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Journal homepage: https://www.journal.uii.ac.id/jsb

Collaboration business intelligence prototype for the synergy of empowering MSMEs in the government agencies

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Article Info	Abstract					
Article history: Received : 2024-01-21 Accepted : 2024-12-27 Published: 2025-01-20	 Purpose – This research develops a business intelligence prototyp based on the analysis of profile data, problems, and needs of MSMEs. Design/methodology/approach – This research uses the descriptiv analysis method by collecting data through interviews an documentation. 					
JEL Classification Code: O31, O32, O33	Findings – Based on a sample of 5 respondent technical units in the Ministry of Finance, this research develops a prototype to empowering					
Author's email: asqolani@pknstan.ac.id sopian@pknstan.ac.id DOI: 10.20885/jsb.vol29.iss1.art3	MSMEs in business sectors, problems, and needs of MSMEs that are fostered by several technical units in a government agency can be integrated and presented in business intelligence. This analytical tool can be used jointly by technical units to make decisions in preparing MSME empowerment programs.					
	Research limitations/implications – The business intelligence model has just been developed based on data and discussions from 3-5 technical units in the Ministry of Finance and does not yet reflect the data and information needs of the Ministry of Finance as a whole.					
	Practical implications – Government institutions that have not yet implemented business intelligence that supports MSME empowerment activities can develop this prototype into a fully functional system and can be used for synergistic empowerment of MSMEs.					
	Originality/value – This research is intended to complement the limited discussion regarding the application of business intelligence in government institutions.					
	Keywords: Business intelligence, data analytic, collaboration, MSMEs.					

Introduction

Micro, Small, and Medium Enterprises (MSMEs) are sectors that have an important role in the Indonesian economy. This can be seen from the number of MSME units which reach 95% of the total business units in Indonesia. The contribution of MSMEs to Indonesia's GDP continues to increase to around 60%, even to the Ministry of MSME data they contribute 61.7% to Indonesia's GDP (Marlinah, 2020).

MSMEs have a strategic existence in the Indonesian economy. MSMEs have an important role in the defense of the nation's economy (Nurhayati & Adhi, 2021). This sector accounts for more than 60% of the total GDP and reduces unemployment by contributing more than 95% of the total workforce (Jelita et al., 2023). In addition, MSMEs have a role in increasing economic growth and employment, as well as as a forum for community creativity (Khairiyah & Akhmadi, 2019).

P ISSN 0853-7666 | E ISSN 2528-7001

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MSMEs are one of the business sectors that can encourage economic growth. However, the development of MSMEs still has various obstacles. From the results of a study by the LPPI and BI (Indonesia & LPPI, 2015), these limitations include the lack of access to banking; Human resources skills and knowledge are still low so that they are managed in a simple way; limited use of technology; and has not been able to keep pace with changes in consumer tastes, especially those that are export-oriented.

According to the Central Statistics Agency (2019), most of the obstacles/difficulties encountered by micro and small industries in developing their businesses are capital. This is also in accordance with the World Bank statement in 2018 namely "Indonesian MSMEs are underserved and face significant challenges in accessing financing, mainly due to the stringent operational, reporting, and collateral requirements of commercial banks". From the statement above, it can be concluded that MSMEs are experiencing capital difficulties due to the absence of financial reports where which is a condition for bank/financial institution credit. This can be seen in the Indonesian Banking Statistics data in 2016, the position of MSME credit in banking is still small at 18.3%.



Figure 1. Constraints faced by MSMEs in Indonesia

Not only problems, MSMEs also face various challenges. According to (Luki Masriansyah, 2021) the challenges faced by MSMEs today are related to the low quality of human resources (HR), the role of the support system is less than optimal, and policies and regulations that are less effective. According to Sri & Ahmad, (2017), the rapid development of digital technology, apart from being a challenge for the business world, is also a huge opportunity and potential for economic and business improvement. Business actors must be able to follow changing trends by utilizing information technology to encourage business activities while increasing competitiveness.

