

The Acceptance of Green Supply Chain Management on Micro-Businesses in UUM

Yuhainis Mohd Yusoff^{1*}, Syafiqah Alias¹, Siti Norhasmaedayu Mohd Zamani¹

¹School of Technology Management and Logistics,
Universiti Utara Malaysia, Bukit Kayu Hitam, 06010, MALAYSIA

*Corresponding Author

DOI: <https://doi.org/10.30880/emait.2023.04.01.005>

Received 7 June 2023; Accepted 20 July 2023; Available online 31 July 2023

Abstract: Many companies have increased their resources and capabilities in response to the growing need for green supply chain management (GSCM) brought on by globalisation. These necessities are now essential for domestic and international competition. With increasing consumer awareness of environmental issues, micro businesses need to implement strategies to reduce the environmental impact of their products and services. This paper analyzed acceptance of GSCM among micro businesses at Universiti Utara Malaysia (UUM). As a university no.2 in Malaysia, GSCM among micro businesses is necessary. Moreover, this paper aims to be a comprehensive survey on technological organizational and environmental factors influence the acceptance of green supply chain practices on micro businesses in UUM. The sampling of the study focuses on micro-businesses in UUM and this study will be carried out through interviews which is qualitative. From the data analysis that we collect, we can see that the acceptance of GSCM in micro-businesses can be influenced by many factors but the adoption will give great impact on micro businesses. As overall, we can see GSCM acceptance are influenced in terms of technology, organisation, and environment factor, which are able to influence the decisions that micro businesses make to further practise GSCM in their day-to-day operations. Finally, limitations and directions for future studies are provided in the conclusion section.

Keywords: Green supply chain, micro-businesses, factor acceptance, technological, organization, environment

1. Introduction

GSCM is a new way of thinking about environmental management in Malaysia that focuses on supply chains rather than single plant improvements (Suryanto, Haseeb, & Hartani, 2018). Therefore, the green supply chain is able to build a more competitive advantage and give an edge to the supply chain. Similarly, incorporating green practices into supply chain management allows small business to not only provide a first-mover advantage through differentiation and cost management that are hard to emulate by competitors, but also to discover new market opportunities (Syed Abdul & Dong, 2017). GSCM practises are considered to be good for the environment. These practises include water efficiency, energy efficiency, waste management, conservation of the environment, recycling and reusing, management of toxic and hazardous substances, and transportation optimization. GSCM practises can be used during the design stage of a product, the sourcing and supplier selection stage, the procurement stage, the logistics control stage, the manufacturing and production processes, when the product is delivered to the end user, and at the end of the product's life. GSCM is a way to combine parts of both supply chain management and environmental management.

GSCM is connected to the improvement of the environment because it lowers the environmental risks and impacts that a company and its partners in the supply chain cause, all while improving the company's economic, operational, and environmental performance and striking a balance between the three. The rapid expansion of the economy and the unchecked consumption of resources by human beings have had a significant negative impact on the natural environment, which is essential to the survival of humans. The public's awareness of the importance of protecting the

environment continues to grow. The first step in integrating sustainable development concepts into supply chain management is green supply chain management, also known as "green supply chain management."

1.1 Problem Statement

Today, our community begins to realize how significant the impact of green supply chain management practices on micro-businesses is because it is closer to them and it is their daily use. Consumers and the broader public demand greener products as a baseline, but they do not expect to pay more. However, they are likely to condemn it if it is not there. Sustainable living is important to consumers. They are unwilling to make any concessions. And they do not consider that they should have to pay a higher price for it (Close, 2021). Although some global and local forces have begun to implement more systematic and complex supply chain systems in their organizations, the implementation of GSCM remains a challenge. The evolution of today's business environment has resulted in significant changes in customer demands. In today's competitive business environment, the focus is no longer on product but on value. GSCM is able to build a more competitive advantage but the acceptance of GSCM among micro-businesses is still low. GSCM acceptance factors should be studied. In this paper, we analyzed the factors of acceptance of GSCM among micro-businesses in UUM in terms of technological, organizational, and environmental factors.

The objective of this research is to discover whether organizational, technology, and environmental factors can impact the decision of micro-businesses in UUM to implement green supply chain practices.

1.2 Research Objectives

- i. To investigate whether technology factors can influence the acceptance of Green Supply Chain Management Practices on micro-businesses in UUM
- ii. To see whether organizational factors can affect the acceptance of green supply chain practices on micro-businesses in UUM.
- iii. To discover whether environmental factors can impact the decision of micro-businesses in UUM to implement green supply chain methods.

