Advances in Economics, Business and Management Research, volume 209
Proceedings of the International Conference on Public Organization (ICONPO 2021)

Mapping the Public-Private Partnership in Digitalization of PT. Pertamina Gas Station in Indonesia

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ABSTRACT
This study aims for mapping the digitalization of PT. Pertamina gas station's public-private partnership in Indonesia. The digitalization of gas stations initiated by PT. Pertamina plays a material role in developing a partnership between the government and private sector. How does PT. Pertamina adopt digitalization in gas stations to gain the public-private partnership? This study attempts to answer that issue. This study mapped the potentials of public-private partnerships to support the digitization in Pertamina. This study employed qualitative analysis to investigate how PT. Pertamina articulates the partnership to support digitization of gas stations in Indonesia. A systematic review was conducted to analyze the data based on the original article, review article, and report article in 2020 as the era of COVID-19. The study was presented in three parts. The first part was an introduction, discussing the importance of mapping the potential partnership and strategy role for public-private partnership in PT. Pertamina. The second part was discussing any problem and enhancing the quality performance of the partnership. At last, the conclusion of this study expected that the materials presented in this article may generate a deeper understanding of mapping the Public-Private Partnership in the Digitalization of PT. Pertamina gas station during COVID-19 and had a novelty to improve the quality control of digitization policy in Indonesia.

Keywords: *Public-Private Partnership; Digitalization; Gas Station; PT. Pertamina; Indonesia*

1. INTRODUCTION

A public-private partnership is a relationship between government organizations and companies as business actors [1]. In this case, such as the digitalization of Gas Station or Public Fuel Filling Stations (SPBU) carried out by Pertamina which leads to PT. Telkom. The digitization of Pertamina's gas stations is a government program carried out with the aim of improving Pertamina's services to consumers to improve the income, expenditure, and income of gas stations from the sale of fuel oil (BBM) to be faster and more accurate [2]. Pertamina's digitization aims to record the effectiveness of BBM to the public to make it more and more efficient [3]. This program is one of the surefire solutions to maintain a guaranteed supply of fuel throughout the archipelago and maintain the accuracy of supply with strict subsidies. Although the government is fully aware that the business sector and the use of information technology are indispensable to support the needs of society in the modern era, which prioritizes speed, practicality, convenience, security, and comfort in activities [4]. Digitization of gas stations is one form of change that must be considered by organizations in running their business, according to [5], [6] at least five forms of change that will continue to be experienced by organizations or companies, namely;

1. Technological change. This change is related to the organization's production process designed to make a product efficient;
2. Product changes. Companies can create innovative ideas for products that match market needs to remain abreast of trends that occur in the market;
3. Structural changes. Structural changes are influencing factors such as strategy, environment, technology, and involvement;
4. Changes in culture or human resources.

Through the use of digital devices, all existing processes can be recorded through the existing system, from seller records to the stock of fuel available at each gas station. The main purpose of digitizing gas stations is to control the sale of subsidized fuel. The digitization of gas stations has a positive impact on Pertamina because it will provide accurate and real-time data and information. The data and information will be used by Pertamina as a tool to make strategic decisions in ensuring the reliability of supplies and services for the community [7], [8]. By the end of 2020, Pertamina had completed digitizing 5,518 nozzles of gas stations, 4,062 Automatic Tank Gauge (ATG), 2,919 electronic data capture (EDC), and 1,138 gas stations that had recorded vehicle registration numbers manually using EDC. Before digitizing the gas station distribution process, all activities were carried out manually, one of which was dipping or checking the oil level in the storage tank, using a depth tape tool consisting of a meter and a displacer pendulum, each of which was smeared with oil paste and water paste. When touching a different liquid surface, the paste will change color, the color change on the measuring meter is used as a measurement indicator. By digitizing these measurements, it is enough that ATG (Automatic Tank Gauge) is a measurement with technology. As a result, the measurement system is fully automated, and all that is required is viewing the results of parameter measurements on a computer screen. In general, the objective of this study is to contribute to a theoretical knowledge of the factors that influence sustainable city development and the success of public-private partnerships. Stakeholder analysis in PPP projects in the context of sustainability was recognized as a study gap by the researchers. There is a limited number of research works concerning interdisciplinary debates about the concepts of sustainable urban development [9].

