



# Factors Affecting the Use of Online Applications for Business Process Reengineering (BPR) Acceleration in Micro, Small and Medium Enterprises (MSMEs) as a Consequence of Covid-19 Pandemic

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## ABSTRACT

The aim of this research is testing the factors that affect the use of online applications for the acceleration of Business Process Reengineering (BPR) system in Micro, Small, and Medium Enterprises during Covid-19 pandemic will be the next question. This study used primary data from a web-based survey—Google Form—to keep up with current technology and to comply with COVID-19 Social Distancing protocol and to stay alert. We make observation of MSMEs was conducted in Yogyakarta. The results of analysis presented earlier have led us to conclude that (1) personal factors do not affect the use of online application, (2) organizational factors do not affect the use of online application, (3) online application success affects the use of online application, and (4) emotional Reaction affects the use of online application.

**Keywords:** online, applications, pandemic, reengineering, enterprises.

## INTRODUCTION

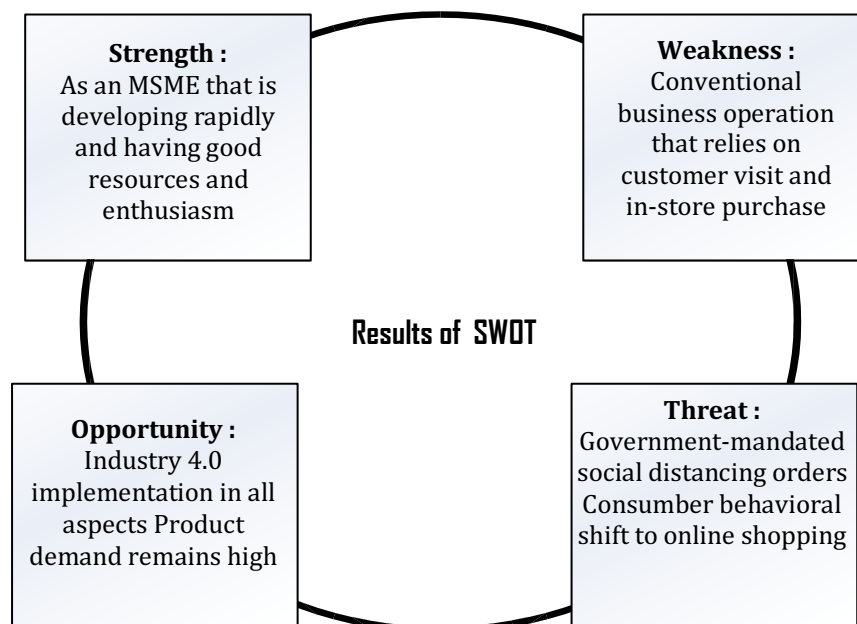
The outbreak of Corona virus (Covid-19) has disturbed the global economy, and Indonesia is not an exception. Indonesia's economic growth is expected to shrink 4.7 - 4.8 percent in the first quarter of 2020. For the solutions, the Indonesian government has taken numerous measures to strengthen the national economy, such as: devising synergistic policies, global financial market integration, enabling the digital economy, and changing household and corporate behavior. However, it should be noted that the economy still experiencing contraction following the Covid-19 outbreak. One of the key indicators of global economic contraction is the Gross Domestic

Product (PDB), as the market value of all goods and services produced in Indonesia during the Covid-19 pandemic.

Based on the survey of MSMEs in Indonesia, 97 percent of them were negatively impacted by the Covid-19 pandemic. Out of those impacted, 75% experienced a significant decline in sales. Moreover, 51% of the MSMEs strongly believed that their business will survive only for the next three months or less. Sixty seven percent of MSMEs found it difficult to secure emergency funding, and 75% were unable to decide what policies to make during the crisis.

One of the causes of decline in sales in both MSMEs is the government's "work from home" policy in effort to implement social distancing. During social distancing, people are advised to distance themselves from others outside and, thereby, limit their opportunities to buy products. In fact, the demand for their products (TIKs, breads and cakes) remains high. This indicates unmistakably that business operation might or must change due to the changes in consumer behavior or current situation. Consumer behavior is starting to change in a situation that restricts the movement of people. Therefore, the stocking of food pantry and TIKs should be adjusted accordingly. While people can freely go out for shopping before covid-19 outbreak, now they need to order some items online due to the pandemic. Even if consumers decided to buy the items offline, they tend to choose the nearest stores.