2. Literature Review

In this study, we will focus more on the elements that contribute to the acceptance of green supply chains in terms of organization, technology, and environment. Small-scale businesses were divided into micro, small, and medium enterprises, which were then known as Small Medium Enterprises (SMEs) (Mellita, Aliya, & Elfans, 2020). The goal of implementing GSCM is to minimize the environmental damage caused by variables such as pollution, the depletion of the ozone layer, and global warming. The use of recycled paper pads instead of plastic packaging is one example of a solution that falls into the category of "smart packaging." Other examples of this type of solution include using the correct size of packaging boxes, avoiding using oversized boxes for smaller consignments, and using the correct size of packaging boxes.

Green supply chain management: (GSCM) is the practice of putting environmental considerations into all phases of the production process, from initial concept to final disposal of products (Insight drives innovation). Micro-businesses that produce food and beverages unavoidably contribute to the causes of environmental degradation. As the benefits of GSCM are vast and wide-ranging, its applicability is not limited to large-scale businesses. Our community begins to realize how significant the impact of green supply chain management practices on micro-businesses is because it is closer to them and it is their daily use.

Micro-businesses: Micro-businesses are recognized under Malaysian legislation as businesses with fewer than five employees. Agriculture, mining, construction, services, and manufacturing all have total sales turnovers of less than RM 300,000 (SME Corp). Solopreneurs, freelancers, and other types of business owners who conduct their operations from a single physical location are all examples of micro-businesses. Although they normally have deeper relationships with their customers and require less operating capital, these types of firms can run into more difficulty when it comes to financing and marketing.

When it comes to the topic of green supply chain management, the primary purpose of carrying out this literature review is to investigate the acceptance of GSCM among micro-businesses that are located in UUM. The owners of a business are accountable for the entirety of the supply chain. Some businesses continue to operate as if water and energy management, as well as their overall impact on the surrounding ecosystem, are not significant factors in their business decisions. It is essential to strictly adhere to the use of technological tools that have a smaller negative impact on the surrounding environment. The acceptance of GSCM is influenced by technological factors, organizational factors, and environmental factors. The advent of technology has led to the acceptance of micro-businesses, which has implications for both the top management and the business size. The acceptance of the organization is influenced both by the support it receives from the government and by the pressure it receives from customers who want GSCM. When it comes to the environment, factors such as the cost of implementation and the degree of difficulty in applying GSCM to micro-businesses at UUM have an effect on it.

Many businesses see developing a green supply chain as a way to demonstrate their dedication to protecting the planet. Green supply chain management (GSCM) strategies, such as green materials management/manufacturing, green purchasing, reverse logistics, and green distribution, can be incorporated at various points in the supply chain. In general, GSCM is thought to increase green performance, reduce waste, and cut costs by encouraging efficiency and synergy among business partners and their leading organisations. It is anticipated that the combination of these factors will boost the company's profile, competitive edge, and marketing reach.

3. Theoretical Framework

The Solid Waste Management and Public Cleansing Corporation estimates that every day in Malaysia, almost 16,650 metric tonnes of edible food is discarded as garbage. To be more precise, there is a 15-20% spike in food waste throughout the holiday season (Hisyam Mohamad). Authorities are becoming concerned that this practise of disposing of food waste would have a severe impact on the environment due to the significant amounts of methane and carbon dioxide created during the natural decomposition process. Government and non-governmental organisation initiatives will fall short. For the sake of the planet and future generations, the community as a whole must do its part and recognise the significance of food waste management.

Many research articles have been published that discuss the benefits of GSCM. Many empirical researches, including those by Mohanty and others in India and Malaysia, have highlighted the characteristics that influence the usage of GSCM for SMEs in the Southeast Asian region. As a result, I'd like to do some research regarding about the acceptance of GSCM among micro businesses in UUM. The primary goal of this research is to determine what factors contribute to the mass acceptance of GSCM by micro businesses at UUM. However, cultural and economic variables may make this unusual research inapplicable to other countries. The research literature contains a number of different studies on the implementation of GSCM. However, only a very small number of empirical studies have been conducted to determine the factors that influence the acceptance of GSCM for microbusinesses in high-level institutions. The primary objective of that research was to determine what kinds of pressures, both internal and external, were responsible for the mass acceptance of GSCM practises. In addition, none of them concentrated on the acceptability of GSCM among microbusinesses by using the theories of technology, organisation, and environment.

