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Green logistics and business adapted in B2C e-commerce Saudi Arabia market

Dr. Majed Gazzai H Alotaibi

Assistant Professor, Tabuk University Business School, Saudi Arabia,
m-alotaibi@ut.edu.sa.

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ABSTRACT

This Paper investigate how e-commerce stores adapted the business model of e-fulfilment customers. In addition, it will be explored current logistics model and environment obligations involved. Moreover, Saudi Arabia have considered the importance of the environment with following vision 2030. However, transportation has relied on heavily in recent years as result of e-commerce booming in Saudi market, which have some point of green logistics to investigate.

This Study will adapt qualitative method from interpretive approach of conducting 10 firms, two logistics service providers (LSPs) to explore various factors. In addition, targeting verity of industry and cities can obtain depth information that help with outcome of this research. Semi-structured interviews will be deducted with founder and logistic managers.

After Pandemic firms have occurred of various of changeable factors. Strategy plan, logistics and supply chain. However, Saudi vision 2030 support the environment with building mega projects such as NEOM and the Red Sea and the Line. Therefore, this study will focus on green logistics from B2C point of view in particular in the context of Saudi Arabia market.

This study contributes theoretically to our knowledge in both e-stores retailer in different cities with different category. In addition, to stand the immediacy of the obstacles and approached that adapted in Saudi Arabia context comparing to previous study results.

As well as the contribution to practical fields will be emerged with new result and model approach. Furthermore, investigate the difference of reasons behind assigned such model.

Finally, it might give insight from foreign investors to understand the model adapted and help to customised and adapted.

Keywords

E-commerce fulfilment, green logistics, Retail, environment, Saudi Arabia



INTRODUCTION

Global environments consider major issue worldwide, which most countries keen to focus on environment in the development plan. Saudi Arabia 2030 vision focus heavily on this topic by building some city and assigned rules to support that (Grand and Wolff, 2020). Therefore, strategy plan of firms might support the trend of green logistics in Saudi market. However, some previous study reveals that logistics factors not have an importance of other elements in particular, in small and medium enterprises (SMEs) (Alotaibi, 2017). On the other hand, this study not considering logistics model and the improvement of that process, which focus on does SMEs consider green factor on their strategy plan.

Thus, this study will focus on previous condition by exploring all involved points to answer the following question:

- 1. What are the sustainable current logistics model operating now?**
- 2. Have you considered green logistics in operation model? Why?**
- 3. What are the obstacles of not applying environment rule in operation?**
- 4. Does pandemic change the process for green or negative? explain?**

LITERATURE REVIEW

Overview of Green logistics at Saudi Arabia (SA)

SA consider as large country with more than 30 million habitants. Riyadh considered the capital and large city having most mega project. Recently, new projects had launched in north region such as NEOM, the line and the red sea project. Some infrastructure has reformed particularly in tech and internet related. Based on ranking of the G20 Saudi Arabia placed in second of 5G services. The internet users consider the highest in the middle east with 25 million internet users.(CITC, 2020). There are 36,447 e-stores, and sales are growing quickly due to significant investments in internet infrastructure (CST, 2021). Also, SA is ranked 55th globally in the Logistics Performance Index or LPI, thus has risen to 36th place and the World Economic

Forum as a consequence of a considerable movement in all aspects of future vision 2030 of development (WEF, 2021).

Green logistics and E-fulfilment

A variety of studies have discussed green and sustainable logistics (Sun et al., 2021), which conclude from 115 papers from 2012-2020 that technology and enhanced the operation to be more sustainable and economical efficient (Guo et al., 2023). Moreover, previous studies focus on supply chain demand especially in health care and vital goods. However, technology might not fit with most operations and trades.

Therefore, his study investigates the factors of green logistics at SMEs, which have had little research to date, to illustrate their status in SA green logistics market. Furthermore, to what extent pandemic effect the operation of firms supply chain (Rauter et al., 2017).

