

SWOT Analysis to Reviewing Business Characteristic (BCS) Survey 2019 for Integrating business and ICT Data in Indonesia

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Abstract

Nowadays, the need for data in business activities is crucial. Any decision making related to venture activities requires rapid and reliable data support. Data and information regarding business and ICT in BPS as the official statistics provider are available in various surveys. To reduce both the provider and the respondent burden, while improving resource efficiency to produce single-source information on business activities, BPS in 2019 stated pilot on integrating some of the business surveys into a single survey called the Business Characteristics Survey (BCS). Being the part of the BPS business process transformation and in line with the result from ABs technical assistance, BCS merges three different surveys to collect information related to business profiles, employment, capital, ICT used, and innovations made by companies. Based on the survey result, We analyze to review the implementation of the BCS 2019 as an example and best practice for integrated statistics activities in BPS. This research will use a qualitative approach by using SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis in elaborating factors regarding integrated survey policy in BPS.

From SWOT analysis of the BCS 2019, we found several challenges in integrating the statistical business processes in BPS such as information silo between different divisions that potentially hamper the integrated survey process. Besides, BPS needs to clarify all kinds of data and information demanded by consumers from business activity to ensure their needs are fully satisfied. Behind it all, while BCS successfully maintains data coherence and consistency, the effort to unite the Business statistics in BPS has been proven to have a positive impact on gaining resource efficiency and response rate which touch 90%. This high response rate means that the importance of the data collected by BCS is already fully aware by respondents. The benefits of this survey that able to show the usage level of ICT use and Innovation on business in Indonesia, especially for industry and business sectors, will support indirectly to reach goal No. 9 of Sustainable Development Goals (SDGs). In conclusion, although still faces many problems in integrating statistical activities in BCS such as communication and conflicts of interest between related divisions, such policy needs to be continuously developed by BPS in other statistical sectors.

Keywords: innovations; response rate; sustainable; integrated statistics; development

1. Introduction

Business activity in Indonesia today grows very rapidly, causing big changes in its every aspect. Industry 4.0 that introduces information and communication technology (ICT) use makes business development more dynamic. At this situation, support from high-quality data is important to keep competitive. Any decision-making related to venture activities requires relevant, timely, and accurate data and information.

Badan Pusat Statistik (BPS) as the national statistics office in commitment to support business activities in Indonesia by providing statistics data on businesses and ICT. Until 2018, BPS had three business and ICT surveys. Each of these surveys has its purposes and specialties, although it was organized by the same unit organization in BPS. The three past BPS business and ICT surveys cover the ICT use in the business sector (Survey P2TIK Sektor Bisnis), the information and communication enterprises (Survey Perusahaan Infokom), and the research, development, and innovation conducted by enterprises in the business sector (Survey IPTEK dan Inovasi). The data and information from these surveys are very useful for the government to formulate evidence-based policies related to business and for the private sector and community for decision-making (Badan Pusat Statistik, 2015a, 2015b, 2018a).

All three business and ICT yearly surveys mentioned above have multiple similarities. In addition to being organized by the same unit in BPS, all these surveys are targeting the same unit of observation, that is a business entity or a company. These similarities imply that not just causing a high respondent burden, the implementation of three different surveys at the same level will spend more resources in term of time, manpower, and budget compared to a single survey. Moreover, the data generated by these three surveys potentially to overlap each other but difficult to combine it altogether due to potentially different survey sample. Therefore, the idea of integrating the business and ICT surveys in BPS is relevant to the current situation because it not just could reduce the burden of both respondent and survey officer, but also increase the resources efficiency while producing a single source of truth for data and information on the business.

To actualize the idea of integrated business and ICT surveys, BPS carried out the Business Characteristics Survey (BCS) in 2019. BCS is a survey that integrates various information about ICT and business activities that formerly covered in three different business and ICT surveys. The general purpose of BCS is to meet the needs of various business and ICT statistics while reducing both respondent and provider burden. BCS is expected to be able to provide an overview of the ICT use and utilization in the business sector. Furthermore, the implementation of BCS will support the dissemination of various business and ICT indicators which are important for policymaking and decision making.

In most cases, resources efficiency is the main goal of integrating or combining two or more projects. In developing countries where several resources are scarce, it is vital to maintain resources utilization as efficient as possible while keep providing optimal output. There are many good examples of integrated projects in developing countries, unfortunately, it is difficult to found it well-reviewed in literature. Even though, there are two articles on an integrated survey from Rowe (2009) and MacLachlan et al. (2002) that show how integrating surveys or survey and other projects could provide benefit.

One literature from Rowe (2009) shows how integrated continuous surveys (ICS) and quality management principles could support health management in developing countries. Even this study did not particularly analyze the integrated survey, but it is clearly stated that ICS has many differences with similar existing high-quality national cross-sectional surveys of communities and health facilities. The differences are that, with ICS, data are collected continuously by a few permanent teams over several years, which indicates a lower provider burden. High provider burden may lower their output in the process.

