



The Consequences of COVID-19 Pandemic on FMCG Warehouse Operations in Klang Valley: A Qualitative Study Approach

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Abstract. Fast-moving consumer goods (FMCG) warehouses face unprecedented risks during the COVID-19 pandemic, making it necessary to assess the impact of COVID-19 on the warehousing industry. The study aims to understand FMCG warehouse in Klang Valley operations prior to the COVID-19 pandemic, assess the impact of the COVID-19 pandemic, and identify strategies employed by these FMCG warehouse operations to overcome the problems caused by the COVID-19 pandemic. The situation is studied based on qualitative research methods, and the ATLAS.ti software is used as the mechanism for analyzing and presenting the results. The results show that the infections within the warehouse, labour shortages and changes in sales are some of the impacts that are experiencing by the Klang Valley warehouse operators. This is the first comprehensive review of latest literature on FMCG storage operations during the pandemic in Malaysia. This research is beneficial for warehouse operators and logistics personnel by incorporating insights from warehouse managers to adapt to pandemic-driven warehouse operations.

Keywords: COVID-19 · Impact · FMCG Warehouse · Warehouse operations

1 Introduction

Warehousing has become a major player in logistics services (Karim, Rahman & Shah, 2018). Its main function is to buffer fluctuations in the flow of materials within the supply chain due to product seasonality, production, and shipping batches. Warehouses are one of the integral elements of the fast-moving consumer goods (FMCG) supply chain (Harun et al., 2017). However, warehousing and its operations have been severely impacted by the COVID-19 pandemic (Revelino et al., 2020). Although the government has implemented preventive restrictions for the safety of all, these restrictions may disrupt warehouse operations (Revelino et al., 2020). For this reason, the researchers

in this study were keen to determine the impact of the COVID-19 pandemic on FMCG warehouses in the Klang Valley, Malaysia.

The outbreak of the coronavirus disease 2019 (COVID-19) pandemic has spread to almost all countries and territories worldwide (Pokhrel and Chhetri, 2021). As stated by the World Health Organization (WHO), there has been more than one confirmed case of COVID-19 in more than 214 countries and territories. To curb the spread of the coronavirus, countries around the world began to implement preventive measures in March 2020 (Loske, 2020). In response to the landing of the COVID-19 pandemic in Malaysia, the Federal Government of Malaysia took action on 18 March 2020 to implement the Movement Control Order (MCO) (Azra et al., 2021). This measure prohibits people from participating in and organizing mass gatherings, disregarding religious, sporting, social and cultural activities (Baharudin et al., 2021).

During the various phases of the lockdown, all economic and social activities must cease, leaving only essential services to operate (Shaheera and Nur, 2021). Although warehousing services have been classified as an essential service in the logistics sector in Malaysia, they still face disruptions such as distribution and transport disruptions within the supply chain. According to Farr et al. (2020), the key issue facing global inventory management during the pandemic is balancing excess demand with worker safety in the workplace. It can be seen that the increased demand for warehousing services is due to the surge in online shopping during the COVID-19 pandemic (Saputra and Rialmi, 2021).

Xuan (2020) stated that during the implementation of the MCO, the demand for logistics warehouses will rise sharply and has been growing, with e-commerce being the main driving force. At the same time, the e-commerce industry has grown rapidly during the COVID-19 pandemic (Saputra and Rialmi, 2021). A business trend shifting from B2B to B2C due to the rapid growth of e-commerce during COVID-19 would be a possible explanation for this situation (Patil and Patil, 2020). Therefore, the purpose of this paper is to assess the impact of the COVID-19 pandemic, and identify strategies for these FMCG warehouse operations to address issues arising from the COVID-19 pandemic in FMCG warehouse at Klang Valley, Malaysia.

2 Literature Review

2.1 FMCG Warehouse Strategy

According to Harun, Habidin and Latip (2017), a FMCG warehouse is a warehouse for storing FMCG and consists of many parts, for example, it is crucial for employees to manage the FMCG warehouse in a good way to avoid waste. According to Nemtajela and Mbohwa (2017), Fast Moving Consumer Goods (FMCG) can be divided into 4 main categories: personal care, food, home care and refreshment. The specific characteristics of fast-moving consumer goods are the frequent purchasing and consumption of products such as soap, detergent, biscuits, clothes, footwear and so on (Niedermeier et al., 2021). FMCGs have been traditionally sold via physical retail stores, with the rising share of sales via e-commerce channels (Shahmohammadi et al., 2020).

