

Supply Chains In Indonesia Facing Virus Corona (COVID-19): Models Innovation And Obstacles Faced

Basrowi^{1*}, Pertiwi Utami², Juhary Ali³, Muhammad Syukri Salleh⁴

¹ Universitas Bina Bangsa, Banten, Indonesia

² Sekolah Tinggi Ekonomi dan Bisnis Islam, Lampung, Indonesia

³ Asia e University, Malaysia

⁴ Universiti Sains Malaysia

*Corresponding email: basrowi@binabangsa.ac.id

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Abstract

The purpose of this research is to reveal the innovation model and obstacles faced by the Indonesian government in handling the Covid-19 epidemic case. Based on previous research, supply chain management is needed because supply chain disruptions and inventory depletion (such as medical supplies and medical equipment) both in high and low resource settings have catapulted the core components of IPC 8 (environment, materials, and equipment for IPC). The research method used is qualitative, especially phenomenology. The novelty of this research lies in the innovation of the supply chain model and the Covid-19 handling constraints obtained through a series of empirical studies and literature reviews that allow it to be used by decision makers. The results revealed that various innovations to meet the supply chain relating to the handling of Covid-19 have been carried out by the government ranging from the creation of special hospitals, the appointment of public hospitals to the referral hospitals specifically Covid-19, the purchase of medicines from other countries that were imported, a mask development company, increases mask production for state-owned and private companies that produce masks, increases alcohol production, and recruits human resources in the health sector, especially for final year students majoring in health. While various obstacles faced, namely the low awareness of the community to do social distinguish in daily interactions, low awareness of the community to work from home, learn from home, and worship at home and the many people who have to work outside the home when they want to fulfill the day their daily needs, the threat of an unemployment explosion, and fears of social insecurity are also the causes of government difficulties in making locked decisions.

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I. Introduction

The world is committed to making rapid responses and readiness for the handling of Covid-19 so that the impact is not widespread. Kandel, Chungong, Omaar and Xing (2020) revealed that of 182 countries, only 104 (57%) had the functional capacity to carry out important activities at the national and sub-national level, and 32 (18%) countries had low preparedness and need external resources to control the emerging epidemic events.

As the first country affected by the Covid-19 outbreak, the Chinese government took steps to quickly isolate, quarantine, social distance, and handle society. Ji Y, Peppelenbosch, and Pan (2020) revealed that a significant positive relationship between the Covid-19 incident and mortality was clearly seen in the response of the Chinese community. The rapid increase in the number of infections in China has resulted in insufficient health care resources, followed by an increase in the number of deaths of positive Covid-19 patients. (Hopman, Allegranzi, & Mehtar, 2020)

Based on estimates from the United Nations High Commissioner for Refugees (UNHCR), the United Nations refugee agency, there are more than 41 million internally displaced people and 25 million refugees in the world. Some large scale refugee camps located in poor and developing countries like Africa have limited resources. The health care system in the camps is very fragile and access to care facilities is limited (Roberts, Patel, & McKee, 2012). This phenomenon is very prone to occur and can increase the same case, where the risk of Covid-19 can be transmitted there.

Today's leaders have 2 important responsibilities, namely solving the Covid-19 problem directly and taking precautions (Gates, 2020). To anticipate the surge in mortality rates such as in China, the Indonesian government immediately isolated patients with Covid-19 in designated hospitals, and covid-19 treatment facilities were quickly established to manage as the number of cases in the affected areas increased. Even schools and colleges and meetings were canceled because it could potentially trigger the spread of the epidemic.

These last days, the government has begun to conduct rapid tests in an effort to obtain an early indication of whether someone is positively infected with COVID-19 or not. The Indonesian government prioritizes areas which according to the mapping results

show indications of being vulnerable to COVID-19 infection. Tests will be carried out from house to house in priority areas.

The government is committed to continue to work very hard as a form of seriousness in handling Covid 19. The commitment was formulated through making public policies (strong public health policy response) related to the handling of the covid-19 outbreak in the form of supply chain management of drugs and medical devices.

Minimum requirements as a first step in handling and prevention must be implemented. With the aim of building additional important elements from IPC's core components in stages based on regional conditions (Hopman, Allegranzi, & Mehtar, 2020). Based on the core components of the World Health Organization (WHO), the WHO minimum infection prevention and control (IPC) requirements are mandatory at the national level and health facilities to provide minimal protection and safety for positive patients Covid-19, health care workers, and visitors (WHO, 2020).