The implementation of the gas station digitization policy that has been designed by the government since 2015 and set since 2018 has an impact on PT. Mariatun Kusuma Jaya, which is located in the center of the city of Tegal, is the executor of the distribution of gas stations to the community to determine and balance the company's internal digitalization. This digitalization transformation will also certainly have an impact on optimizing the company in providing services to the community and continuing to carry out the policies set by the government related to the provision of information technology or what is known as the digitization of gas stations. This study aims to determine the optimization of the use of gas station digitization at SPBU 4452121 under the auspices of PT. Mariatun Kusuma Jaya. Of course, this research also wants to see how the digital optimization carried out by PT Mariatun Kusuma Jaya as the executor of oil distribution to the community balances itself with government policies and company quality assurance. Therefore, the development of quality management in the context of digitalization can be achieved.

2. THEORETICAL FRAMEWORK

2.1. Public-Private Partnership

Public-private partnerships (PPPs) have been widely employed to accomplish social and economic infrastructure projects. Effective performance measurement is critical to their success. The strategic purpose of country management is to assure long-term development, which necessitates a careful balancing of scarce resources. The balance relates to human resources from an operational standpoint, particularly initiatives implementing sustainable development. They can be characterized as either public or private, and their collaboration is referred to as Public-Private Partnership (PPP). The research proposes a conceptual framework of stakeholder analysis in PPP projects based on the concepts of sustainable development and stakeholder theory. More broadly, the research seeks to advance theoretical knowledge of the causes of sustainable city development and PPP success criteria.[10]

This study examined Public-Private Partnership (PPP) in the context of sustainable development as a strategic aim of city development, emphasizing the balanced use, creation, and maintenance of finite human resources at the operational level [11]. Human and social resources are unique types of resources because, according to endogenous growth theories, the involvement and involvement of all stakeholders determine sustainable development, and resources become capital only when specific benefits are generated. Participation and involvement may be facilitated, and advantages may be produced, through public-private partnership (PPP) initiatives. On an operational level, sustainable infrastructure projects carry out a sustainable city development plan. With a foundation in sustainable development, the research is motivated by the need for a novel approach to stakeholder analysis in PPP projects, emphasizing the need for understanding as well as involving PPP stakeholders in sustainable urban development. The study posits that a single stakeholder's comprehension and participation in a project determines the project's success and, as a result, sustainable development. The term "public-private partnership" (PPP) refers to a method of contracting infrastructure projects. It is often a long-term partnership between the public sector as the procurer and purchaser and a number of private sector enterprises that design, build, and maintain the infrastructure as well as offer certain related services. PPP is associated with many arrangements that are inspired by

legal traditions. In general, the agreements are based on a straightforward “design-build” (DB) contract for a public utility. The contract can take numerous forms, with rewards distributed proportionally to the parties' resources, obligations, and risk accepted. In this approach, providing public services and infrastructure results in a win-win situation[7].

A public sector body (national or local government) often develops a PPP project through a bidding (public procurement) procedure for project agreement. A public sector entity in charge of infrastructure delivery functions as a grantor, granting the right to supply infrastructure services under a PPP. It also gains the authority to supervise the administration of service supply. Simultaneously, public sector bodies serve as regulators by developing regulatory frameworks and providing permits and licenses [12]. Sponsors are private equity investors. A project sponsor might be public authority (grantor). A joint-venture structure must be agreed upon when more than one sponsor is involved. Private firms, such as contractors, suppliers, and operators, are common sponsors. As sponsors, public utility firms (purchasers) who provide the product to ultimate clients can also contribute to the initiative. Other investors may include investment funds, institutional investors, state agencies, and international institutions with varying interests in either a reasonable rate of return or stimulating local and regional development [13].