As pointed out by Nemtajela and Mbohwa (2017), the strategy for managing the fast-moving consumer goods (FMCG) requires fast pacing action with immediate decision.

These FMCG goods considered as high demand by customers but have a short shelf life, causing them to rapidly depreciate in value. FMCG inventory levels are critical to the success of a manufacturing organization. Manufacturers and retailers use warehouses to store FMCG goods and the warehouse act as an interface between customers and manufacturers (Vaz and Mansori, 2017).

As stated by Gu et al. (2010), warehouses have two important operational strategies, namely, storage strategy and picking strategy. The warehousing of FMCG goods is carried out after the staff receives the materials and relevant supporting documents, and then stores the materials or goods at the predetermined locations. The more FMCG goods that a warehouse can manage, the more profitable the warehouse will be (Stević et al., 2018). According to Gallego et al. (1996), there are many strategies that can be implemented for FMCG goods in the warehouses, such as random storage, dedicated storage, classified storage, and duration-of-stay storage. Berg and Zijm (1999) stated that some common storage methods in the industry include block stacking, box racking, modular storage drawers, and pallet racking.

Next, picking of FMCG storage goods strategies aim to minimize the time it takes to pick customer orders (Gu et al., 2010). The warehouse receives many orders from customers on FMCG goods. These goods required to be delivered by the same carrier and some required different transporter (Kłodawski et al., 2017). Two strategies are possible in overcoming such situation. First is the batch picking approach and second is through zone picking (Berg and Zijm, 1999). In batch picking, a group of orders is assigned to a picker for simultaneous picking (Gu et al., 2007) and whereas, zone picking is the division of the storage space into picking zones, each of which has one or more specific pickers who only pick items from a specific zone (Kłodawski et al., 2017). Efficiency of either strategy affected by factors such as lead-time, products quality, error prevention and warehouse service quality that difficult to select as best approach in managing FMCG goods.

2.2 Effect of COVID-19 on Logistics and Supply Chain

The outbreak of the coronavirus disease 2019 (COVID-19) pandemic has spread to almost all countries and territories worldwide (Pokhrel and Chhetri, 2021). Li et al. (2020) stated, the first confirmed case of COVID-19 was recorded at Wuhan, China in October 2019. As stated by the World Health Organization (WHO) over 214 countries and regions have more than one confirmed case of COVID-19.

Curbing the spread of the coronavirus, countries around the world began to take precautionary measures in March 2020 (Loske, 2020). The government is implementing lockdown procedures, along with travel restrictions, temporary closures of factories and shops, and mandatory restrictions on all citizens (Xu et al., 2020). These precautions prevented people from working, meeting, and socializing, severely disrupting economic activity, especially in the service and agricultural sectors (Sharma et al., 2020). The impact of the spread of COVID-19 has caused delays and inventory shortages in global supply chains. According to the forecasts of several analysts, the new coronavirus will not completely disappear before 2022 Scientists realize that the coronavirus lasts longer than other catastrophic events. To make matters worse, the day the pandemic is brought under control is still unprecedented (Xu, et al., 2020).

The Malaysian government has taken action to enforce the Movement Control Order (MCO). This is a precautionary measure implemented by the Federal Government of Malaysia on 18 March 2020 in response to the COVID-19 pandemic (Azra et al., 2021). As confirmed cases of COVID-19 increased, the Malaysian government imposed restrictions (Menhat et al., 2021; MOH, 2022). Under the MCO, people are prohibited from organizing and participating in mass gatherings, disregarding religious, sports, social and cultural activities (Baharudin et al., 2021). The government prohibits interstate travel and international movement for inbound and outbound travel, while closing all public and private establishments not classified as essential services (Menhat et al., 2021). In addition, only a limited number of members of the same household can leave home for basic necessities (Elengoe, 2020).