This research is motivated by supply chain disruptions and depletion of supplies (such as medical supplies and medical equipment) in both high and low resource settings that have connected IPC 8 core components (environment, materials, and equipment for IPC). The global community is demanded to increase laboratory capacity and other surveillance capabilities, increase the readiness of the health system to care for, and improve communication and coordination and implementation strategies (Baltimoe, 2019). Procurement and supply chain management must also be improved to ensure adequate stock of essential drugs and personal protective equipment and to allow equitable access to new diagnoses, therapies and vaccines during the epidemic emergency (WHO, 2020)

The occurrence of panic buying and irrational use of personal protective equipment (PPE) have caused an inadequate supply of N95 respirators, and this deficiency can lead to devastating consequences for the management of tuberculosis that is resistant to various drugs (Hopman, Allegranzi, & Mehtar, 2020). In this case, the government must provide clear guidance on the use of PE and act acceleratively to secure adequate supply and stock. Therefore, supply chain management for medicines and medical devices is needed. Previous research that addressed the issue of supply chain management and Covid-19 has not yet touched deeply on the obstacles and innovation models that can be carried out to deal with this epidemic problem. The research seeks to express this goal, which is to innovate models and explain the obstacles currently experienced by the Indonesian government.

II. Material and Method

Supply chain network design is a modeling approach that is proven to significantly reduce supply chain costs and can improve service quality by better aligning supply

chain strategies that will be carried out by all parties involved in co-19 handling. Whereas epidemic outbreaks are special cases of supply chain risk (SC) which are specifically characterized by long-term disruption, the spread of disruption, and high uncertainty. A series of studies conducted by Ivanov (2020) revealed that the time of closure of facilities in different echelons, the waiting time, the speed of the spread of the epidemic, and the duration of upstream and downstream disruption in SC became the main factors determining the impact of epidemic outbreaks on SC performance. This approach can help identify successful and wrong elements of risk mitigation or preparedness and recovery policies in epidemic outbreaks. Thus, decision makers can predict the operational and long-term effects of epidemic outbreaks on SC and develop appropriate SC epidemic plans.

Selmi and Murray (2016) explain that the global need to accelerate progress towards achieving the Sendai Framework priorities and targets for disaster risk reduction adopted by member states of the United Nations (UN) in 2015. The Sendai Framework complements the International Health Regulation (IHR) with integrating infrastructure, climate change and economic considerations into disaster management plans and promoting inclusive policies that are designed to protect vulnerable populations during the mitigation, preparedness, response and recovery phases. The Sendai Framework adopts an all-hazard approach to enhance international, regional, national and local resilience to withstand a broad spectrum of disasters, including epidemic, pandemic and epizootic problems. Clearly, preparedness for a new epidemic requires strengthening health systems and developing response plans that take into account various socio-economic, environmental, political, and institutional factors that can support or hinder emergency management efforts (Lee, et al, 2020).

Supply chain management has become the dominant disaster mitigation paradigm in recent periods. This decision model is used to solve supply chain related problems in an emergency, including an anomaly in the case of the outbreak of Covid-19. Therefore, various policies regarding supply chain management of all products used for the war against Covid-19 are very important to do. This is in line with research conducted by Kozlenkova (2015) which states that Supply Chain Management (SCM) is used to indicate needs in the integration process from end use to original suppliers. Sometimes in carrying out the integration process, new innovations are needed. This is because supply chain management that is not well integrated can lead to poor decision making, opportunistic behavior, and loss of objectivity. Therefore, policies must be based on good integration so that supply chain decision making is truly on target.

The existential supply management philosophy is to integrate the flow of materials, information and products from the initial supplier to the end customer. Through supply chain management it is expected that the ration of drugs, materials and medical devices to / and between regions can be done fairly and transparently, because it is closely related to the potential, conditions and needs of different regions.

Ji Y, Peppelenbosch, and Pan (2020) revealed that the association of deaths with health care resources should provide guidance for resource-limited areas on how and whenever to prepare for the use of local outbreaks. In addition, lessons learned in the 2003 outbreak of acute respiratory syndrome viral corona (SARS-CoV) aimed at strengthening people's immune systems will be very helpful.