Next, MacLachlan et al. (2002) write a short report on how a combined survey in a developing country is feasible enough to be conducted. By using cluster sampling among five population groups with HIV related risk in four sites in Mali, West Africa, this study assesses the feasibility of conducting a national combined sexually transmitted diseases (STD) prevalence and behaviour survey with the intention of institutionalisation. The result shows that this method ends up with high participation rates of 84%–100% on each group.

Taking into account all findings from previous experiences explained above, it is necessary to observe whether the idea of integrating business and ICT surveys in Indonesia feasible enough to keep implemented. Through this study, we comprise SWOT analysis in questioning whether the Business

Characteristics Survey (BCS) as one example of an integrated survey in Indonesia has more strength and opportunity to be continued or not? In what aspects the BCS shows both its internal strengths and opportunity and its external opportunity and threats? Considering the growth of business and ICT use in Indonesia that needed quality data and information, the integrated business characteristics survey were expected to have more strength and opportunity than the individual survey thus feasible to be continued. We believe that this study and its lesson learned may contribute greatly in improving several statistical reforms on Indonesian Statistics in the narrow scope, and regional South East Asia National Statistics Office (NSO) in the broader scope.

2. Methodology

This study conducts the strengths, weaknesses, opportunities and threats analysis for examining the Business Characteristics Survey (BCS) 2019 as the first integrated survey in BPS. We use SWOT analysis from an internal and external perspective, to evaluate policy in integrating survey policy as an ongoing statistical reform for better providing quality official statistics by BPS. SWOT analysis used because it is simple yet powerful to summarize any advantages and disadvantages of a project. In project management, it is important to recognize these two aspects to avoid planning a failed project.

According to Leigh (2010), SWOT analysis is a process where a group of stakeholders recognise any internal and external factors of performance, analyze those factors based on evaluation of their impact and controllability, and determine future action concerning those factors. Usually, however, organizations might carry out only the first step of these three tasks. SWOT analysis is often designed in a matrix 2x2 with internal performance enhancers as strengths and internal inhibitors as weaknesses. While external enhancers classified as opportunities and external inhibitors as threats. Capon (2004) as cited from Leigh (2010) explain in details each of the SWOT analysis aspects as follows:

- **Strength** : internal performance enhancer, valuable resource/attribute.
- **Weakness** : internal performance/resources/attributes inhibitor.
- **Opportunity** : external performance enhancer that can be pursued to gain benefit.
- **Threat** : external performance inhibitor that has the potential to reduce accomplishments.

Typical SWOT analysis matrix can be seen in **Figure 1** below.

Internal	Strengths	Weaknesses
	a. b. c.	a. b. c.
External	Opportunities	Threats
	a. b. c.	a. b. c.
	Enhancer	Inhibitor

Figure 1. A Typical SWOT Analysis Matrix

From another literature, Leigh (2006) describes that SWOT Analysis may applicate within performance analysis, strategic planning, and evaluation for monitoring. As an analysis tool, SWOT analysis certainly has advantages and disadvantages. Gurel and Tat (2017) briefly explained in detail that SWOT Analysis is an analysis technique that has a general perspective and presents general solutions. Also, SWOT provides the opportunity for the environment of the organization to add plus

and minus value, all together in a related perspective. This can help organizational managements to uncover opportunities to take advantage. Otherwise, by understanding the weaknesses, threats can be managed and eliminated. This value enables SWOT Analysis to be applied at various analytical levels and can be used by a wide range organization. However, this analysis tool got criticisms that SWOT should not be accepted as an analysis technique because it is considered to be obsolete (Hill and Westbrook (1997) as cited from Gurel and Tat (2017)).

3. Result

Table 1 presents the summary of business and ICT surveys in BPS before and after integration in 2019. In 2018, BPS conducted three separate business and ICT surveys with budget allocation reached USD 300 thousand, involving 654 manpower. While in 2019, BPS integrating these three previous surveys with budget allocation reached USD 400 thousand. The P2TIK Survey covers 129 districts across Indonesia with 4,537 company samples with response rate touched 79.48 per cent. While the Infokom Survey (290 samples and 83.90 per cent of response rate) and IPTEK and Inovasi Survey (894 samples and 78.61 per cent of response rate) were conducted in 29 provinces.

Table 1. Summary of Three Business and ICT Surveys 2018 and BCS 2019

Surveys	Year	Coverage	Samples	Response Rate (%)	Manpower	Budget (USD/samples)
P2TIK	2018	129 Districts 34 Provinces	4537	79.48	500	52.45
INFOKOM	2018	29 Provinces	290	83.90		
IPTEK & INOVASI	2018	29 Provinces	894	78.61	154	
BCS	2019	165 Districts 34 Provinces	8300	84.49	831	48.19

Source: BPS official document.