4. Methodology

The purpose of this article is to explain the elements that encourage the acceptance of green supply chains among micro business in UUM. In order to accomplish this goal, the technique of data collection utilises sources that were gathered by way of a qualitative procedure. Specifically, a series of interviews were conducted with informants consisting of three selected micro businesses. The questions asked during the interviews were obtained from previous studies and then changed to fit the objectives of the current study. The interview was conducted using a cell phone to record it, and it was directed by a number of questions that were relevant to the topic. A transcription of the interview was created once the procedure of conducting the interview had been finished. In the purpose of keeping the individual's right to privacy and maintaining their anonymity, we will not disclose the specifics of this study's interview subjects.

The sample for the research study was consists of UUM micro businesses focuses on the food and beverage industry because it is frequently the cause of a number of detrimental effects on the environment, such as the emission of air pollutants and the improper disposal of waste. It is necessary to determine the acceptance micro businesses have in their determination to face the environmental management problems, and it is also necessary to suggest helpful mechanisms for them to use in this attempt. Because the food and beverage industry are the most accessible and closest to UUM, all of the sampled among micro-businesses are collected in this sector. There was a total of three people who agreed to be interviewed, and the interview itself consisted of them answering questions related to the study. The people who provided the information were either the managers or the owners of the businesses.

Our interviews and observations which is between October 2022 and February 2023. Data was obtained through the interviewees with estimated time spend 15-20 minutes per interviewee. The interview questions first concentrated on the interviewee backgrounds in an effort to define them that they qualify as micro businesses. The research objectives required the next step, which was the asking of questions about green supply chain acceptance factors. We had planned to do five interviews with local micro dealers surrounding UUM, but found that their responses were remarkably similar after just three interviews.

5. Results and Discussion

This chapter highlights the research findings and provides a detailed analysis of the qualitative data obtained in the study, which aims to investigate the acceptance of green supply chain management on micro businesses at UUM. Based on the findings of this study, we can determine whether organisational, technological, and environmental factors influence the acceptance of green supply chain management Practices.

This study is specifically applicable to micro businesses at UUM. As a result, we have created some obligatory questions that participants must answer in order to be eligible to participate in this study. It is written as follows:

Table 1 - Background and demographic of interviewees

Participant code	Gender	Age	Annual income less than 300,000	Workers	Position	Type of business
Participant 1	Male	50	Yes	10 people	Owner	Food and beverage
Participant 2	Male	40	Yes	3 people	Manager	Food and beverage
Participant 3	Female	28	Yes	9 people	Owner	Food and beverage

The following qualitative information was collected by conducting interviews. To collect research information, we conducted interviews with the owner of Inasis cafe and staff that working in the food industry at UUM. They were interviewed, and information was collected from them to help better understand their perspectives and experiences regarding the acceptance of green supply chain practices among micro-businesses in UUM. Participants in the study included owners of cafes and other small businesses. They run a variety of food-related businesses, including pastry shops, cafe that serving breakfast, lunch and dinner, and catering services. Most of their customers are UUM students and staff. In addition, the owner of the cafe is a person who has been at UUM for a long time who has managed to maintain the business for a long period of time. In addition, due to the code of ethics of privacy and confidentiality, sensitive Personally Identifiable Information (PII) about merchants will not be disclosed.

The participants were first contacted by the researcher going directly to the business owner to ask about their free time to conduct the study. Since all participants agreed to take part in the interview, the session was conducted face-to-face on a mutually agreed date. The interview session which was conducted around their cafe took about half an hour. Furthermore, data was collected and analyzed using written notes and also voice recording using a mobile telephone with their consent. The collected data is manually transcribed into text form and this information is checked to see if it aligns with the objectives of the study. The researcher identified recurring themes in the coding and categorization process as the data were analyzed within each data set and across data sets. In addition, after interviewing the first three participants, the researcher realised the study was complete and dropped the participant from further consideration.

5.1 Qualitative Data Findings

5.1.1 Technological Factor

According to the findings of a recent study conducted at UUM, the acceptance of green supply chains among micro-businesses is significantly impacted by factors technology such as cost and complexity. Previous studies have identified several characteristics of technological innovations (ie, cost of adoption, complexity, compatibility, relative advantage, trial ability, ease of use, observability, perceived usefulness) to impact innovation diffusion. We only considered cost and complexity in this investigation because those two factors appeared to be relevant with the research. Apart from that, as for the complexity, it is based on the understanding of the micro-businesses himself to understand and deepen what is GSCM, because we know that not all micro businesses have an educational background.

Hypothesis 1(H1): Cost has an effect on the acceptance of GSCM on micro businesses at UUM.