When a region is able to implement decentralized supply chain management it means it is very good, because it can help the central government. In other words, the financial capacity of the region is sufficient to finance the supply chain of drugs, materials and medical devices in order to fight co-19. In a very vulnerable position like this, dependence on the center must be as minimal as possible. The less transfer and drugs and medical devices from the center, the higher the level of independence of an area.

In regions with lower levels of independence, it is necessary to provide early distribution of drugs and medical devices to reduce imbalances with very urgent demand in large numbers. Thus, areas with low local income need to be assisted in financing expenditures related to the co-19 pandemic. Such conditions will also close the opportunity for differences in the role of regions in carrying out government functions and services in handling Covid-19.

To overcome the unequal financial capability between regions in financing Covid-19's handling needs, it is expected to be overcome through vertical and horizontal coordination between one regional government and another regional government.

Aside from being a disaster management instrument, supply chain management (MRP) also aims to accelerate the distribution of medicines and medical devices to the regions. MRP is also able to increase the convergence of the quality of Covid-19 handlers in all regions well. Thus, MRP will also have a significant influence in increasing the speed of convergence of service quality in the Covid-19 case in all regions.

In this case, the regional government has the authority to make policies that are directed to develop regional competence in handling co-19 issues. In addition, the MRP must be used as well as possible by the regional government in handling Covid-19 because the regions are the most aware of the needs, conditions, and situation of the Covid-19 pandemic.

This research method is qualitative, especially phenomenology. This method was chosen because it intends to describe the various supply chain innovations that have been carried out by the Government and the Indonesian community in dealing with co-19. The study was conducted in February to the end of March 2020. Data collection was carried out using two methods, namely participatory observation and in-depth interviews in a semi-structured manner (Basrowi and Suwandi, 2006). Observation of participation was carried out on various information made by all parties, especially

those reported through the mass media. Observation of participation was also carried out in the community, especially the people of Jakarta and Lampung. Semi-structured interviews were conducted with communities in Cempaka Baru, Kemayoran District, Central Jakarta, Indonesia, and the Bandar Lampung community. The data analysis process uses the interaction method suggested by Miles and Huberman (2014) starting from data collection, data classification, data filtering, and drawing conclusions.

III. Results and Discussion

3.1. Drug Supply Chain Configuration and Medical Devices

The Covid-19 epidemic is a reminder of the importance of maintaining an increased and sustained commitment to global public health preparedness. The world does not need more evidence of health, social, economic and environmental problems that arise when humans fail to invest adequately in global health security. What is needed is prioritizing, funding, and implementing preparedness interventions. (Jacobsen, 2020).

The dialectical model can be applied in explaining the role of networks in the policy process for handling the Covid-19 outbreak. The outcome of the Covid-19 outbreak policy process is determined by the dialectical relationship between structure and institutions, networks and contexts, networks and outcomes, and problem orientation of the actors in the process of handling the Covid-19 outbreak.

The results of government policy in handling Covid-19 are the result of a process of bargaining and contestation of greater community interests by utilizing all resources owned by the central and regional governments. In this case, a neat network of policy implementers and all are expected to be in a position ready for hard work are very relevant in the implementation of supply chain management tools and materials handling Covid-19.

This dialect model is expected to be able to explain why the supply chain policy in handling Covid-19 can continue to change, following various innovations suggested by external parties in this case WHO and innovations carried out by internal government and its staff? That happened because, all of them were oriented towards national safety. Communities can benefit when the country can run supply chain network scenarios, evaluate and proactively implement positive change in response to all possible Covid-19 outbreaks.

Countries can also introduce new products that are being purchased, or change demand patterns, add new sources of supply, and increase the amount of goods that are needed by the state. For example, when in the last days Jokowi ordered two million Avigan and 3 million chloroquine, to treat co-19 patients.

In this case the president has done a quick supply chain planning so that it is also responded quickly by medical staff, hospitals, and all parties who can help take concrete steps to resolve the Corona problem in Indonesia. This is where has happened with what is called dynamic supply chain management dialectics.

In the process of supply chain management of medicines and medical devices, an integral approach is needed. Storage, transportation, inventory, ordering and the amount of medicines and medical devices must be sufficient as needed by the community at this time. Even to build an optimal and effective management system, good planning, supply, fabrication, delivery, and sorting of goods must be carried out. This is done to minimize human error, facilitate distribution, reduce technical problems, reduce transportation and distribution costs, and maintain the quality of medicines and medical equipment needed by the community.

