SUPPLY CHAIN MANAGEMENT CHALLENGES TOWARDS HUMANITARIAN ACTIVITIES IN MANUFACTURING ORGANIZATION

Siti Muyassarah Abd Nasir
*Mohd Akhir Hj Ahmad

DOI: https://doi.org/10.37178/ca-c.21.5.010

Siti Muyassarah Abd Nasir
Department of Polytechnic Education and Community College Ministry of Higher Education Putrajaya, Malaysia

School of Technology Management & Logistics Universiti Utara Malaysia Kedah, Malaysia
email: smuyassarah@gmail.com

***Mohd Akhir Bin Hj Ahmad**
School of Technology Management & Logistics Universiti Utara Malaysia Kedah, Malaysia
email: makhir@uum.edu.my

ABSTRACT

Logistics and supply chain management has become critically essential not only for private sector logisticians, but becoming more important for humanitarian's activities. Currently, humanitarian logistics become a back-office role that was not given appropriate consideration and logistics services persisted underdeveloped[1]. However, logistics has ongoing to be acknowledged as integral to any relief operation. Supply chain challenges can lead to delays in carriage of supplies to the affected areas that are targeted by humanitarian organizations[2]. As a results, the basic supplies cannot be transported to where there are to be needed. Besides, it might become challenging to respond proficiently towards a humanitarian disaster when there is high uncertainty among humanitarian organizations due to supply chain challenges [3]. Factors that affecting humanitarian activities that have been studies in this paper are operation flow, information integration and technology. The major purpose of this paper is to investigate the extent to which the challenges of operation flow, information integration and technology influence the effective logistical coordination among the humanitarian organizations in Malaysia with hoping that the knowledge of this study will provide valuable contributions to humanitarian organization in developing remarkable approaches to improve organization competence and success.

Keywords: Supply Chain Management (SCM) Challenges, Operation Flow, Information Integration, Technology, Humanitarian Organization.

Introduction

In Malaysia, the awareness about disaster response was raised after the Asian

Tsunami in 2004. It required a better humanitarian relief operation because logistics operation is the main success consideration in a complicated humanitarian supply chain [4]. Commonly, governments or non-governmental organizations (NGOs) allocate humanitarian relief to those who are affected by a disaster. Nevertheless, humanitarian organizations are unable to deliver any humanitarian relief to the affected areas if that organizations do not have real-time information and accessibility of facilities[4]. Proficiency of humanitarian logistics to the disaster regions are crucial because it involves a huge scale provision of aid[5].

Table 1

Types of Disaster

	NATURAL	MAN-MADE
SUDDEN ONSET	Earthquake Hurricane Tarnadoes	Terrorist Attack Chemical Leak
SLOW ONSET	Famine Drought Poverty	Political Crisis Refugee Crisis

Source: [6]

Referring to[7], logistics roles in the humanitarian logistics must be able to support governments or organizations to execute response operations to manage performance, reduce redundancies and capitalize on supplies management. [5] stated that humanitarian logistics have to deal with unpredicted turbulence and ambiguity. Hence, humanitarian logistics have to learn from present logistics supply chain management. [6] described four causes for the complication of humanitarian logistics. The first reason is the tendency of disasters to happen in undeveloped zones where populations and facilities are more vulnerable[6]. Second, since donors are the source of financing and donors request for precise accountability on how aid is managed to people in affected areas and victims [6] Third, there is a combination of military and business distribution on the unprofit aim, searching for funds and wish to provide aid in the speediest and well-organized[6]. Finally, governmental concerns for example taxes and admission conditions would complicate speedy response to the emergencies[6]. Disaster aid operations are explained as paramilitary because this operations is a particular take place in an crisis situation, meanwhile, industrial logistics are organized for more regular activities such as repetitive production[2]. According to [8]supply chain management is the task of incorporating managerial units along a supply chain and managing supplies, information and financial flows to satisfy final consumer demands with the intention of improving competitiveness of the supply chain as a whole. [9]views supply chain management as the network of various organizations involved both over upstream and downstream connections in different varieties of activities and processes. These relationships involve a set of methods that are intended to competently participate suppliers, producers, warehouses and supplies so that stock is manufactured and disseminated at the right amounts, to the right places, and at the right time to reduce costs and fulfilling service level requirements [9]Consequently, the purpose of supply chain management is to produce value in the form of products or services to the end [5] Whereas, [10]proposed that responsiveness involves efficient coordination of activities and integration of processes along the chain. The ability of a supply chain to speedily and efficiently fulfill customers's requirements and adapt to unexpected changes in the marketplace depends on both internal and external organizational capabilities [11].