2.2. Digitalization

Performance measurement development in the context of digitalization is linked to the widespread use of digital accomplishments and network activities of stakeholders who are now actively involved in organizational life and the building of its status and image in the business space [6]. Furthermore, stakeholders' roles include an appraisal of the firm as well as an assessment of its competitiveness. Quality management has various aspects that are prioritized, including consistency, adaptability, technology, availability, and innovation. Because digitalization has now infiltrated all aspects of human and societal life, digital transformation is both inevitable and inescapable. The state-owned energy holding firm PT. Pertamina has set a date of the end of this year to complete the digitalization of the gasoline nozzle, which is two years later than the previously set target of December 2018. Only the propagation of the COVID-19 virus has an impact on this. PT. Pertamina has started the Digitization of fuel nozzles utilizing Automatic Tank Gauging (ATG) technology, allowing Pertamina to have real-time data on the company's daily fuel sales at each of Pertamina's partners' gas stations. Digitization encompasses numerous factors. First, non-cash payments will be accepted using the LinkAja application. This approach was adopted in 2019 through the MyPertamina app, and other e-wallet choices may be engaged. Second, digitalization is expected to increase the accountability of data on the distribution of certain types of fuel oil (JBT) / subsidized fuel types of diesel and types of special assignment fuels (JBKP) for premium types, thereby preventing the misuse of subsidized fuel, which results in over quota.

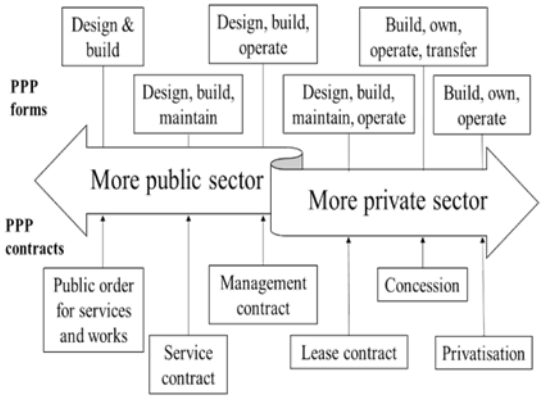

Fig 1. Designing Public-Private Partnership

Source: [12]

In terms of the daily quota being reached, the installed sensing system will immediately cease the flow. Furthermore, PT. Pertamina can monitor customer fuel purchase transactions to determine when the supply of gasoline at the gas station necessitates sending supplies back to avoid shortages[2]. The arrival of digitization, with all of its benefits, is undoubtedly eagerly anticipated by the community. In addition to simplifying non-cash payments, which will boost efficiency, digitizing the nozzle will improve the precision of subsidized gasoline distribution[14]. Now, the public is only waiting for the digitization process to be completed before responding positively to Pertamina's efforts to improve service quality and develop a competitive edge. As a result, it is believed that Pertamina will be able to keep its promise of comprehensive digitization, which will be applied to all of its gas stations [3].

However, with the rise of digitalization, it is a challenge for PT. Pertamina's partners to enhance the quality management of their firms in order to remain competitive with other Pertamina's partners and have appropriate internal resources. This study will look at how the quality management owned by PT Mariatun Kusuma Jaya, Pertamina's partner in the digitization carried out by PT. Pertamina, would create internal system contraction and transformation, in terms of infrastructure, human resources, and sales level. The

state-owned energy holding company PT Pertamina, has designed a schedule to complete the digitization of the fuel nozzle by the end of this year, two years later than the previously determined deadline in December 2018. Digitization refers to several aspects. First, the implementation of non-cash payments through the LinkAja application. This method was implemented in 2019 via the MyPertamina app, and it is possible that other e-wallet options to be involved. Second, digitalization is expected to increase the accountability of data on the distribution of certain types of fuel oil (JBT) / subsidized diesel fuel and special assignment fuel types (JBKP) for premium types, to be effective in preventing misuse of subsidized fuel which results in over quota. The installed sensory system will automatically stop the flow if the daily quota has been met[15].