The supply chains of goods in Malaysia and the rest of the world been disrupted. It has led to unprecedented shutdowns and production has slowed in almost all industries in the in Malaysia and global (Mariia et al., 2021). China as a “global factory” has suffered huge losses from the COVID-19 pandemic, which has disrupted the Chinese market and threatened global supply chains (Mariia et al., 2021). China’s manufacturing technology has gained global recognition, and companies around the world have come to rely on its investments in machinery and technology (Gupta et al., 2020).

Petković et al. (2020) stated, the COVID-19 pandemic has a significant impact on global and local supply chains. These effects extend to all members of that supply chain, whether the supply chain is international or domestic (Poo, 2021). The COVID-19 pandemic is a short-term crisis, it has long-term implications for companies’ existing supply chain operations. Due to supply chain disruptions, many SMEs that affected by MCO in terms of delayed business orders, lack of physical presence needed to generate revenue, difficulty in adapting to cashless transactions, etc. (Cheong et al., 2020; Mariia, et al., 2021).

According to Li et al. (2021), many countries have implemented targeted measures to prevent the spread of the disease during the COVID-19 pandemic, including national lockdowns, entry quarantines, and bans on entry into affected areas. During this period, the logistics industry has gone a step further to overcome existing constraints to maintain liquidity and supply the domestic market. All efforts are aimed at minimizing supply chain disruptions (Bylen, 2020).

Logistics companies face significant challenges in ensuring business continuity and uninterrupted supply chains (Bylen, 2020). Continued enforcement of economic activity regulations and strict rules that allow companies to operate in difficult conditions may increase production costs. Compared to pre-crisis levels, this tight business situation is likely to persist as headcount decreases or cost margins increase. These high costs are also passed through the production chain to the transport sector. Road transport can be affected by border controls, enforced driver isolation and exorbitant insurance prices (Tardivo et al. 2020). In Malaysia, the logistics industry is facing public sector challenges, causing the entire logistics chain to be hit hard by supply and demand during the pandemic (Shin et al., 2020).

3 Research Methodology

This study was conducted with a qualitative approach, using in-depth interviews to obtain the required data. Interview questions were prepared and used with the informants until the raw data were saturated. The researchers selected managerial level of FMCG warehouse in the Klang Valley through the purposive sampling method. The interview process was recorded and transcribed for analysis. For data analysis, the researchers chose thematic analysis and ATLAS.ti software to better organize and display the acquired data.

This study is aimed at individuals involved in the FMCG warehouse operations in Klang Valley, Malaysia during the COVID-19 pandemic. Target groups include warehouse management, such as warehouse managers, warehouse supervisors, inventory managers and senior managers who can provide key information on the research topic being investigated. Researchers had identified and approached several top-tier management personnel from prominent logistics companies operating in Klang Valley and received positive feedback while few agreed to be parts of the study. All the interviews took place between December 2021 and lasted until February 2022. Due to the restriction caused by the pandemic situation during the time, interview sessions are conducted virtually using online meeting platforms (primarily Zoom), depending on the informants' preference. The interview process was recorded with the consent and permission of the informants. The average interview time was 40 min.

Semi-structured interviews were adopted to collect informant data to answer the research objectives. The researchers designed some interview questions before the interview. After the researcher has collected all the data, the data received from the informant needs to be collated and processed. During the interview, the researchers recorded the entire interview process through a computer on an online platform (Zoom Meeting). The entire interview process was recorded by the researchers, as they were required to convert the interview conversations into written recordings after the interviews were over. This raw data is collected, filtered, selected, processed, analyzed, and converted into a readable and understandable format, allowing researchers to clearly present relationships and conclusions drawn from the data.

4 Data Analysis

The data were collected from seven informants that ran FMCG warehouse in the Klang Valley, as summarized in the Table 1. All the informants ran large scale operations with manpower ranged between 30 to 120 at one time. Due to the non-disclosure agreement, researchers will then identify all the informants in alphabetical manner without revealing their identities. The results have been categorized according to the sub-themes under each theme, and each sub-theme is explained and analyzed in this chapter. By the end of the seventh interview, data collection was saturated as multiple respondents mentioned on repeated sub-themes. To improve the data analysis process, researchers use ATLAS.ti to better encode and analyze transcripts. Visualization of the data in the network graph using ATLAS.ti was added after explaining each sub-theme.