The various problems and challenges faced by MSMEs are certainly the responsibility and concern of all of us. The Government is no exception, as one of the most important organizations in Indonesia has strong policies, instruments, performance, and influence to create a just and prosperous Indonesia. The Government Agencies is required to be able to address various dynamics of economic, political, and technological change. The technical unit of the government agencies can integrate, exchange, collaborate, collect, and process data and/or information of the assisted MSMEs by utilizing the database information technology system. One of these integrated database systems a function as a dashboard and reporting that presents data that has been processed and analyzed in the form of visualizations to meet the needs of organization. The government agencies needs a business intelligence that can be used to analyze collaborative data from various technical units that carry out MSMEs empowerment activities. even though the tool is very important to assist in the preparation of plans and decision-making. Several academics provide definitions of business intelligence from various points of view (Negash & Gray, 2008) provides a definition of business intelligence as a system that combines the process of data acquisition, data storage and knowledge management by using analytical tools to present internal and

comprehensive information for planning and policymakers. Meanwhile, Elbashir et al., (2008) stated that business intelligence is a specific tool used for data analysis, collection, and presentation of data that support organizational decision-making processes expected to improve business decision-making performance. Hatta et al., (2015) believe that business intelligence is one of the media or tools of the options owned by business entities used in the decision-making process. Boonsiritomachai et al., (2014) concluded that business intelligence is the capability of a business entity to empower its human resources simultaneously with a set of process categories, applications, and technologies to access, collect, collect, and analyze data to generate competitive and executable information that can be used in better decision-making processes. Although there is no mutual agreement on the definition of business intelligence from academics. Keeping up with the world of practice, research on the adoption, use, and success of BI systems has grown substantially over the last two decades. The literature shows that organizations have largely failed to capture the benefits of BI systems and are looking for ways to exploit the value of the implemented systems (Ain et al., 2019).

Although there has been a lot of research on business intelligence, fewer studies discuss the development of data-based business intelligence in collaboration with several first-level executive bodies at the ministry level that carry out MSMEs empowerment activities and use business intelligence to synergize in the next MSME empowerment. This research aims to fill this gap by analyzing the external conditions and identifying the needs of MSMEs assisted by government agencies. Then this research developed a business intelligence prototype in the form of information visualization to assist MSMEs. With this analytical tool, government agencies obtain information about the problems and needs most faced by MSMEs so that they can be used to formulate policies for MSME empowerment programs. Meanwhile, technical units of government agencies can identify which MSMEs need to be developed according to their problems and needs. The contribution of this research is to provide additional literacy regarding business intelligence. While data helps owners make decisions, data visualizations help owners make sense of the data. It is in this way that data visualization allows decisions to be made, and projects can move forward (Bentley & Whitten, 2007).

Literature Review

PESTLE analysis

PESTLE analysis provides a framework for investigating and analysing the external environment for an organization. The framework identifies six key areas that should be considered when attempting to identify the sources of change (Turner et al., 2010). The PESTLE tool is a powerful technique for analyzing your environment. These six areas are Political, Economic, Social, Technological, Legal, and Environmental issues.

Business Intelligence for Analysis Needs

Today's business problems provide many opportunities for organizations to become more analytical and data-driven. Organizations have the opportunity to leverage advanced analytics to create competitive advantage. One type of analysis that can be used is business intelligence (BI). Business intelligence tends to provide reports, dashboards, and questions on business questions for current or past periods. BI systems make it easy to answer questions related to quarterly revenue, progress toward quarterly targets, and understanding how much of a particular product was sold in the previous quarter or year. These questions are usually closed-ended and explain current or past behavior, usually by combining historical data and grouping it. BI provides hindsight and some insight and generally answers questions regarding "when" and "where" events occurred. Depending on the organization's goals, an organization may start a BI project if it performs reporting, creates dashboards, or performs simple visualizations, or an organization may choose a Data Science project if it needs to perform more sophisticated analysis with disaggregated or varied data sets (Dietrich et al., 2015).