When making decisions on GSCM acceptance, the cost of adoption is a crucial construct. From the interview, found that there is a positive relationship between cost and the acceptance of GSCM. Due to the acceptance of GSCM, a significant initial investment is required in order to cover the costs that are affect the decision to accept GSCM. These costs include trash disposal, the use of electrical items that save electricity, packaging, and more. There is a possibility that GSCM will not be accept because of its high cost. Thus, the following hypothesis was proposed.

Participant 1: “if we want to replace electronic product that save electricity or are more environmentally friendly, it will consume capital and we do not have enough money for that. So, we’re sceptical about that”

Participant 2: “to dispose of garbage according to 3w, it requires tool, knowledgeable and experienced workers and it requires cost. We just a small business, to think and use money for that, I think that is not our priority”

Participant 3: “in terms of packaging, it is not so stressful because there is plastic packaging that is more environmentally friendly. However, if you want to use 100% paper packaging, it becomes difficult”

Hypothesis 2(H2): Complexity has an effect on the acceptance of GSCM on micro businesses at UUM.

In terms of complexity, all respondents have problems to understand and apply GSCM. Two of the respondents do not have higher education. However, even though another person has a background from higher education, he also has difficulties in understanding GSCM. Therefore, the following hypothesis was proposed.

Participant 1: "We don't really understand the terms used in green supply chain management and also in our daily business, we not really expose about GSCM".

Participant 2: "not given enough exposure to what green supply chain management is. Apart from that, i am too old to study and understand about that".

Participant 3: "green supply chain management is new to us (uneducated). I heard about that but I am not really interested to know about that".

5.1.2 Organizational Factors

A number of researchers have found that the acceptance of GSCM in organisations is significantly influenced by specific criteria, such as the size of the company and the support it receives from management. Although there are other criteria in the organisation, such as the quality of the human resources, we will only emphasise those that have a substantial effect on the acceptance of GSCM, which are the size of the organisation and the support of top management. In our analysis, we only included firm size and support from top management to demonstrate organisational elements because earlier research has shown that these factors have wider benefits. Therefore, the following hypothesis was proposed.

Hypothesis 3(H3): Top Management Support Has Effect on GSCM acceptance among micro-businesses in UUM.

The top management which is UUM plays a big role in micro-businesses to accept GSCM. It can be seen with the respondent stating that UUM is tightening in terms of food packaging. UUM prohibits traders from using polystyrene for every food packaging. Although it does not fully apply GSCM, it is seen to have a positive effect at the initial level. Micro businesses stated that if they receive the rules from the top management, they should comply and obey. Therefore, the following hypothesis was proposed.

Participant 1: "UUM gave a rule to not use polystyrene for all businesses at UUM"

Participant 2: "we cannot wrap food using polystyrene"

Participant 3: "apart from not using polystyrene, we do not accept other directives related to green supply chain management"

Hypothesis 4(H4): There is a Relationship between company size and GSCM acceptance among micro-businesses in UUM.

Size of the company significantly affects the decision to use technological innovation. Company size appears to have an influence on GSCM acceptance. Larger companies may be more likely to adopt innovative technologies than smaller business entities. Based on the interviews, micro-businesses are not exposed to GSCM compared to large companies. Most customers from small businesses do not care about the background of a business. Therefore, the following hypothesis was proposed. Therefore, the following hypothesis was proposed.

Participant 1: "we don't pay much attention to GSCM because we only do small business. Our disposal is not too many and also our customer is not mush to give effect for the planet".

Participant 2: "I've seen big companies promote their products by saying they care about the environment, but I'm not interested in knowing more"

Participant 3: "my business is only a small business; it does not really affect GSCM if it is applied"

5.1.3 Environmental Factor

External environment where firms conduct their business influences the organizational innovation capability and innovation acceptance intention. Several environmental variables such as the type of industry, network relations and

competition, environmental uncertainty and environmental munificence. In this research, only government support and customer pressure have been highlighted. Environmental uncertainty significantly influences acceptance of GSCM. Apart from that, stakeholder pressure is one of the external elements that will affect an organization's behaviour. Stakeholders can be either groups or individuals that have an involvement in the company's success. Stakeholder pressure should be taken into account as a theoretical construct. Both customers and government agencies rank high on the list of a company's most important stakeholders. Thus, the following hypotheses were proposed.

Hypothesis 5(H5): Governmental Support has effect on GSCM acceptance among micro-businesses in UUM.

Based on the interview's findings, we know that the government does not actively support GSCM. From knowledge of micro-businesses, the government does not provide any sort of guidance, regulations, or education to the micro-businesses operating out of UUM in regards to GSCM. It has been discovered that government help is a factor in the surrounding environment that affects how innovative technologies are used within a business. The government can both discourage and promote the application of innovation through the adoption of rules. The government can encourage technological innovation among Businesses by subsidising or offering other financial incentives. From the interview, found that government support may affect the decision to accept GSCM for micro-businesses.