Table 1. Informants' profile

Informant	Position
A	Warehouse General Manager
B	Business Development Manager
C	Senior Manager
D	Warehouse Logistics Manager
E	Warehouse Manager
F	Warehouse Assistant Manager
G	Senior Warehouse and Distribution Manager

Table 2. Result summary on the impacts of pandemic on warehouse operation

Sub-themes	A	B	C	D	E	F	G
1.1 Infection within the warehouse	*	*	*	*	*		*
1.2 Insufficient workforce	*	*	*	*	*	*	*
1.3 Change in working hours	*	*		*	*	*	
1.4 Delayed operation time	*	*		*			*
1.5 Decrease in productivity	*	*	*	*	*		
1.6 Changes in sales volume	*	*	*	*	*	*	*
1.7 Inaccurate forecast		*					
1.8 Change in customer profile		*					
1.9 Insufficient warehouse space		*	*	*			*
1.10 Increased market returns		*	*				
1.11 Extra effort in communicating SOP				*			

4.1 Impacts of COVID-19 Pandemic on Warehouse Operation in Klang Valley

In Table 2, it is clearly reflected that the warehouses that forms the sample of study are being affected by the COVID-19 pandemic. Although pandemic has landed in the Klang Valley at the same time frame, the impact experienced by each warehouse shows a varied intensity. Through the interview process, the seven informants had raised a total of eleven effects that are adversely affecting their operations, and these impacts were made as the sub-themes to be discussed under the second theme. Out of the eleven sub-themes, seven of them were experienced by at least four of the companies, while the rest of the impact mentioned are less significant towards the other companies.

The most significant impact that was experienced by all seven informants are insufficient workforce during the pandemic. According to Informant D, he mentioned that *“So what we do in the that situation and then we are short manpower definitely yeah. Normally we operate 80 people in the one time and the MCO 1.0 we cut 50%...”* This

reduction of workforce by government has made the warehouse operators to struggle in making sure the warehouse operations were undisrupted. It was being mentioned by Informant C, *“So at that period of time, actually manpower until right now is our major concern. Due to this pandemic, people is kena COVID, they cannot work within 31 days, and then... So, this is the major issues until now, effecting our operation”*. The statement above shows that during the pandemic, the warehouse workers have the possibility of contracting the virus and needed to quarantine themselves for not less than two weeks during the MCO. The infected workers could not be able to contribute to the operations during their quarantine. This surely adds up difficulties to the operation as the available manpower on the working area was decreased under the government regulations.

Secondly, all the informants have experienced the change in sales volume during the pandemic. This refers to both positive and negative changes which experienced by different warehouses. Informant A, B and G reported an increase in inbound of goods, while Informant C, D, E and F shows a decline in sales volume. As mentioned by Informant B that the demand for storage had increased tremendously amid the MCO, due to the closure of premises which prohibits the outbound of goods. According to Informant F, *“because with the reduction of orders, right, the whole operation there are only...”*. This statement advocated that there is a decline in order volume, where the operation time were shrunk from twelve hours to eight hour or even lesser. This have resulted in the lower sales volume that directly decreased of the profit margins, collaterally lessen the wages of the workers.

Thirdly, the outbreak of the pandemic has also resulted in the infection within the warehouse. Informant A, B, D and E experienced the closure of warehouse due to the spreading of Coronavirus within their workplace. Informant D told that *“we had experienced COVID in our staff. So, what we did, we closed about two days that...”*. This statement conveys that out of safety and ethical reasons, the presence of confirmed case within the workplace have led to the shutdown of their warehouse. During the time, all warehouse operations were ceased, and business were forced to cut off which results in losses to the warehouse.

Moving onto the fourth sub-theme, five of the seven informants claimed a change in working hours as one of the impacts. It was mentioned by Informant A, *“Okay, so in terms of what MCO or whatever at all, we still will operate. Not 24 h, maybe a shorter working hour”*. During the pandemic, the warehouse operations of essential items were still allowed to operate but at a shorter hour. Quoting Informant B, *“working hours we have to extend working hours and used to be able to plan, you know, now you have less space to move...”* policy and restrict the number of individuals in each working station. Informant B pointed that with the limited working space and workforce available, the operations could only be carried out under the restricted condition. Hence, it requires the extension of working hours to cope with the workload that originally requires additional manpower and space. Also, the change in working hour was resulted by the curfew implemented by the government during the lockdown, which influences the delivery cycles of Informant E and F.