Figure 2. Comparing BI with Data Science

There are several main types of analysis that should be considered for BI solution development and can be used to create tools that support decision-making. Types of analysis include descriptive reporting, online analytical processing, data mining, predictive analysis, unstructured data analysis, and information visualization. For information visualization, it can be as geographic information systems and dashboards (Gendron, 2014).

MSMEs and Business Intelligence

The success of building business intelligence for MSME business actors can be seen from an organizational perspective, a process perspective, and a technology perspective. Top management support and competence of information technology managers and staff, a careful vision and business plan along with adequate budget support are critical factors for the success of business intelligence from an organizational perspective. Meanwhile, from a process perspective, critical factors that can support the successful development of business intelligence are effective change management, correct problem definition and business processes, properly defined user expectations, and change in business intelligence development is supported through the quality of data, integration of business intelligence systems with other information systems, technology support and other media, and flexible response of business intelligence to user needs and ease of business intelligence (Olszak & Ziemba, 2012).

Hatta et al., (2015) believe that there are four meta features so that business intelligence can be built for MSME business entities including technology, environment, organization, and motivation of top leaders. The character of technology includes eight parts, namely relative advantage, compatibility, complexity, testing, observation, innovation, knowledge related to information technology and budget availability. The environmental character has seven parts, namely business partners, level of competition, vendor selection, technology support infrastructure, government regulations, market trends, integrated companies and trusted alliances. The seven features inherent in the organization are the character of SMEs, collaboration, available organizational resources, managerial influence, organizational readiness, consumer needs and market needs. The character of the influence of the top leadership includes the innovation of managers and owners of the entity, the mastery of information technology by the managers and the adoption of information technology by the managers and owners of the entity.

Implementing business intelligence systems (BIS) by Croatian SMEs has several organizational risks such as a lack of human, technical and financial resources, as well as a quality

level of data management. In the technological dimension, SMEs recognize BIS compatibility with corporate information systems as a potential problem for companies wishing to engage in the BIS adoption process (Stjepić et al., 2021). Medium enterprises (MEs) and large enterprises looking to implement business intelligence need to consider organizational resources, infrastructure, business intelligence, and analytics (BI&A) teams, and strategic alignment, not just facilitating BI&A capabilities. Managers must also consider their personality and leadership style, as well as their involvement in operations (Bordeleau et al., 2020).

The use of business intelligence (BI) in business has resulted in better decision making as a result of improved data management processes. With a BI system in place, businesses can easily collect, store and process information whenever they need it. Companies operating in the tourism sector can gain high competitiveness if they adopt a BI system. Therefore, there is no doubt that the future of tourism companies lies in the adoption of BI, given the high efficiency and competitiveness that BI brings to the tourism businesses that adopt it (Nyanga et al., 2019).

Research Methods

Target Population and Data Sample

Data is collected from the Ministry of Finance which has 8 technical units and will carry out MSME empowerment activities. The sample in this study was 5 technical units. The data used in this study are primary data and secondary data. Primary data in the form of in-depth interview information to technical units at the Ministry of Finance regarding the conditions and data needs of each unit. In-depth interviews were conducted during July-Septemberr 2022. While secondary data is as data on MSMEs empowerment activities carried out by technical units during 2022.

Method of Data Analysis

The method used in this study is a qualitative method with case study analysts so that this study only uses parties who are directly related to the problems analyzed in this research. These related units are technical units within the ministry of finance that organize MSMEs empowerment activities. Case study research builds an in-depth, contextual understanding, relying on multiple data sources (Yin, 2011). Case study research is a qualitative approach in which researchers explore cases through detailed, in-depth data collection involving observations, interviews, audiovisual material, documents, and reports (Creswell et al., 2007).