Participant 1: "we have no pressure with the government regarding GSCM"

Participant 2: "if we are subsidized by the government to do GSCM, we will gladly accept"

Participant 3: "if subsidized by the government to do GSCM, we will consider"

Hypothesis 6(H6): Customer pressure has effect on GSCM acceptance among micro-businesses in UUM.

Micro-businesses should prioritize customer feedback because their customers are a key stakeholder. The three interviewers all agreed that micro-businesses in UUM would be compelled to use GSCM if customers demanded it. Thus, the following hypotheses were proposed.

Participant 1: "we do not receive pressure from customers to do GSCM"

Participant 2: "customers don't really care and ask about GSCM"

Participant 3: "if the customer forces us to do GSCM, we will consider"

6. Conclusion

According to the findings of the research, technological, organisational, and environmental elements all have the potential to affect the decision-making process of micro-businesses about GSCM. There are a number of statistically significant factors that influence the acceptance of GSCM among micro-businesses, including the cost, complexity, support from top management, firms' sizes, government support and consumer pressure. It is possible for us to draw the conclusion that each of these factors has an effect on the degree to which micro businesses at UUM accept GSCM. On the other hand, in theory, it is very important for the government to control and make all types of businesses, regardless of how big or small they are, apply GSCM in their operations because it is not only for the current generation but also for the generation that will come in the future. The following are some limitations as well as some suggestions for future research: The study has a number of limitations, all of which requires for additional investigation in the form of subsequent research. To begin, the scope of this research was limited entirely to the micro-businesses in UUM. Additional research could look into other universities. Second, for the purpose of this research, data was gathered from businesses that were in the food and beverage industry only. It would be good to gain a deeper understanding of the goal to apply GSCM across a variety of business and industrial sectors. In conclusion, this research only included a total of six criteria. There may be additional possible elements that have an effect on the utilisation of GSCM. Additional research could take into account additional elements in the GSCM adoption model, such as the part that supply chain partners play in the process of GSCM acceptance. Apart from that to having a grasp of how GSCM is applied in the context of micro businesses. Green supply chain management is a complicated system that requires businesses to evaluate numerous structures that influence the use of GSCM.

Acknowledgement

The authors fully acknowledged the School of Technology Management and Logistics, Universiti Utara Malaysia for supporting this work.

References

- [1] Close, C. (2021, 5 18). World Economic Forum. Retrieved from Global Markets Practice Leader, WWF International: <https://www.weforum.org/agenda/2021/05/eco-wakening-consumers-driving-sustainability/>
- [2] Hisyam Bin Mohamad, Muhammad. "The Irony of Food Waste Amongst Muslims – Laman Web Rasmi." Institut Kefahaman Islam Malaysia (IKIM), 4 June 2019, <https://www.ikim.gov.my/index.php/2019/06/04/the-irony-of-food-waste-amongst-muslims/>. Accessed 6 January 2023.
- [3] Insight drives innovation. "What is Green Supply Chain Management? Green SCM Definition and Meaning with Examples." GEP, <https://www.gep.com/knowledge-bank/glossary/what-is-supply-chain-management>. Accessed 6 January 2023.
- [4] Mellita, D., Aliya, S., & Elpans, E. (2020). GREEN SUPPLY CHAIN MANAGEMENT AT CULLINARY SMALL BUSINESS: DIJDBM, 513.
- [5] SME Corp. "SME Definition.?" - YouTube, 11 July 2020, <https://www.google.com/search?ie=UTF-8&client=tablet-android-samsung-rv01&source=android-browser&q=criteria+for+micro+businesses+in+malaysia>. Accessed 6 January 2023.
- [6] Suryanto, T., Haseeb, M., & Hartani, N. H. (2018). The Correlates of Developing Green Supply Chain Management Practices: Firms Level Analysis in Malaysia. Research Gate, 321.
- [7] Syed Abdul, R. K., & Dong, Q. (2017). Impact of green supply chain management practices on firms. Cross mark, 3.
- [8] Veera Pandiyan, K. S., Abdul, R. I., & V.G.R., C. G. (2011). Supply chain management practices in the electronics industry in Malaysia. emeral insight, 2.
- [9] Wyawahare, A., & Udawatta, N. (2017). A Framework for Successful Implementation of Green Supply Chain Management (GSCM) in Construction Organisations. EPiC Education Science.