In addition, PT. Pertamina can also monitor consumer fuel purchase transactions, to quickly find out when the stock of fuel in the gas station requires sending supplies back to avoid shortages. The trend of innovation in complex computing and digitization of manufacturing processes and process activities such as cloud manufacturing (CMfg), which has emerged as a new business paradigm. These innovations enable dynamic scalability and management of resource virtualization as a consumption service via the Internet, in such a way as to understand manufacturing activities as a service. Apart from major research activities on individual concepts such as digitization, digital transformation, Industry 4.0 applications, etc., not all relevant dimensions between them have been analyzed in depth. The emergence of digitalization with all its benefits is certainly eagerly awaited by the community. In addition to facilitating non-cash payments which will increase efficiency, digitizing the nozzle will also increase the accuracy of the distribution of subsidized fuel. Now, the public is just waiting for the completion of the digitization process and giving a positive response to Pertamina's efforts to improve service quality, as well as build a competitive advantage. Therefore, it is hoped that Pertamina will also be able to fulfill its promise in an effort to complete digitalization which will be applied to each of its gas stations[16]. However, this is a challenge for Pertamina's partners to improve the quality management of their companies to remain competitive with other Pertamina's partners and have adequate internal resources with the emergence of digitalization. This research will see how the quality management owned by PT Mariatun Kusuma Jaya as Pertamina's partner in the digitalization carried out by PT Pertamina, will cause contraction and transformation of the system internally, both in terms of infrastructure, human resources, and level of sales.

In particular, the researchers are interested in understanding whether digitization can improve organizational knowledge of organizations, helping to improve their environmental performance. Due to the limitations of the research in the field, they believe that this is done through a consistent increase in institutional knowledge of how sustainable development is carried out; in particular, when the main objective of the action taken does not address sustainability. Then, from several previous studies, no one has discussed the theme of digitizing gas stations in depth from the aspect of optimizing company management. The focus of this study was to examine whether digitalization can improve sustainable organizational performance [17].

3. METHOD

This study is a descriptive study with a normative framework in order to better understand and engage stakeholders in sustainable urban development. The framework established can be used to build a model that can be applied and tested in the future. This theoretical study was based on a literature review and critical analysis and construction methodologies. The innovative approach of the research was based on the integrated application of already known concepts of sustainable development, stakeholder theory, and Public-Private Partnership, which are all necessary to create a new approach to the management of city development consistent with the known facts. Additionally, in selecting relevant reference sources and processing large amounts of data NVIVO 12 was employed as an engine to artificialize the resource

4. FINDINGS AND RESULT

Knowing that digitalization in terms of fuel distribution has the right to make the bureaucracy get better and against the corruption in this section. There is an actor behind this successful digitalization in fuel distribution. First, BPH Migas is known as a downstream oil and gas regulatory agency; second, PT Pertamina is known as Oil distribution for energy sustainability; third, PT Telkom is known as a facilitator of gas station digital infrastructure providers, in order to the data center and connectivity.

The development of technology in the current digitalization era has encouraged PT Pertamina (Persero) to innovate in its business continuity, especially in the downstream sector. Some examples of downstream business development innovations range from digitizing gas stations, the My Pertamina application to managing social media, which is currently one of the platforms, Instagram, which has 498 thousand followers. Innovation in technology and digitalization for Pertamina is one of the strengths in running the energy business in Indonesia. Through social media platforms, for example, PT

Pertamina can reach stakeholders and consumers to remote areas and even locations far from gas stations. Due to the existence of social media, they can interact with Pertamina and this study can provide solutions for energy availability there. The program is called a one-price BBM.