The analytical method used in this study follows in part the approach of (Dietrich et al., 2015) which consists of 4 stages, namely:

- 1. Stage 1 Discovery: at this stage, researchers study the business domain, business processes of MSMEs empowerment activities and data collection and the technology used in processing the data.
- 2. Stage 2 Data Preparation: at this stage, researchers collect data from several technical units in the Ministry of Finance that carry out MSMEs empowerment activities, study data dictionaries, extract, and standardize data according to MSMEs data processing policies within the Ministry of Finance and enter data into databases.
- 3. Stage 3 Model Planning: at this stage, the researcher determines the types of analysis, explores the data to study the relationship between variables and then selects the key variables and the most suitable model.
- 4. Stage 4 Model Development: at this stage, the researcher builds and executes the model based on the work done in the model planning phase. The researcher also considered whether existing tools would be enough to run the model. Alternative tools used for model development are Power BI and Metabase software. At this stage the researcher discusses with the technical units to get the best model input and as needed.

These four stages of development are carried out repeatedly according to the idea of prototyping development to obtain the model that best suits the needs of the data analysis stakeholders.

Results and Discussion

The analysis conducted from earlier literature proves that the political, economic, social, technology, law and environment is significantly related to the strategic business planning for MSME using PESTLE. For example, Beatrix and Irawan considerate in decision making for MSME to use the aspect around them. PESTLE comes from outside, but they can be supported by them by the opportunity. The result of testing the first hypothesis showed that the political, economic, social, technology, law and environment is significantly related to the pandemic for MSME (Beatrix & Irawan, 2022). PESTEL analysis results show positive results for several factors, namely Politics/Policy and Economics, meaning these factors contribute to the advancement of the digital economy in Indonesia, encompassing Social, Technological, Legal, and Education parts. There are still gaps and inadequate regulations for the community and MSME actors (Badri & Amrina, 2023). Susilo also founded that the external factors such as governments actively promoted Bali as world-class tourism destination, while at the same time provided grant for green project (Susilo, 2020).

Based on the order of the Minister of Finance number 396/KMK.01/2022 about the Synergy for MSME Empowerment of the Ministry of Finance, the governance of the MSMEs program of the Ministry of Finance One includes the establishment of MSMEs empowerment policies, the establishment of a Joint Target List, implementing MSME program synergies, and tracking, evaluation, and reporting. Meanwhile, the governance of the MSMEs program can be seen in the following figure:



Figure 3. The Governance of The MSMEs Program of The Ministry of Finance One

Description of the number on the Figure 3:

- 1. Formulating of MSMEs empowerment policies
- 2. Establishment of MSMEs empowerment policies
- 3. Submission of the proposed Joint Target List
- 4. Harmonization of work plans/programs
- 5. Establishment of the proposed Joint Target List
- 6. Collaboration and Synergy
- 7. Service delivery
- 8. Utilization and evaluation
- 9. Submission of tracking and evaluation reports

Based on Figure 3, the existence of an integrated database is helpful when compiling and establishing MSMEs empowerment policies. At the operational technical level, the integrated database also helps in providing services to MSMEs. However, because the order of the Minister of Finance regarding the synergy of empowering MSMEs was only stipulated on September 29, 2022, there are no adequate tools to support the governance of MSMEs empowerment within the Ministry of Finance. Researchers have developed a collaborative business intelligence prototype expected to help synergize the empowerment of MSMEs in the Ministry of Finance. The stages of developing the prototype suggested by (Dietrich et al., 2015) include discovery, data preparation, model planning, and model development.

Stage 1 – Discovery

At this stage, the researchers conducted focus group discussions with several units within the Ministry of Finance that carried out MSME empowerment activities, namely representatives from the Directorate General of Taxes, the Directorate General of Treasury, the Directorate General of Customs and Excise, the Indonesian Export Financing Agency, Directorate General of State Assets Management, National Single Window Agency, and the Financial Education and Training Agency that in this case represented by researchers from the State Finance Polytechnic of STAN. In this activity, we explore information about the MSME empowerment activities carried out by each unit and how they manage the data. Based on the results of the discussion, we found information, including:

- MSMEs empowerment activities carried out by the technical units of the Ministry of Finance include bookkeeping training, export assistance, tax training and so on.
- MSMEs empowerment activities in the Ministry of Finance units have not been carried out in collaboration.
- Management of MSMEs activity data is partially carried out by a separate unit between the implementing unit and the data management unit. To get data on MSME activities whose data managers are separate, it takes quite a long time.
- Management of MSMEs activity data in each technical unit, some using an integrated database system and a simple database.
- National Single Window Agency appointed to provide MSME data integration systems at the Ministry of Finance has developed a website that displays the profiles of MSMEs assisted by all units of the Ministry of Finance.
- The MSME data integration process within the Ministry of Finance uses data input, data upload and host to host mechanisms in the National Single Window Agency data warehouse.
- Updating MSME data in the data warehouse has not been carried out sometimes.