Applied green logistics model

Logistics and supply chain two concept have been disused richly in research (Lummus et al., 2001). In addition, new emerged of development can integrate some subject into the previous major concept. Logistic and supply chain development have made some researchers to illustrate the main task of supply chain as design strategy and coordination, whereas logistics to focus implement the strategy with linkage firms (Christopher, 2016) (Lummus et al., 2001).

Having said that, sustainable have more attention and concern which defined as "*to meet the needs of present without compromising the ability of future generation to meet their own need*" (WCED, 1987)p.18. Furthermore, green logistics comes from development of sustainable dimension such as : economic , environment and social (Sun et al., 2021). Thus, logistics focus to e green have to be aware of reduce of the impact of environment and consumption energy by design efficient logistics operation. (Marchi and Zanoni, 2017).Reverse logistic consider an issues in e-stores which can be supported in green.(Kawa and Pierański, 2021).

Logistic service providers

Logistic have many of definition which the most one used for online delivery that: from point of origin to the point of consumption "(Grant,



2012)p416. Further, as some e-stores relay on some firms of delivery whether as locally or globally this study involve to have more data that how third party logistics deal with operation in green logistics matter. Therefore, the definition of 3PL in this study as a ‘mobile application that handle orders from stores through consumer delivery’. In addition, model of green logistics in figure (1) shows the flow of green logistics from transportation and warehouse movement. Finally, 3PLs are involved in the majority of logistical activities during the pandemic and may support efforts by offering more creative solutions (McKinnon, 2010), which includes e-fulfilment for any incoming or outbound component of logistical operations. Also, international LSPs may improve innovative solutions with their knowledge and experience.

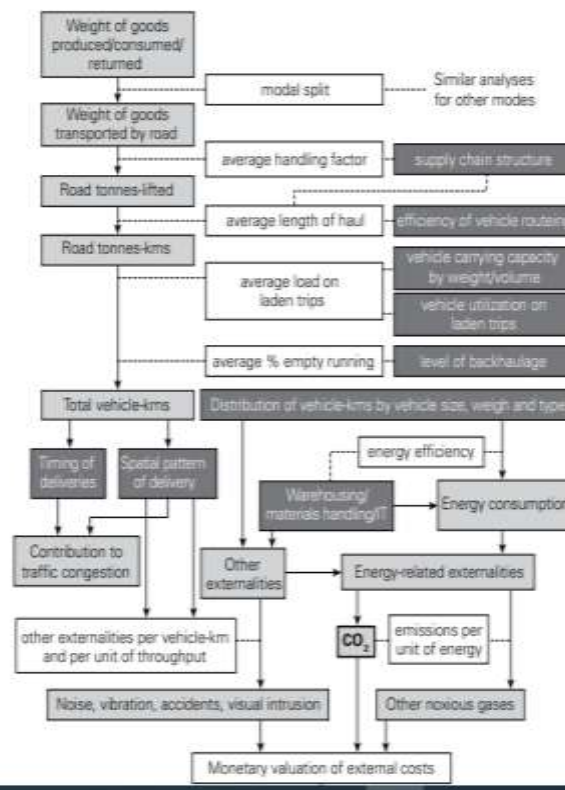


figure (1) Model shows the flow of green logistics illustrate transportation and warehouse movement (McKinnon, 2010)

METHODOLOGY

This qualitative study follows an interpretive paradigm to investigate empirical reality. In Riyadh and Tabuk, the majority of interviews were conducted in public spaces, whereas the rest of the cities utilized technology platforms such as Teams, Skype, and Zoom. Before

beginning each interview, verbal consent was obtained to record the interview. Each interview lasted between 30 and 45 minutes.