In the arena of the importance of innovation in technology and digitalization, an institution or company that does not follow the developments of the current digitalization era will slowly be abandoned by its stakeholders or consumers. Pertamina, as a state-owned enterprise, has full responsibility for energy sustainability in Indonesia. Technological innovations and digitization were continued to be done in an effort to meet the community's need for energy. The digitization of this gas station includes the provision of digital gas station infrastructure, Data Center, and Connectivity at 5,518 gas stations or 75,000 nozzles throughout Indonesia, as well as maintenance for the duration of the agreement. Through the digitization of gas stations, Pertamina and Telkom also agreed to develop a fuel distribution platform to monitor the stock of fuel at the gas station storage tank, the amount of fuel released through the nozzle, and revenue from fuel sales. This collaboration can be carried out thanks to an SOE synergy collaboration between PT Pertamina (Persero) and PT Telkom Indonesia (Persero) Tbk, along with support from the Ministry of SOEs, the Ministry of Energy and Mineral Resources, and BPH Migas. The synergy between Pertamina and Telkom is expected to support the government's efforts to monitor the distribution of subsidized fuel in real-time.

The digitization of gas stations is a manifestation of SOE Present for the Country, where Telkom and Pertamina as SOE are committed to supporting the process of monitoring and verifying the distribution of subsidized fuel. This is in accordance with the mandate of Act no. 22 of 2001, namely to provide energy evenly at affordable prices for all Indonesian people.

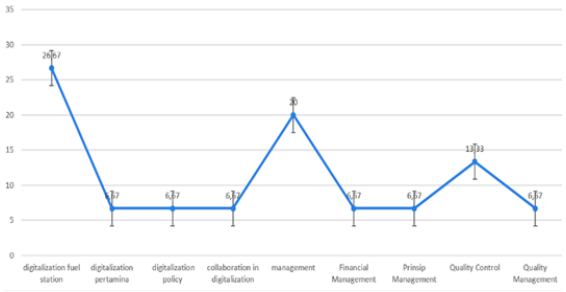

Fig 2. The coverage of Digitalization SPBU

Source: Primary Data (2021)

Figure 1 explains that in terms of digitalization SPBU, digitalization of the fuel station has the highest coverage in media about 26,67%, the result means that regarding digitalization SPBU, the essential one is about how digitalization can function in fuel stations. The second one is about management; the management of digitalization could cover all the processes of running the program of Digitalization in SPBU. Besides, quality control and quality management have value to running the system in digitalization which collaborated with PT Pertamina and PT Telkom as the state-owned enterprise who has the right to control the program. However, the main object that has value to run the program of digitalization within an actor is about digitalization fuel station, management function, and quality control as shown in fig 2.

Source: Primary Data (2021)

Fig 3. Mapping the main value of Digitalization SPBU

There is some restriction once the government has to complete the system in 2020. The program has been implemented since 2018 till today, while the government estimated the time and supposed to end in 2020, there is an unprecedented time that digitalization in 2020 could not continue to be done well due to COVID-19, and the actors who are working in the program should be postponed until unprecedented time.

Table 1. Pearson correlation coefficient

Variable A	Variable B	Pearson correlation coefficient	Significancy
digitalization	BPH Migas	0.899472	Significant
PT. Pertamina	BPH Migas	0.870752	Significant
partnership	government	0.860391	Significant
PT. Pertamina	digitalization	0.853923	Significant
PT Telkom	digitalization	0.825738	Significant
PT. Pertamina	PT Telkom	0.775774	Significant
PT. Pertamina	government	0.75365	Significant
government	digitalization	0.749376	Significant
PT Telkom	BPH Migas	0.742233	Significant
partnership	digitalization	0.720073	Significant
government	BPH Migas	0.705786	Significant
PT Telkom	government	0.69166	Not Significant
PT Telkom	partnership	0.631916	Not Significant
PT. Pertamina	partnership	0.592535	Not Significant

Source: Primary Data (2021)

Therefore, Table 1 presents the significant correlation between two variables and shows that PT Telkomsel and government are not significant since other actors who handle the partnership with the government which is BPH Migas. PT Telkom and PT Pertamina are not collaborating independently, since there is a BPH Migas who run the program and work it well to collaborate with the government and state-owned enterprise.