Additionally, Informant A, B, C, D and E convinced that the occurrence of COVID-19 pandemic had brought to a decrease in productivity. Informant D says that *“The major impacts productivity, productivity timeline all ends to end process there definitely is a*

not there is not on time...” During the first MCO, their business was prohibited to operate for nearly a month. Despite the losses, at the verge of warehouse operation recovery, it further compounded by limited manpower availability which inevitably resulting in a slow productivity.

Besides, Informant A, B, D and G had also experienced a delay in operation time. Informant A, B and G mentioned that the SOP had occupied the operation time, while Informant D and G experiences the delay in delivery of goods to their clients. This is being explained by Informant B, *“Pre-pandemic no scanning, no taking temperature all these, also the social distancing, also not there. So, massive changes is, of course...”* The safety procedures by the government have partially taken the operation time of warehouses for queuing and temperature taking. Informant A has also stated that each lorry driver was required to take their temperature upon moving into the warehouse. This delayed their outbound process as they have thirty to forty trucks coming in to the warehouse each day.

For Informant D and Informant G raised the issue of delay took place in their delivery operation. As per Informant D, *“So the delivery effected from the next day to the following day or until one week also have because a roadblock because some places cannot don’t have the access to go in. So these are the hardest challenges. So definitely have the all the areas we have affected for the delivery timeline.”* Due to the roadblock set up in the controlled area, the outbound hauliers could not access to the area, and they are unable to deliver the goods within the stipulated time. For Informant G, he mentioned that several roadblocks in one way that stop the lorry for inspection of goods and documents is contributing to the extended the duration of reaching the destination.

Conversely, these warehouses experienced increasing inbound and reduction in outbound, which results in congestion in the warehouse. This can be proven by the statement from Informant G, *“Less outbound and more inbound because they are storing the goods in the warehouse and then there’s no orders going out because during that...”*. Their statement reflects that only essential items are allowed to be for outbound, whereas the remaining items would be building up inside the warehouse. Informant B adds up that due to shop closure, outbound falls but inbound never stops as goods from China continues to enter and production still runs normally.

Notwithstanding, these common impacts revealed by more than four informants, Informant B has also raised additional impacts encountered by his warehouse. He stated that amid the pandemic, shifting in consumer demand on the goods and rising of e-commerce had greatly reduced the accuracy of forecast. In relation to e-commerce, he mentioned that the online retailers started to emerge, the customer profile changed, forcing their distribution routes and picking methods to be altered. Informant B and C both brings up the impact where there are increase in market returns. Informant C reiterated that, *“This is some unforeseen returns right. So, this is going to mess up our... Our area and also we have, we need to double... Double handling in the admin side...”* These market returns are creating extra workload to the warehouse personnel by double handling the same set of goods. Lastly, Informant D reflected that his team must contribute extra effort in communicating SOP to their staffs. He expressed that they need to spend time in educating the staff to comply with the SOP and it becomes challenging to convey those messages through online platforms at the initial stage of the pandemic.

Table 3. Results summary on the strategies applied by warehouse due to the pandemic

Sub-themes	A	B	C	D	E	F	G
2.1 Rotation / Scheduling	*	*	*	*	*	*	*
2.2 Minimizing risk of contagion in workplace	*	*	*	*	*	*	*
2.3 Coordinating sales/ storage condition	*	*	*				*
2.4 Communication with customers	*	*	*	*	*	*	
2.5 Provide employee with sufficient resources		*					
2.6 Manpower segregation		*				*	
2.7 Increase manpower				*			

4.2 Strategies Applied by Warehouse Due to the COVID-10 Pandemic in Klang Valley

Through the interview sessions with the informants, the researchers have probed for the strategies applied by warehouse to buffer the impacts resulted by the pandemic. As compiled in Table 3, all the seven informants have applied a total of seven strategies to cope with the pandemic.