Among the strategies to deal with this issue include revisiting the business, identifying the customer base and their needs, simplifying the business process, classifying the best-selling products, making a product catalogue in digital formats, increasing the inventory stock, and offering workplace incentives for best-performing employees in current situation. We conducted a preliminary SWOT analysis based on the problems and opportunities identified. The results of SWOT analysis are presented in Figure 1.



**Figure 1. Results of SWOT Analysis after Preliminary Observation**  
Source: Data processed 2020

Government advice to work from home applies to everyone. People are flocking to familiar social media platforms as the quickest and cheapest options for socializing. This leads all those concerned, unwittingly, to an accelerated BPR that will soon be adopted permanently in the present and future. Why is that so? That is because the system performs efficiently. What factors that affect the use of online applications for the acceleration of Business Process Reengineering (BPR) system in Micro, Small, and Medium Enterprises during Covid-19 pandemic will be the next question.

## **THEORETICAL FRAMEWORK**

### **Economic Condition**

Structural changes in the global economy are weakening the world economy and, at the same time, pose a challenge to the domestic economy in 2019. Economic growth in 2019 was not as strong as that of earlier years, despite its resiliency due to well-sustained domestic demand and maintained stability. This development is the result of a greater synergy between government, Bank Indonesia, and related authorities (BI a, 2019).

Quite apart from Covid-19, Indonesian economy will still confronted with a lot of challenges. On the external side, the major challenges arise from the risks weakening global economy and decline in commodity prices. On the domestic side, structural challenges arise from: (i) food, energy and water security; (ii) industry and tourism competitiveness; (iii) long term financing; and (iv) inclusive economy. In addition, reinforcement of basic capital for development, macro economy and financial system stability is a necessity. For this very reason, a combination of policies is intended to ensure stability, to gain momentum of economic growth, and to accelerate structural reform. In the future, Indonesia economic structure is expected to be more diversified and favorable to a sustainable economic development (BI b, 2019).

Bank Indonesia, at the end of 2019, had projected that Indonesia's economic will grow at 5.1 to 5.5 percent in 2020. Such projection has been influenced by optimism over global economic recovery and improvement in commodity price. However, after Covid-19 pandemic in mainland China, in February 2020, Bank Indonesia projected domestic economy to decline slightly to 5.5-5.5% in the same year. Such prospect has been directly or indirectly affected by China's economic slowdown (BI a 2019).

### **Industry 4.0 in all sectors**

Industrial Revolution 4.0 (IR 4.0) has penetrated into many sectors, especially private sectors that have the flexibility in terms of innovation and budget. The emergence of global startup phenomenon from digital platforms forces the government to keep pace with latest developments. As Go-Jek hits the road each workday, application-based business transactions can be done more easily in the palm of your hand. The business is becoming more competitive as its competitors joint the crowd. This has been followed by digital wallet platforms like Go-Pay, OVO, and many others that push IR 4.0 development in Indonesia.

People from all walks of life are becoming more familiar with technology-based applications, including social media platforms that flooded us with any kind of information. Do we realize that the key to IR 4.0 development lies in the BIG DATA? Probably we don't, because we still going bananas over the perceived ease-of-use of technology in our life. What about the government

efforts? The successful implementation of Making Indonesia 4.0 is expected to generate an increase in real GDP by 1-2 percent per year. Therefore, GDP annual growth rate will increase from the baseline projection of 5 percent to 6-7 percent in the period of 2018-2030 where manufacturing industry contributed 21-26 percent of GDP in 2030. The GDP growth rate is driven by a significant increase in net exports, where Indonesia's net exports-to-GDP ratio is projected to reach 5-10 percent in 2030. In addition to an increase in productivity, Making Indonesia 4.0 promises to create 7-19 million jobs, both in manufacturing and non-manufacturing sectors, in 2030 as a consequence of increased demand for export (Ministry of Industry, 2020).

Considering the real benefit, Indonesia is committed to implement *Making Indonesia 4.0* and make it a national agenda. By the first semester of 2018, Indonesia had begun to form task forces for five focus sectors (foods and beverages, textile and clothing, automotive, chemicals, and electronics) and 10 intersectoral priorities. Each taskforce will have clearly defined duties and responsibilities. In the second semester of 2018, these task forces devised the main plan, detailed the action plan, and began to implement each initiative as well as to coordinate with each other to ensure the smooth implementation of *Making Indonesia 4.0* (Ministry of Industry, 2020).