This investigation into empirical actuality utilized a qualitative methodology and an interpretive framework. The study is inductive, applies an interpretative theoretical paradigm of empirical reality, and relies on qualitative interviews to learn more about the current environment of e-firms in South Africa (Collis and Hussey, 2009). Twelve semi-structured interviews with SMEs owners or CEOs and logistics managers of SA retail and EC were conducted in Riyadh and other locations. The majority of interviews were conducted face-to-face, with the exception of four companies that conducted interviews online via the Zoom channel. Before each interview was recorded, verbal permission was obtained beforehand. Participants from SMEs are designated from E1 to E12. To assure legitimacy, every interview was conducted in Arabic, translated, and then back-translated. All data were entered into NVivo 13 and analyzed to generate the four main themes that will be discussed in the following section (Marshall and Rossman, 2014).

FINDINGS AND THEMES

Sustainable business strategy

Actually, the result from participant considers controversial such as supporting the green but not in the direct way other consider green partially but not focused. Trading high has effect as well. First, most firms are aware of the environment and support sustainable however, most of them not applied green logistics model in complete. Some interview output focused on cost and design the firms strategic model based on that. On the other hand, half of outputs have shifted after pandemic to hygiene protocol, which mostly applied and continues on it. Well, the interesting response came from one of participant as said "*we looking for minimise cost which usually move with sustainable goals*" E3. Thus, Vision 2030 pushing most sectors to applied green practice. And these practice have applied as the other respond from interviewee mentioned there is law to replace using gas instead of coal in restaurants



sector, which the result of that determined the goal of reducing cost and enhanced the green usage by saved amount of 30 thousand Saudi Ryle SR.

Moreover, the response of using green approach in delivery strategy have almost agreed using tech to follow and reducing the time of delivery. Last mile consider an issues specially with horizontal structure of city whether as capital with eight million people or smaller cites as some firms shifted to small cars that environmentally friendly. Finally, diesel car or van consider solutions for few firms, which the trend of environment try to reduce that. most firms have follow the law from government, which using paper instead of plastic and plastic that has special feature of recycle which next theme will be explained.

Government Regulation

As at previous theme presented, vision 2030 of kingdom of Saudi Arabia pushing all sectors to shift to sustainability approach. Therefore, firms in this study have reflected that some policies have applied and more to come such as packaging better to be one design fit for all and recycled. In addition, after Covid 19 some application have emphases to continue same standard. Three firms have response frankly that law first then considering the cost. On the other hand, green logistics might acceptable for some firms but the awareness not fully attentions that emerged during the interviews when some response came as this is alert and will give some attention on logistics strategy.

Challenges

Cost considers the highest responds from interviews as profitable firms looking from the highest revenue as possible. However, pandemic consider the accelerate for some environment process. Packaging, delivery, using tech and fast result of using some green applications have benefits for them. Some tools have compulsory from law but some awareness not available. For example; during pandemic packaging, delivery time and other approach that not applied but support new

solutions, green one as main. Based on result of (Alotaibi, 2017, Alotaibi and Grant, 2021) study that new logistics strategy applied and still continues. Green approach has testing and uses and be stand. More than half of samples concern of the price of raw material.

Technology

Technology and revolution of fourth industry help firms to have the maximum benefits of sustainability. Using detected programme and have plan of satisfaction the consumers in in somewhat achievement. However, from the sample tech help but there is not solution from 3PL. handling delivery segment can have benefits as controlled and using small car friend with environment. Last mile has not solved yet in particular with error during congestion traffic and error orders. The interesting result that none from 3PL and firms have considered environment in logistics strategy. There are no numbers of figures how that can help.

DISCUSSION

1-What are the sustainable logistics model operating now?

Well, most e-firms design they logistics design as reducing cost and not give the sustainability that importance (Sun et al., 2021). Moreover, SMEs have aware enough of green logistics system but looking for the somehow of application (Guo et al., 2023). Moreover, from firms view logistics model have applied as they follow Covid 19 protocol. The interesting point of participants that they aware of sustainability but the question how they can enhanced that rather than only tech as (Esmailian et al., 2020) study.