Strength (S)

Table 2 shows several benefits of BCS 2019 ranged from strong commitment in reducing respondent and provider burden, rising response rate, promoting resources efficiency, and producing sample representativeness for estimating national-level statistics. With the technical assistant support from Australian Bureau of Statistics (ABS) and preparation for less than one year, BCS 2019 successfully demonstrates its power in reducing respondent and provider burden. BCS 2019 also shows an increasing response rate (3.82 per cent) from earlier separate surveys. Moreover, BCS 2019 performs time, budget and human resources efficiency as shown in Table 1. With BCS 2019, BPS performs budget efficiency of about 7% and human resources efficiency about 25%. For instance, in previous separately survey, each enumerator interview 6 samples and in BCS enumerator could interview 8-10 samples. The use of IT supports such as Computer Assisted Personal Interview (CAPI) method shows a strong commitment to realizing resources efficiency. Lastly, with higher samples sizes and coverages, BCS 2019 provides better national-level sample representativeness.

Table 2. Summary SWOT table for evaluating BCS 2019

Strengths	Weakness
<ol style="list-style-type: none"> 1. Strong commitment to reducing respondent and provider burden 2. Increasing Response Rate 3. Systematics Enumerators Training 4. Technical Assistance Support by ABS 5. Good Government Support 6. Using ICT support (CAPI and CAWI) 7. Sample representativeness for estimating national statistics 	<ol style="list-style-type: none"> 1. The enumerator's capability in using ICT support is varied 2. Some obstacles of IT Use in BCS 2019 3. Poor other macro data references 4. Lack of preparation and experience in implementing an integrated survey 5. Poor readjustment of instrument related to technical Assistance Bias
Opportunity	Threats
<ol style="list-style-type: none"> 1. The trend of ICT use and internet users in Indonesia is promising 2. The number of stakeholders using BCS data is increasing 3. The Development of Medium Enterprise Directory as a sample framework through Statistical Business Register 	<ol style="list-style-type: none"> 1. A promising trend of Big Data usage by private Data Science Provider

Source: BPS official document.

Weakness (W)

Despite some fruitful internal benefits, Table 2 also presents some internal constraints in conducting BCS 2019 such as the varied capability of enumerators in using ICT Support, some obstacles of IT use in BCS 2019, poor other macro data references, lack time of preparation, and poor readjustment of instrument related to technical assistance bias. BCS enumerator shows a varied capability in statistical concept understanding and ICT instrument utilization. The use of ICT in this survey not just brought benefit but also some other challenges. CAPI method force BCS to develop an android based system that left some bugs, for instance, auto swap that causing data lost, no geotagging ability, and at several medium and big scale enterprises still used PAPI method. Further, BCS 2019 shows a poor readjustment of instrument related to technical assistance bias. Regarding BCS 2019, BPS doing a best practices review from a similar survey conducted by the Australian Bureau of Statistics (ABS). Due to its lack of time preparation, BPS adopts many questions in the ABS questionnaire but did not consider the conditions in Indonesia. It caused some questions to be irrelevant to the conditions of respondents in Indonesia.

Opportunity (O)

BCS 2019 frames the opportunity in three indicators: the promising trend of ICT use and Internet users in Indonesia, high government support and the increase of stakeholders which using BCS data, and the development of BPS Statistical Bussines Register. Currently, the rapid development of ICT infrastructure in Indonesia has shown remarkable achievement. According to The International Telecommunication Union (2018) reports that internet users in Indonesia reached 40% of the total population of Indonesia. Meanwhile, according to Das et al. (2016) internet users in Indonesia are alleged to have exceeded the number of internet users in other ASEAN member countries. Badan Pusat Statistik (2018) documented an increase in internet users from 17.14 per cent in 2014 to 39.90 per cent in 2018 during the 2014-2018 period. Also, ongoing massive development in online transaction supported by the government with ITE Law enforcement.

Threats (T)

Table 2 also warns about any possible threats in an integrated survey. The possible external threat comes from the promising Big Data use by private data science provider. Private data science provider able to present better, faster, and cheaper similar business and ICT statistics with data mining and web scraping method.

4. Discussion, Conclusion and Recommendations

BCS 2019 offers several benefits compared to previously separate surveys in term of budget (about 7%), time, human resource efficiency (25%), and response rate (about 4%). BCS 2019 also performing better sample representativeness for estimating national-level statistics. Good budget efficiency would escalate BPS accountability profile which in turn will boost stakeholder trust. Good response rate and better human resources efficiency will ensure the quality of the statistics provided compared to the previous surveys.

Based on the findings discussed above, it is clear that BCS as one example of an integrated survey in Indonesia has more strength and opportunity than any previous business and ICT surveys in Indonesia. Even though, it still needs several improvements in the future especially related to the use of ICT on its enumeration process. Therefore, this survey is very feasible to be recommended to be continued. In addition, BPS also needs to carry out the integration process in other statistical activities given the many benefits provided.

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