Stage 2 - Data Preparation

Based on the order of the Minister of Finance Number 396/KMK.01/2022, data on MSMEs assisted by the Ministry of Finance unit has information on the identity and entities of MSMEs actors containing information including:

- a. Main Data
 - 1) Business entity name.
 - 2) Business brand name.
 - 3) Business sector.
 - 4) Types of products.
 - 5) full name of owner/manager.
 - 6) type of business (individual/entity).
 - 7) ID Number (NIK).
 - 8) Business Number (NIB).
 - 9) Tax ID Number (NPWP).
 - 10) Mobile phone number.
 - 11) Business address.

- 12) City/District
- 13) Province.

b. Support Data

- 1) The name of the MSME empowerment program.
- 2) Empowerment year.
- 3) Program building unit.
- 4) E-mail address.
- 5) Social media address.
- 6) Business license.
- 7) Business license date.
- 8) Type of certificate held.
- 9) Certificate type and validity period.
- 10) Total assets.
- 11) Sales amount.
- 12) Number of workers.
- 13) Business problems.
- 14) Empowerment needs.

At this stage, researchers collect and analyze data on MSMEs empowerment activities carried out by the technical unit of the Ministry of Finance. Based on the researcher's analysis, MSMEs data conditions and needs at the Ministry of Finance is:

- The data that has been collected comes from the Directorate General of Customs and Excise, the Indonesian Export Financing Agency, Directorate General of Taxes, and the Financial Education and Training Agency.
- MSMEs data for each Ministry of Finance unit has a variety of data elements. For example, data sourced from the Directorate General of Customs and Excise has 14 data elements, data sourced from the Indonesian Export Financing Agency has 13 data elements, data sourced from Directorate General of Taxes of 3 data elements, and data sourced from the Financial Education and Training Agency has 6 data elements
- Most MSMEs data elements do not meet MSMEs data standards and still need to be cleaned. For example, city, district and provincial data are combined into one data element, data element NPWP and NIK are combined into one data element. There are different names of export destination countries, for example America and the USA, Singapore, and Singapura and so on. There are also different names for provinces, districts, cities, for example Aceh and NAD.
- The technical unit of the ministry of finance requires complete and detailed data that can help provide MSME empowerment service activities.

The collected data with all its conditions are cleaned, separated and combined into one data file under the standard data elements regulated in the Minister of Finance Decree. To help with the process, the researcher used excel software.

Stage 3 - Model Planning

At this stage, the researcher determines the analysis in accordance with the needs of the Ministry of Finance in formulating MSME empowerment policies. And according to the researcher, the type of analyst is information visualization including: Geographic Information System and Dashboard. The Geographic information system is used to map the export destinations of MSMEs and MSME resources. While the dashboard is used to present several dimensions of data, namely the proportion of MSME coaching units, programs, and MSMEs needs.

At this stage, the researcher makes an initial design of information visualization by selecting several elements from the 27 data elements in the Minister of Finance Decree and then designing the dimensions of the data.