### **The Economy After COVID-19**

Corona viruses are a large family of viruses that are known to cause common cold to more severe diseases such as MERS and SARS. Unlike MERS and SARS that are also caused by corona viruses, Covid-19 has a significant impact both on healthcare and global socio-economic sectors (Ministry of Health, 2020). In mid-March 2020, COVID-19 outbreak in China has decreased overtime from its peak. The number of positive cases and fatality rate had decreased and at the same time the recovery rate increased. This positive development allowed business to resume production. However, COVID-19 has spread from China to 159 countries outside of China as of March 18, 2020; a significant increase from 29 countries on February 22, 2020. Covid-19 spread not only to Asian but also European countries and the United States, and therefore WHO declared the novel coronavirus (COVID-19) outbreak a global pandemic (BI, 2020).

The global economic growth prospect has declined due to the disruption of global supply chains, and weakening confidence among economic agents. The negative impact of COVID-19 is reflected in the early indicators of economic slowdown. The worsening performance of manufacturing sector in the majority of countries is reflected in Purchasing Manager Index decline (PMI, Figure 1.2). In addition, electricity production and consumption experience a dramatic drop which indicates a contraction in production activities in many countries that affect global supply chain. The latter has been disrupted due to the halt in production activities in several countries affected by COVID-19.

The global economic prospect that remains subdued could worsen the growth prospect for exports of goods from Indonesia, despite the fact that, in February 2020, non-oil and gas exports indicate an increase. Export of services, especially in tourism sector, is also predicted to decline due to the hampering of mobility between countries as a consequence of mitigating the risk of the spread of COVID-19. Non-infrastructure investment runs the risk of slowing down because of a declining prospect for export of goods and services and disruption of production chain (BI, 2020).

## Technology and Business Process Reengineering (BPR) System

Everyone knew that the technology-based applications have been around for quite some time before 2020. However, we knew them only in the past few years and becoming even more familiar with them because of their ease of use that facilitates our activities. Big Data has been predicted decades ago to become crucial part of information technology, and this still holds true today. IR 4.0 implementation is in progress with all of its enthusiasm and dynamics in many sectors, and even the government conducted the census online.

Problem arises when, in fact, COVID-19 outbreak requires immediate changes in IR 4.0 and therefore all industries demanded accelerated BPR. Some small scale home industries have also begun using *Whatsapp* (WA) database for their favorite simple data storage. Restaurants change their services from dine-in into takeaway or delivery forms. Everyone becomes even more creative when the government required people to stay at home to help reduce the spread of COVID-19. When people trying to isolate themselves by staying at home and universities adopted online learning until the end of the semester, many seems to have a hard time adjusting to the changes and felt compelled to do the study in a revolutionary way without questioning. When people must stay at home and, at the same time, have to fulfill some of their basic needs, data and technology will play a significant role for them.

All these lead to accelerated changes in business or to Business Process Reengineering (BPR), as proposed by:

1. Hammer and Champy (1993)

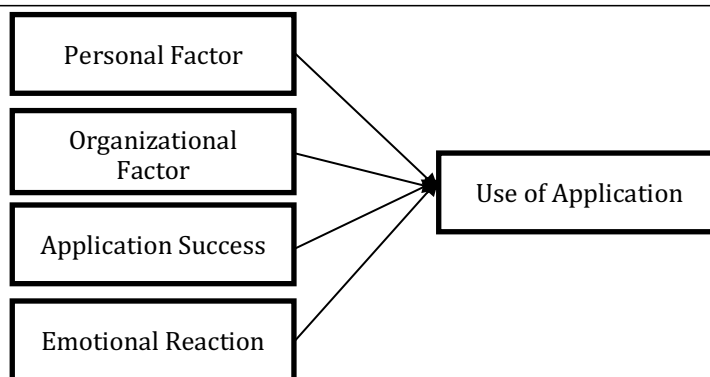
The fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed.

2. Davenport (1993)

The analysis and design of workflows and processes within and between business organizations need to be treated not merely as a collection of individual duties and functions; they may be broken into process that can be designed for maximum effectiveness, both in manufacturing and services operations.

In a nutshell, BPR demands changes in business processes for one reason or another. In our case, the cause of accelerated BPR is COVID-19. Companies, either large or small, need to creatively do the BPR in order to keep the business' wheel turning even though it will not be as good as it has been. However, this needs to be done immediately before they can no longer survive. This, to some extent, is the positive side of COVID-19.