In addition consumer behaviour have changed as the standard after covid 19 still stand and fulfil their requirement (Alotaibi and Grant, 2021). On the other hand, government obligation force firms to adapt some green application such as sort of packaging, type of delivery with conditions rules. For example, one size of packaging fit all. Further, using recycle stuff must use. Abandon plastics dishes and replaced by



alumni environment friendly (Allaoui et al., 2019). Plastic bags if use must use recycle one as this one of major factor of vision 2030.

In previous study (Sun et al., 2021) some result comes that cost consider priority then follow comes, which in this study some answers truly found that but follow sustainability way sync with reducing budget. Finally, in transportation last mile still an issues as more than half firms shifted to diesel vans, which the green trend moving to small car and electric one. Horizontal structure of cities can't help in particularly 10 million inhabitants in capital (Oláh et al., 2018).

2. *Have you considered green logistics in operation model? Why?*

The answer of this question agreed from the most participants as yes. However, classified them as two sorts of answers the first one: they response comes as they already applied such green rules after pandemic in matters of packaging, new strategy delivery of last mile and so. Second, they need to enhance about application of using green in work but understand and knowing the best practice. Thus, best practice might affect the price especially small firms, which consider obstacle to applied green logistics. Actually, Saudi 2030 vision have programme to supervision the application that enhanced the awareness of support green. Law applied make the firms to stick with some environment practice. Consumer keen to asking for good packing and using environment stuff as some firms said, "*consumers asking for folding food with paper called as (envre approach) as sealed probably*".

3. *Does pandemic change the process for green or negative? explain?*

For sure yes. firms after pandemic have changed their logistics strategy as (Alotaibi and Grant, 2021) conclude in their study. During pandemic some economically revision have done as using more technology, interactive with customer more. In addition, last mile considers focused as fulfilment consumers increased more. Hygiene protocol support the

firms to sustain this practice as consumers fulfilment. Some firms have changed the oven and machine to environmentally. After covid some practice was obvious such as some area not covered before and some firms focus to those area, further during pandemic the accurate time to deliver and determine last mile delivery have examined in exact way.

4. What are the obstacles of not applying environment rule in operation?

In previous study the answer to this question will be " rising cost" however in this paper the answer from more than half is " awareness of application" (Oláh et al., 2018). The participants conclude that green approach needs to follow in clear way. However, the cost of raw material keep rising up, which consider an issue in particular small firms (Sun et al., 2021). Therefore, there are almost agreement that law from government to follow some application without realising that some alternative material available consider an issue.

CONCLUSION AND CONTRIBUTIONS

As stated in the current statutes of using green logistics, which state that *"the social world is mostly what individuals perceive it to be, and that reality is socially constructed as individuals attach meaning to their experience"*. This study has discussed the application of green logistics in SMEs in the Saudi Arabian market by using a qualitative approach to stand of more depth information and fully understandable of the current statutes of using green logistics (Narcisse and Harcourt, 2008).

The output has been divided under four main topics as a result. based on the examination of four key questions. Green applications, whether online or offline, have not had studied deeply on the SA market. So, the outcome has shown that the use of green logistics is not a priority and is not a strategy for business and logistics. However, law rules support to apply some application. Interestingly, for this study more awareness can help to apply using green logistics as experiment after pandemic and support to determined 2030 vision goals.

This paper contributes to our theoretical understanding of online and physical stores in the Saudi Arabia market by providing in-depth



information on business strategy, logistics strategy, and the 3PL perspective on the application of green logistics. Focused on green logistics may receive more attention, and the findings may be examined abroad to determine whether or not they are adapted and effective.

As is the case with all research, there are some limitations. First, there are numerous studies on green logistics, but few consider the Saudi Arabia market, in particular SMEs. A robust synthesis of conceptual and empirical papers is required to ensure the veracity, validity, and dependability of research. Finally, this study is exploratory and could be expanded to ascertain the generalizability of the findings not only in Saudi Arabia market but also in other non-Western contexts.

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