. Ambulance - Private	0	4	90	32	14.13924 918	90	0
37.2.1. Firetrucks - Public							
37.2.2. Firetrucks - Private							
37.3.1. Clearing Equipments- Public							
37.3.2. Clearing Equipments - Private							
37.4.1. Rubber boats - Public							
37.4.2. Rubber boats - Private							
37.4.3. Other Boats Used for Rescue							
37.5.1. Infrastructure for evacuation - Public							
37.5.2. Infrastructure for evacuation - Private							
37.6. Presence of drainage systems in LGU Center							
38.1.1. Presence of Water Source							
38.1.2. Distance of Water Source							
38.2.2. Presence of Power Source							
38.2.2. Distance of Power Source to LGU							
38.3.1. Presence of Generator Sets							
38.4.1. Redundancy - Power							

38.4.2. Redundancy - Water							
38.4.3. Redundancy - Telecom							
38.4.4. Alternate Route							
38.4.5. Redundancy - Fuel							
39.1. Number of Trained Responders							
40.1. Presence of a Sanitary Landfill							
40.2. Distance of Landfill to LGU Center							
40.3. Frequency of Garbage Collection per Month							
40.4. Practice of Waste Segregation							
40.5. Presence of Recycling/ Material Recovery Facility							