Some companies restrict work activities of their employees as they embrace Work from Home movement—some are ready, some are not. As a result, all of them make adjustments of system and platform that support WFH. This leads to accelerated BPR, although not everyone finds that WFH can work. While COVID-19 affects our life, both positively and negatively, BPR positively affect the system and technology. All companies strive to create platforms that are favorable to technology and information. Equally important things to consider are data and database stored in Big Data.



**Figure 2. Conceptual Framework**

Source: Data processed 2020

## RESEARCH METHOD

The present study used primary data from a web-based survey—*Google Form*—to keep up with current technology and to comply with COVID-19 Social Distancing protocol and to stay alert. We employed qualitative method to analyze information from various credible sources and to do comparative analysis of surrounding conditions.

Observation of MSMEs was conducted in Yogyakarta based upon the following considerations:

1. As a student city, it has been significantly affected by covid-19 as indicated by online lectures held until the end of the semester.
2. As a tourism city, it has become a favorite destination for domestic and foreign tourists.
3. As a city of culture, it cancelled many arts and cultural events.
4. As a city of varied economic compositions, it has undergone dramatic changes in the first 14 days of stay-at-home order with possible extension for days.

## Research Variables

BPR is the evaluation and amendment of strategy, process, technology, organization, and culture (Stoica *et al.*, 2004). Variable measurements were taken using 5 indicators (Mlay *et al.*, 2013) and some modifications:

1. Personal factors consisting of 6 questions.
2. Organizational factors consisting of 8 questions.
3. Online Application Success consisting of 13 questions.
4. Emotional Reaction consisting of 7 questions, and
5. Current Use of Online Application consisting of 8 questions.

The primarily obtained data will be processed to provide description that illustrates the results of the study.

## DATA ANALYSIS AND DISCUSSION

We selected 90 respondents from MSMEs in Special Region of Yogyakarta. Validity and reliability assessments indicate that all of the questionnaire items are valid and reliable. The results of assessment to determine which factors affecting the use of online application in effort to accelerate Business Process Reengineering (BPR) in Micro, Small, and Medium Enterprises (MSMEs) during COVID-19 pandemic are as follows:

**Table 1. Statistic Result**

<b>Variable</b>	<b>Significance</b>	<b>Result</b>
(1)	(2)	(3)
Personal Factor	0.326	Not affecting
Organizational Factor	0.326	Not Affecting
Application Success	0.000	Affecting
Emotional Reaction	0.014	Affecting

Source: Data processed 2020

The results of analysis revealed that personal factor and organizational factor do not affect the use of online application. This is because personal use of online application has become necessary in the era of IR 4.0 and therefore it had no effect. Online applications have become personal needs, even before COVID-19 pandemic. Organizational factors did not affect the use of online applications, because organizations began to realize that the use of online applications is necessarily helps them in various activities. COVID-19 pandemic has increased personal and organizational use of online application for transaction and for doing work from home (WFH) jobs. The users, either as employees or enterprises, have long been personally or organizationally using online applications and, therefore, COVID-19 did not affect the use of online applications, it only intensifies their use as demanded by current situation and condition.

The success of online applications has an effect on their use. By successful online applications we mean those with responsiveness to people's needs, user friendly interface, and multifunctionality that attract more users to use them. These can be represented by some of the most popular online application platforms with so many functionalities for various reasons and positive considerations. The COVID-19 pandemic also shows us how successful applications can truly support various programs that comply with the current situation and conditions for staying at home. Users or customers can make online payment using various existing applications. In fact, some companies with less frequent use of online applications began to intensify the use of such applications.

Emotional reaction affects the use of online applications because the latter forms emotional connection between the user and the applications. There are some components that create emotional connection between them: bonuses, discount, points, and many other things that incite emotional reaction, affect their use and build customer loyalty. COVID-19 pandemic also incites emotional reaction to online news, trading, communication and many other things. Such emotional reaction could be incited by orders to stay at home which, in fact, made the users even more dependent on online applications.

### **CONCLUSION**

The results of analysis presented earlier have led us to conclude that:

1. Personal factors do not affect the use of online application.
2. Organizational factors do not affect the use of online application.
3. Online Application Success affects the use of online application.
4. Emotional Reaction affects the use of online application

### **Limitations and Recommendations**

Our work clearly has some limitations in terms of communication with potential respondents due to situation and condition relating to COVID-19 pandemic. Despite this, online applications from various communication media have been helpful to us, especially in data collection using Google Form. The study could be a starting point for further analysis relating to the use of interview method with MSME actors in the near future.

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