The aspect of speed taken by the President in making supply chain management decisions is awaited by the public. It also shows that, supply chain management is not stagnant, but there is always innovation by finding a variety of valid information that can be used to solve covid-19.

The steps taken by the president show that there are seven dimensions in the management of the Covid-19 drug supply chain, namely: 1) the president as an actor, 2) the function of the president as the top manager in supply chain management planning, 3) the governance structure that has the power to order and carry out the people's mandate , 4) the existence of instructions from the President to all parties involved so that all patients can be handled properly, 5) the existence of various codes of conduct in managing disasters in a directed and integrated manner; 6) there is a relationship between the government, Covid-19 handling task force, producers, distributors, and patients, and 7) the Government's strategy in handling Covid-19 quickly, precisely, and directed.

We can read his book Marsh & Smith (2000) who has introduced a dialectical model in supply chain management as an analysis in the process of making public policies that are disaster emergency. This model clearly analyzes not only the actors making supply chain management planning, the relations between actors, and the interests of the community, but also the transformation of policies in the face of unpredictable dynamic nature of disasters.

Thus, this dialectical model can be applied by the government and agencies-all parties involved-from producers, distributors, catalyts, to the user actors in this case the affected communities.

Hard work to fulfill the supply chain was also carried out by the Governor of Central Java, which has been trying to increase Alcohol production in Wonogiri, Central Java to 3 million liters per day, and intends to build a mask factory in Brebes, given the high demand.

Hard work to fulfill the supply chain of inpatients and isolation rooms was also carried out by the Minister of State-Owned Enterprises Erick Thohir and Ministry of Public Works Minister Basuki Hadimuljono, as well as the Chief Executive of the Task Force for the Covid-19 Handling Acceleration Handling Task Force which swiftly transformed the Athlete House in Kemayoran into place of health care for patients in care.

Various experts, ranging from building experts, sanitation experts, health engineers, electrical engineers, Air Conditioner (AC) experts, heat shock experts, and various experts struggling to set up a Corona specialty hospital on Galang Island, Batam, Riau Islands. The existence of the hospital is expected to be an answer to the needs of the community in facing the Corona Virus threat. The hospital is also expected to be a center for observation and isolation of Covid-19 patients.

Creative efforts were also carried out by the Mayor of Surabaya who created a Disinfectant Chamber to sterilize all limbs from Corona Virus. The effort was made to fight the Corona Virus that has become epidemic in Surabaya.

In addition, the development of digital technology can be utilized as an effort to maintain the supply chain by making various policies related to the valid data needed. This is to prevent policy irregularities related to the validity of the data both the amount of medicine and medical devices as well as other data needed during the Covid-19 handling. Digitalisation has the potential to affect the majority of environmental quality parameters and encourage improvement in quality of life (Sharifullin, et al., 2019; Miraz, Hye, & Habib, 2019). Support from accounting information systems using technology is also needed to reduce uncertainty, negative perspectives from the public regarding the handling of Covid-19, support decisions that will be taken by the government as a strategic effort, and encourage, make scheduling and good control of the practices that have been carried out (Haddouch, Beidouri, & Oumami, 2019). Sari et al. (2019) revealed that a good accounting information system is one of the effective strategies in maintaining the quality of the supply chain. With information systems, even emergency planning can be well integrated. This is to avoid communication errors and fraud. Halal authenticity and integrity in a product is very important to be a prerequisite in determining the potential and dynamic supply chain network.(Majid, 2019)

3.2. Indigenous and Exogenous Factors in MRP

There are two explanatory factors to describe the relationship between the network created by the Government and the supply chain management context, namely indigenous and exogenous factors. Indigenous factors that can influence policy are ideology, politics, and the availability of resources (material and Human Resources

(HR) -health). Exogenous factors include global economic base and new knowledge in the form of new findings related to Covid-19 drugs.

The results of policies made by the Jokowi government also affect the form of policy networks, both direct and indirect. In other words, supply chain management in the Covid-19 disaster response process was also motivated by the structural interests of the state in facilitating the community when handling the Covid-19 outbreak as well as being a very strategic learning process for the community and all parties affected by the Covid-19 outbreak.

Thus, government policies in supply chain management in the process of handling the Covid-19 outbreak disaster could affect various exogenous factors. First, the results of policies made by the government can cause changes in the network or the balance of resources within it. For example, the call of the Minister of Education and Culture who summoned final-year health students to volunteer to handle the Covid-19 case will greatly influence other policies, including the HR-Health supply chain.