To fully utilize the manpower under the constraint of workforce capacity and social distancing policy, all informants had implemented the rotation or scheduling of workers within their warehouse for fair distribution of workload. *“So what we did is we created two categories assume like we have 20 People, 10 People will be doing work from home. And another 10 people will be working at the warehouse...”* This statement by Informant G shows that rotation of workers was utilized due to the reduction of work force. The total numbers of staff were split into two teams, and each of the team was further separated into two shifts to complement the warehouse operations. For Informant B, this strategy was applied as the warehouse space was insufficient to hold all workers at a time due to the social distancing, at the same time making one of the shifts as back up of another. Informant C states that this strategy was being planned and implemented according to the operation volume to decide the working hours for each shift.

Secondly, all the informants also applied strategies to minimize the risk of contagion within the workplace. Under the aim of minimizing spreading of virus, various strategy has been utilized by the informants. Firstly, all the warehouses enforced SOP as per the government regulations. Quoting Informant B, *“Face masks is mandatory, sanitizer has to be positioned and you know, always have stock all the time. We have to...”* Basically, they made wearing face masks, sanitizing stations, monitor social distancing, taking temperature and scanning MySejahtera mandatory for all of the staff, similarly to the rest of the informants. Next, the informants require their staff or customers to be tested when they need to be present in the warehouse. Informant B and F informed that their warehouse conducts RTK Tests for the workers on a weekly basis, while Informant A, C, D, E, and G will only conduct RTK or PCR tests whenever there is suspected case within the warehouse.

According to Informant C, “*We using a chamber, we called it cabin, okay. Using a cabin as a quarantine area. So, if one of the staff is feeling unwell, so we are going to send these workers to one quarantine chamber...*” The warehouse handles suspected case by separating them using a quarantine chamber and conduct swab tests for them. Their workplace will then be sanitised, and the close contacts will be asked to quarantine at their own premises. The action taken to sanitise workplace were also being mentioned by Informant B, E and G. Other than that, Informant B, C, D and E split their teams into different working area or shifts to minimize the contact between workers.

Further to this, all the Informants except Informant G mentioned communication with customers as another strategy in moderating the consequences of pandemic. As mentioned by Informant B, “*The constant negotiation with the customer have to be, has to be established...*” In handling the dynamic situation amid the pandemic, Informant B viewed that it is vital for warehouse to constantly negotiate with their customer for constant replanning. Informant D also mentioned that they do notify the customers on the delivery updates by flying email or SMS. Informant F also stated they would communicate with customer whether the customer side are available for delivery so that the turnaround of goods can go smoothly.

Moreover, Informant A, B, C and G coordinated sales and storage condition during the period of uncertain demand. By Informant C, “*But in fact, this is not helping a lot. So we have no choice but we have to hold the containers in the yard.*” When the storage volume of warehouse rises, Informant C converts their goods within the warehouses to try accommodating more goods. Informant B also mentioned their strategy when dealing with warehouse congestion, which is to find for an overflow warehouse to contain the goods. Informant A mentioned that when during the period where demand for storage is increasing, their warehouse has insufficient capacity to store all the incoming goods, they will have to decline the new orders and keep a five percent of storage capacity as a buffer for their contracted clients or urgent returns.

Other than the four strategies above, Informant B, D and F had mentioned other three strategies which they had applied but not for other informants. Informant B said “*Before this, laptop will stop only the managers have, but now everybody has laptop. So it’s easier. They can work from home, they can work from anywhere...*” Due to the rotation and restriction of workforce capacity, they have provided all their staff with laptops to ensure that they have sufficient resource to conduct their job, even under quarantine. Next, Informant B and F also utilized the strategy of manpower segregation in their warehouse. Quoting Informant B, “*You need to split them. Not everybody has the same skill set, so you have to move the right people...*” Owing to the addition of overflow warehouse, Informant B have to segregate his team according to their skill sets to better manage the operation in each warehouse. Lastly, Informant D when facing with the shortage of manpower, they would hire contracted employees according to the business volume to avoid interruption in operations.

5 Conclusion and Discussion

All informants provided information about how their warehouses were functioning prior to the pandemic and indicated that warehouse operators have full control over their

resources to manage warehouse performance. These resources include pre-pandemic storage capacity, manpower and working hours to maximize operational efficiency and overall service efficiency.