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Stage 4 - Model Development

Based on the initial design made at the planning stage, the researcher developed an initial prototype of information visualization using Power BI software. This initial prototype is presented to the technical unit to get input and information about the model in accordance with the needs of the technical unit in carrying out MSMEs empowerment activities. The most basic need for technical units is how this information visualization tool can provide concise and detailed information that can help increase the synergy of empowering MSMEs within the Ministry of Finance. Based on these needs, the researcher evaluates the initial prototype and returns to the data preparation stage, model planning, and model development to adjust the prototype and user needs. To meet these needs, several data elements have developed. Changes to these data elements include:

Before	After
Business sector	separated into Leading Business Sector and business sector details
Type of product	separated into superior product types and product type details
Business problem	separated into main constraint and constraint detail
Empowerment needs	separated into major needs and detailed requirements
The name of the MSME	separated into superior empowerment programs and program details
empowerment program	

Table 1. Data Element Chang	ge
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Meanwhile, adding data elements to meet the data needs of technical units, among others:

- KUR status
- Export Status
- Export areas
- Export destinations

Based on the adjusted data elements, a second prototype was developed using Metabase application technology and MySQL database technology. This second prototype consists of 3 layers, namely, :

- a. 1st Layer: Concise Information, presenting concise information that can assist executives in making decisions quickly. Layer 1 consists of several indicators/dimensions, namely: MSMEs fostering unit, MSMEs leading sector, MSMEs resource distribution map, MSMEs KUR status, MSMEs export status, MSMEs export areas, MSMEs flagship program, MSMEs main constraints/problems, and MSMEs main needs.
- b. 2nd Layer: Detailed Information, presenting details of several indicators in Layer 1. For example, the indicator of export areas when clicked will display the export destination country, the indicator of the main problems of MSMEs when clicked will display the MSMEs problem matrix, and the MSMEs needs indicator when clicked will display the MSMEs needs matrix.
- c. 3rd Layer: Action Information (Detailed data per MSMEs), presenting information in the form of raw data. The information presented in layer 3 can be used by technical units of the Ministry of Finance to synergize in implementing MSMEs empowerment activities. For example, MSMEs assisted by the Financial Education and Training Agency need information/assistance related to easy import facilities, so through this 3rd. Layer dashboard, The Directorate General of Customs and Excise gets information on which MSMEs need information or assistance activities related to easy export facilities.

Some illustrations of each layer can be seen in the following figure:



Figure 4. 1st Layer: Concise Information



Figure 5. 2nd Layer: Detailed Information

detail_masalah	BAHAN BAKU	Data tidak Tersedia	FINANSIAL	PEMASARAN	Pembukuan	PERIZINAN	PRODUKSI
AKSES PASAR				195			
BARANG JADI							3
BARANG MODAL							2
Data tidak Tersedia		140					
INFORMASI PEMBLAYAAN			з				
KEMAMPUAN FINANSIAL			1				
KUALITAS							1
LARTAS						з	
LEGALITAS						9	
LOGISTIK	8			32			
PEMBELIAN	1						
PEMILIHAN SUPPLIER	11						
PENJUALAN				16			
PROSEDUR EKSPOR IMP						22	
Pembukuan					298		

Figure 6. 2nd Layer: Detailed Information on MSME Problems

- tahun	nk -	nama_entitas ~	alamat -	nohp ~	medsos ~	unit,pembin
2,022	2,142496+15	CVTAGASI	Jalan Persada No 17 Banjar Pengipian, Kelurahan Kerobokan	Tidak tersedia	Data Tidak tersedia	DJBC
2,022	2,59137E+15	CV. Temas Mulia	Jalan Sri Ratu Syafatuddin Nomor 143, Peunayong, Kecamatan Kuta Alam, Kota Banda Aceh, Provinsi Aceh, Indonesia	Tidak tersedia	Data Tidak tersedia	DJBC
2,022	2,73504E+15	CV. Panun Star	Fatanlap Blok. 000 No.000 RT. 004/ RW. 005 KLALIGI, SORONG MANOI	Tidak tersedia	Data Tidak tersedia	DJBC
2,022	3,04464E+15	UD. Madu Hayya	Jalan Mate ie, Komplek Haji Lidah, Keutapang, Kecamatan Lhoong, Kabupaten Aceh Besar, Provinsi Aceh, Indonesia	Tidak tersedia	Data Tidak tersedia	DJBC
2,022	3,15265E+15	PT ANARGYA COCO INDONESIA	Kelurahan Kuningan Timur, Kecamatan Setlabudi, Kota Administrasi Jakarta Selatan, Provinsi DKJ Jakarta	Tidak tersedia	Data Tidak tersedia	DJBC
2,022	4,387876+15	Koperasi Elber Suth Cokran	JI, Warusi No.08 RT 003/ RW/001, Abreso, Ransiki	Tidak tersedia	Data Tidak tersedia	DJBC
2,022	4,62311E+15	CV Izi Muda Perkasa	Menganti, Kub Gresik	Tidak tersedia	Data Tidak tersedia	DJBC
2,022	7,19905E+15	Bedhag Kopi	JI Jawa II no 4 RT 03 RW 36 Sumbersari Jember Jawa Timur	Tidak tersedia	Data Tidak tersedia	D/BC
2,022	7,80599E+15	Kopi Rajawali Persada Poktan Kopi Pasir Manglayang	Sukatari, Somedang	Tidak tersedia	Data Tidak tersedia	D/BC