Second, the results of policies in supply chain management can also have an impact on broader social structures that place the interests of saving human lives above economic interests and state revenues from tax and non-tax.

Third, the results of policies in supply chain management can also affect the standard operational procedures used by medical and paramedical personnel, as well as other supporting staff, including the task force for handling Covid-19 and the Indonesian Armed Forces-Indonesian Republic Police. Here it is very clear, that there has been a reciprocal relationship (dialectics) in supply chain management based on policies made by the Government. Hopefully, supply chain management in handling Covid-19 is increasingly being carried out perfectly by the government and its staff, so that it is able to control the spread of the Corona virus (Covid-19).

3.3. Configuration of Supply Chain in Human Resources for Health

The Covid-19 pandemic outbreak has prompted the Government to design and reconfigure supply chain management for drugs and medical devices, as well as HR-health. The consequences of various changes in supply chain management will lead to an increase in the complexity of actions, supply chain channels, network of parties involved in the supply process, and distribution facilities. All this, of course, will make supply chain management planning more complicated and complex, in line with the level of vulnerability of the Covid-19 outbreak.

The initial goal of establishing the HR-Health supply chain management policy is to provide protection to the community, so as not to be further exposed to the differences in Covid-19. When already exposed it is expected to be treated properly, and can recover.

The President interacted intensely with the ministers, the House of Representatives, the Regional Representatives Council, the governor, and the Regent in planning and refining the HR-Health supply chain management policy design for the handling of the Covid-19 Plague. Consultation was also carried out with non-governmental actors involved in the HR-Health supply chain management policy making process starting from representatives of academics, the media, and various related parties. They are expected to play an optimal role, so HR-Health supply chain management is not entirely the responsibility of the Government, but also the responsibility of the community together.

It is intended that the Covid-19 handling process can be carried out comprehensively and can help all people in need. Actors outside the government must be determined to fight for humanitarian interests. Thus, HR-Health supply chain management policies in handling Covid-19 can help the government overcome the Covid-19 outbreak.

The Minister of Education and Culture's appeal, Nadim Makarim, for the final year health student participants to volunteer for Covid-19 needs to be happy by all elements. At present, Indonesia is demanding their knowledge and energy to be involved with the virus with Corona. This appeal is very appropriate to be discussed, because the number of medical HR and medical personnel in Indonesia is still very limited, plus in the 3T areas (frontier, outermost, and underdeveloped).

The number of doctors in Indonesia according to 2018 Ministry of Health data is 134,459 general practitioners tested throughout Indonesia. With a population of 265 million, it means that each doctor serves an average of 1,900 residents. More than half of doctors in Indonesia, practice in Java reached 78,837 general practitioners. Position in West Java is 20,929 doctors, Special Capital Region of Jakarta 18,905 doctors, East Java, 15,948 doctors, Central Java 12,358 doctors, North Sumatra 10,541 doctors. Meanwhile in other regions such as West Sulawesi there were only 154 doctors, 244 North Kalimantan doctors, 251 North doctors, 309 West Papua doctors, 319 Gorontalo doctors; Bangka Belitung only 499 doctors (Ministry of health, 2018).

With such conditions, the number of patients expected by Covid-19 did not increase dramatically. Hopefully, however, if there are things that need to be improved, in the amount needed by patients, doctors from the area can be temporarily transferred to areas that are in dire need.

IV. Conclusion

Various innovations to meet various supply chains related to the handling of Covid-19 have been carried out by the government ranging from the creation of special hospitals, the appointment of public hospitals to Covid-19 special referral hospitals, the purchase of drugs from other countries by importation, the construction of mask

manufacturing companies , increasing the production of masks for state-owned enterprises and private companies that produce masks, increasing alcohol production, and recruiting human resources in the health sector, especially for students majoring in health at the final level.

Other innovations made by ministers, governors, mayors, regents, community leaders, academics, musicians, artists, and various professions vary greatly, so that all innovations in order to meet the supply chain in the health sector ranging from medicine, materials, and medical devices , including the supply of food for health workers the amount and variety is very much. With this hope, hopefully Covid-19 in Indonesia can be resolved soon.

Various obstacles faced, namely the low awareness of the community to do social distancing in daily interactions. Another obstacle is the low awareness of the community to work from home, learn from home, and worship at home. The large number of people who have to work outside the home when they want to meet their daily needs, the threat of exploding unemployment, and fears of social insecurity are also the causes of the government's difficulties in making lock-down decisions.