To gather information on this topic, questions on assessing the impact of the COVID-19 pandemic on FMCG warehouse operations. Thus, the researchers' analysis in the previous section showed that all seven informants experienced the impact of the COVID-19 pandemic on warehouse operations. All informants agreed that warehouse operations faced various impacts during the pandemic. Therefore, it can be expected that the impacts mentioned by the informant will occur in the event of a possible future pandemic or endemic disease. The impacts to warehouses in the Klang Valley have been found to fall into three categories, namely workers, productivity and planning. The impact of the pandemic on warehouse workers is infections within the warehouse and changes in working hours. Due to the contagious nature of coronavirus, infection happens by transmission of virus from a carrier to uninfected person through the respiratory fluids, including in workplace. Infections within the warehouse creates anxiety and tension within the workers, which distracts them from their work. Workers will be concerned with their safety in workplace, also be worried about bringing the virus back to their lovely ones.

Next, the results show that the COVID-19 pandemic is also impacting warehouse productivity. This effect can be considered to be the largest effect on the bearing. Several effects contributing to this are warehouse infections, labor shortages, reduced productivity, and higher market returns, extra effort to communicate SOPs, and delays in uptime. The impact on warehouse productivity appears to be developing around staffing issues and government policies. Staffing issues affect warehouses as they play a vital role in accomplishing physical tasks within the warehouse. Warehouses with large numbers of infected workers must voluntarily close or be prompted to close. This has led to operational issues as more effort is required to manage close contacts in the workplace and the operational cost of hiring professional sanitization services increases.

Some of the outsourced services have been prohibited, which adds up the hassle on warehouses. In view of the government policies, the restriction on worker capacity directly reduces the output of the warehouse. Not only the policies that were enforced towards the warehouse affecting the impact, the policies landed within the supply chains, especially the upstream and downstream in the industry also brings an effect to warehouses. This can be represented by the situation where the closure of client premises increases the market returns of warehouses. In short, the increase in market returns give rise to higher probability of facing goods deterioration, especially for the fresh products. This will bring losses to the warehouse and their clients since the spoiled goods could not be marketed anymore. Increasingly, the rising of in market returns leads to double handling of goods, which results in a waste of time and effort to reprocess the items. These issues made the initial optimum productivity impossible during the pandemic. The slowdown of operation allows lower amount of order to be completed, leads to lower profits. The reason where impact in warehouse productivity needs to be managed is that it reflects the capability and performance of warehouse in being service provider or value adding partner. If warehouses fail to coordinate and locate their resources, they will lose the trust of clients and fall in their competitiveness. More importantly, warehouse that

shows an ability to complete orders or assist in buffering their supply chain's impact can appear stronger than those that could not.

Moreover, the effect of COVID-19 pandemic also acts on the planning of warehousing activities, indicated by the findings. Planning always comes ahead of actions. However, the pandemic has become an uncertainty to the planning of warehouses. The impacts that resulted in the issues aroused on planning matters are the change in working hours, change in sales volume, insufficient warehouse space, inaccurate forecast and change in customer profile. A change in working hour and sales volume affect the manpower arrangements, workload per day as well as the delivery per day. These impacts increase the difficulty in planning, as pandemic creates changes and destroys the plans of businesses. It requires additional planning effort to ensure least interruption within the operations. During the pandemic, everyone will feel stressful from health, job, or any other aspects. Hence, these actions must be taken to relieve their pressure, at the same time decrease the negative effect that could be brought into their work. On the other hand, the strategies to minimize risk of contagion were applied by the informants to prevent transmission of virus within the workplace. This strategy is crucial to make the workers comfortable or at least decreases their anxiousness to be physically present at work. To work under a minimum level of safety is one of their basic rights before serving the organizations. When workers feel safe at work, they can better concentrate on their work and reduce dissatisfaction within the workers.

In addition, there is a need to provide employees with the resources they need to work remotely. This is a strategy that complements employee rotation or scheduling to ensure they are equipped with the correct equipment to work as management expects. Just like wearing masks for protection, devices like laptops and business software need to be prepared to keep workers productive outside the warehouse. Third, any warehouse whose productivity is affected has a direct impact on its customers. Therefore, communicating with customers is essential to prevent their relationship with customers from being affected by lost productivity. This increases supply chain transparency and gives customers more time to respond and manage the final process. Additionally, this can give rise to higher cohesion among warehouse and its customer which reduces the conflict between both parties.