Figure 7. 3rd Layer: Action Information - List of MSMEs with Licensing Problems

In the model development stage, researchers faced various obstacles and challenges, including:

- The data elements collected are incomplete to meet the information needs of the technical unit. This is because the MSME empowerment activities have been carried out by the technical unit prior to the issuance of the Minister of Finance Decree. So that the data in each technical unit is not in accordance with the standard data elements as referred to in the applicable regulations. Regarding this condition, researchers cleaned the data and standardized the data structure in accordance with applicable regulations. For incomplete data, researchers use dummy data to complete it so that the data is ready to be transferred into a business intelligence database.
- Data collected and sufficient is only from 3 technical units of the Ministry of Finance. This is because some units take longer to deliver data.
- The collaboration business intelligence prototype presents data from a database that uses the NIK data element as the primary key. This means that in one database it is only possible for one MSME to be fostered by one technical unit. Meanwhile, in practice, it is possible for one MSME to be fostered by more than one technical unit. So, it is still necessary to consider alternative models.
- Discussion of business intelligence models is still limited to 3-5 technical units. Meanwhile, the Ministry of Finance has 8 technical units that have the potential to synergize in empowering MSMEs. The more technical units are involved in model discussions, the better the business intelligence model developed will be because it presents more complete and

comprehensive information. However, this model is a good innovation and can continue to be developed which can not only be utilized by technical units in a government agency but also in a wider scope can be utilized by all government agencies in Indonesia.

Conclusion

Business intelligence for the synergy of empowering MSMEs within government institutions can be developed in the form of information visualization consisting of geographic information systems and dashboards. This business intelligence consists of 3 layers, namely the first layer provides concise information, for example MSMEs' units, leading MSME sectors, MSME resource distribution map, KUR status of MSMEs, export status of MSMEs, MSME export areas, superior MSME programs, main obstacles/problems for MSMEs. , and the main needs of MSMEs. Then the second layer presents detailed data from several indicators in the first layer. Meanwhile, the third layer presents information in the form of raw data. The information presented in layer 3 can be utilized by technical units of ministries/government agencies to synergize in carrying out MSME empowerment activities. For example, certain technical units require data on which MSMEs need export and import guidance, then through the Layer 3 dashboard information is provided on which MSMEs need assistance regarding exports and imports.

Theoritical Implication

This research can enrich literacy regarding information development systems and business intelligence.

Managerial Implication

Government institutions that have not yet implemented business intelligence technology that supports MSME empowerment activities can develop this prototype into a fully functional system and can be used for synergistic empowerment of MSMEs within their technical units.

Future Research

The business intelligence model has just been developed based on data and discussions from 3-5 technical units in the Ministry of Finance and does not yet reflect the data and information needs of the Ministry of Finance as a whole. Meanwhile, the Ministry of Finance has 8 technical units that have the potential to synergize in empowering MSMEs. Further research can add more technical units and MSME actors involved in discussing intelligence design. With more technical units involved in discussing models, the better the business intelligence models developed will be because they provide more complete and comprehensive information. If this design is developed into business intelligence that can be operationalized, it is important to study more deeply the impact of using this analytical tool on improving the economy of MSMEs.

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