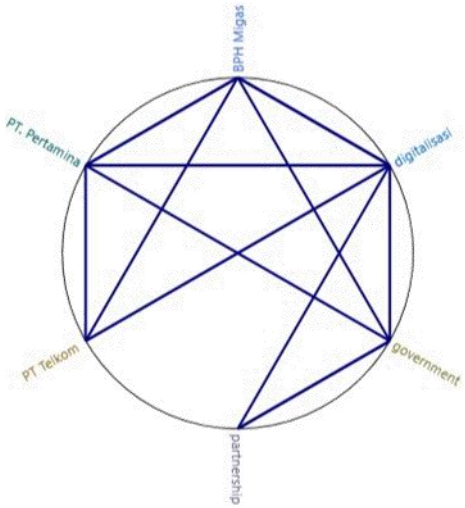

Fig 4. Mapping the Public-Private Partnership in Digitalization

Source: Primary Data (2021)

Digitalizing the nozzles at Pertamina's gas stations will make it simpler for BPH Migas to monitor and record all volumes of Public Service Obligation (PSO) and Non-PSO gasoline delivered through gas stations. The Downstream Oil and Gas Regulatory Agency (BPH Migas) continues to tighten its grip on the delivery of discounted gasoline, one method being the digitization of gas stations. As a consequence, BPH Migas collaborates with PT Pertamina and PT Telkom Indonesia in the creation and implementation of the gas station digitization initiative, to subsequently utilize the generated data as a monitoring tool. The digitalization of this gas station must, of course, be backed by a strong signaling system to ensure the accuracy of the resultant data. There are three models for the solution. First, it will be held throughout Indonesia utilizing optical fiber. Second, by leveraging signaling system support from Telkomsel or network businesses still affiliated with Telkom. Third, if the location is really difficult to access, Telkom will rely on satellites since Telkom has a satellite with a transporter that can sustain it. Telkom is the largest network provider in virtually all of Indonesia. The Supervisory Committee of BPH Migas According to Lobo Balia, this application provides information and statistics on the distribution of JBT and Special Assignment Fuel Types (JBKP). Thus, BPH Migas may utilize them as monitoring tools. Of course, this software can assist by using information technology to automate recording and reporting. Later, this program is intended to be utilized as a tool to manage JBT consumption, particularly in the execution of the policy of restricting purchases to the road vehicle user sector that uses JBT type of diesel oil. Furthermore, this program is utilized to estimate the amount of gasoline supply availability. Hence, fuel shortages at the distributor or gas station level may be avoided. Prior to the digitalization of gas stations, Pertamina lacked reliable data on the distribution of subsidized gasoline across Indonesia. However, the soft launch of this program is regarded as a significant step for BPH Migas in implementing openness in monitoring JBT distribution to ensure that it is on track and has the appropriate amount.

5. CONCLUSION

The digitalization of Pertamina’s gas station nozzles will make it easier for BPH Migas to track and record all volumes of PSO and non-PSO gasoline delivered through gas stations. The Downstream Oil and Gas Regulatory Agency (BPH Migas) continues to strengthen its hold on the delivery of discounted gasoline through digitalization. As a consequence, BPH Migas collaborates with PT Pertamina and PT Telkom Indonesia in the creation and implementation of the gas station digitization initiative. Therefore, the generated data may subsequently be utilized by BPH Migas as a monitoring tool. The

digitalization of this gas station must, of course, be backed by a strong signaling system to ensure the accuracy of the resultant data.

ACKNOWLEDGMENT

We would like to express our gratitude to the head of the department of master of business administration, Universitas Diponegoro Indonesia who supported us in this research.

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