When planning warehouse activities, warehouse operators gain insight into rotation or scheduling, coordinate sales or storage conditions, and communicate with customers to manage their impact. When the initial plan is not feasible, warehouse operators assign their staff to develop a new plan that better supports operations. The new programs are important because they can provide workers with better guidance in dealing with a pandemic situation. In addition to this, coordinating sales and storage conditions is a measure to deal with fluctuations in demand. Warehouses need to identify their available resources and prioritize tasks when demand fluctuates. Only process the important items, no need to reprocess returns. They also need to filter the available demands to avoid overloading themselves with a workload they cannot handle.

In tandem to this, warehouses can also look for overflows from other warehouses to support the receipt of orders. Connections between branches are very helpful in overcoming storage issues. In the face of a pandemic, everything revolves around the adaptability and flexibility of organizations in dealing with issues that arise. The flexibility of the

warehouse can also explain the warehouse's relationship with its customers. During a pandemic, effective communication can be better understood from the customer's perspective. Therefore, communication is very important to reach a consensus with the client and achieve a mutually beneficial outcome. This facilitates better planning by clarifying minimum customer requirements and standards to operators.

As mentioned above, in the absence of research on the impact of the COVID-19 pandemic on FMCG warehouses in the Klang Valley, Malaysia, this academic study is expected to make a strong contribution to the existing body of knowledge. The research help logistics stakeholders gain a clear understanding of the impact of the pandemic and strategies to mitigate it. To achieve research objectives, this study impacts warehouse management by guiding warehouse operators to build agility in the face of risks posed by the pandemic (McMaster et al., 2020). The findings of this study highlight the approaches warehouses are taking to mitigate the impact of the pandemic on warehouse operations. It enables industry players to predict expected impacts and better prepare for future epidemics (Woong and Goh, 2021). It can be a reference to other warehouse operators in building a comprehensive risk contingency plan dealing with the pandemic.

Policymakers such as the National Security Council (NSC) in Malaysia will benefit from the determined impact of the pandemic on inventory management during the pandemic. This may influence national authorities to review and modify warehouse management support plans based on warehouse issues identified in this study (Jedynak and Bąk, 2021). Greater compatibility with the industry is achieved by standardizing procedures. This allows economies in countries affected by the pandemic to recover more effectively, but on the other hand increases the applicability of emergency measures in the industry. Logistics companies are accountable to shareholders and stakeholders. Not only is it beneficial for shareholders to take positions, such as profit maximization; it is also beneficial to interest groups.

In addition to the contribution of this study, it also has some limitations. The study was designed to be conducted in Malaysia, which limited the informant sample to FMCG warehouse operations managers in Malaysia. Differences in geography may lead to different conclusions due to differences in trade policies, cultural values, legislation, the magnitude of the impact of the pandemic, and more. Therefore, the results of this study will not be uniformly applicable to the entire industry, but only to bearings in a similar context. Having said that, the application of the data may be another limitation of the study. These raw data collected through qualitative methods are personal opinions based on the informant's experiences and insights, which may depend on their involvement in the topics discussed.

On the other hand, future researchers are advised to further study the impact and recovery strategies employed by warehouses in the post-pandemic era. According to the Prime Minister of Malaysia, he announced that Malaysia will transition from a pandemic phase to an epidemic phase on 1 April 2022 (Liang, 2022). As the pandemic phase of COVID-19 draws to a close, the issues facing research warehouses during the pandemic phase will be worth examining. In addition, they can compare the impact and recovery strategies of warehouses during the pandemic and epidemic phases of COVID-19. In conclusion, future researchers can continue to discuss the same area of research from a post-pandemic perspective. Moreover, future researcher can assess

the impact of pandemic on other types of warehouses, such as slow-moving consumer goods (SMCG), dangerous goods (DG), and smart warehouses. These warehouses differ in their operations, goods handled as well as the industry that they serve. Therefore, they may encounter other impacts other than those identified in FMCG warehouses.

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