References

- Aitsi-Selmi, A., & Murray, V. (2016). Protecting the health and well-being of populations from disasters: health and health care in The Sendai Framework for Disaster Risk Reduction 2015-2030. *Prehospital and disaster medicine*, 31(1), 74-78.
- Baltimore. (2019). Preparedness for a high-impact respiratory pathogen pandemic. Johns Hopkins Bloomberg School of Public Health: Center for Health Security
- Basrowi & Suwandi. 2006. *Manajemen Penelitian Kualitatif [Qualitative Research Management]*, Jakarta: Rineka Cipta
- Gates B. Respond to Covid-19: a once-in-a-century pandemic? *N Engl J Med*. Published online February 20, 2020. doi: 10.1056 / NEJMp2003762
- Geneva. (2019). Road map for access to medicines, vaccines and other health products 2019–2023. World Health Organization (WHO).
- Haddouch, Hajar., Beidouri, Zitouni., Oumami, Mohamed EL. (2019). Supply Chain Management: A Review of Approaches, Practices and Impact on Performance, *Int. J Sup. Chain. Mgt*, 8(6): pp. 1-13.
- Hopman, J., Allegranzi, B., & Mehtar, S. (2020). Manage COVID-19 in low and middle income countries. *JAMA*.
- Ivanov, D. (2020). Predicting the impact of epidemic outbreaks on global supply chains: A Simulation-based analysis on the coronavirus outbreak cases (COVID-

19/SARS-CoV-2). *Transportation Research Part E: Logistics and Transportation Review*, 136, 101922.

Ji Y, Ma Z, MP Peppelenbosch, Pan Q. Potential relationship between COVID-19 mortality and the availability of health service resources. *Lancet Glob Health*. Published online February 25, 2020. doi: 10.1016 / S2214-109X (20) 30068-1

Jacobsen, K. H. (2020). Will COVID-19 generate global preparedness?. *The Lancet. JAMA*. 2020;323(13):1245-1246. doi:10.1001/jama.2020.2342

Kandel, N., Chungong, S., Omaar, A., & Xing, J. (2020). Health security capacities in the context of COVID-19 outbreak: an analysis of International Health Regulations annual report data from 182 countries. *The Lancet*.

Kozlenkova, Irina; et al. (2015). "The Role of Marketing Channels in Supply Chain Management". *Journal of Retailing*, 91 (4): 586–609. doi:10.1016/j.jretai.2015.03.003

Lee, V. J., Aguilera, X., Heymann, D., Wilder-Smith, A., Lee, V. J., Heymann, D. L., ... & Cleghorn, S. (2020). Preparedness for emerging epidemic threats: a Lancet Infectious Diseases Commission. *The Lancet Infectious Diseases*, 20(1), 17-19.

Majid, Zawiah Abdul et al. (2019). Halal Integrity from Logistics Service Provider Perspective. *Int. J Sup. Chain. Mgt*, 8(5): pp. 1-9.

Miles, Matthew B. dan A. Michael Huberman. (1992). Analisis Data Kualitatif [Qualitative Data Analysis]. Jakarta : UI-Press.

Miraz, Mahadi Hasan., Hye, A. K. Mahbubul., Habib, Md. Mamun . (2019). The Impact of Blockchain-Bitcoin in Malaysian Markets. *Int. J Sup. Chain. Mgt*, 8(5): pp. 136-141

Roberts B, Patel P, McKee M. Non-communicable diseases and post-conflict countries. *Bull's World Health Organ*. 2012; 90 (1): 2. prayers: 10.2471 / BLT.11.098863

Sari, Nur Zeina Maya., Susanto, Azhar., Afiah, Nur, Nunuy., Sueb, Memed., Suharman, Harry. (2019). Supply Chain Quality Accounting Information Systems with Business Strategy Effective in Bumn Bandung Indonesia. *Int. J Sup. Chain. Mgt*, 8(6): pp. 81-86.

Sharifullin, Aidar Gamisovich., Safina, Guzel Rachitovna .,Fedorov, Viktoria Alekseevna., Kurzhanova, AnnaAlikseevna . (2019). Digital Economy for the Supply Chain as Indicator of Competitiveness of the Cites. *Int. J Sup. Chain. Mgt*, 8(5): pp. 249-252