Operation Flow in Supply Chain Management

According to [12], humanitarian supply chain management are lack of acknowledgement the role of supply chain management in humanitarian operations cause the suspensions in humanitarian operations due to national barriers, demand ambiguity and challenges in accessing affected residents because insufficient transportation modes, high costs obstructing accessibility of the affected regions and failure to anticipate emergencies. Furthermore, global humanitarian operations may be delayed by managerial and logistical restricted access due to poor facilities in the aid-receiving area and the diversity of agencies, organizations and governments in conflict zones[13]. According to[14], humanitarian principles in complex situations is often very challenging, for example in an armed conflict. Any compromise on the humanitarian principles, like using relief to protect the victory of one side over another, would invalidate the operation and take it out of the ethical context and instruction of the participating organizations [14]This matter is cause by humanitarian effort cannot judge the conflict. Humanitarian work can judge the level of conflict is affecting residents only[15]. Keeping comprehensive track, control and responsibility of the humanitarian operations outcomes is challenged and time for inspecting and recording is constricted[8]. Moreover, objectives and performance metrics of humanitarian and regular supply chains differ notably[10]. Commonly, humanitarian supply chains do not have any profit aims and depend on deeply on volunteers and donors. Whereas, the stakeholders in regular supply chains, are the possessors of the chain[16]. However, various models constructed on minimizing cost or equivalently, maximizing profit for constructing well-organized supply chains can be practical to the humanitarian supply chains directly or with adjustments[16].

Information Integration in Supply Chain Management

Information integration in supply chain management refer to the assimilation of information from various sources with different theoretical, background and typographical images that were used in supply chain management [17]. According to [17] deficiency of preparation in humanitarian supply chains frequently causing in disorganizations such as the misuse of costly and insecure air charter, failure to pre-plan stocks, bottleneck caused by unplanned distributions and less of inter-organizational cooperation for information systems. Information integration in humanitarian supply chain improves supply chain and logistics operation that encompass procurement, storage and distribution of materials to beneficiaries [18]. Information integration in humanitarian supply chain also develops efficient functionality of humanitarian logistics and coordination with actors during the whole operation[15]. Failure to integrate appropriate information on a real-time basis with the supply chain cause the organization disorganized about what kinds of materials needs to be supplied to division of beneficiaries at appropriate quantity and location. Ambiguity of location imposes other challenges to preparedness actions such as aid supplies and tools pre-positioning and facility investment. Since humanitarian organizations deal with unexpected incidents, it is hard to foresee either when or where a disaster will happen. This conditions, makes affected locations to be forceful and hard to design for operations[18].

Technology in Supply Chain Management

The technology in supply chain management in this paper refer to the use of technology in organization to delivery information to affected areas. According to [5], fast change in the technological progresses and globalization has designed significant effect on the nature of effort where innovative practice of technology is essential to compete

worldwide. Flexibility can improve the company's competitiveness, particularly in decision- making process when applying technologies[2]. Most of the humanitarian organizations have spent slight investment in the development and operation of contemporary administration information systems, information technology or logistics systems[5]. Majority of humanitarian organizations have also underestimated the role of supply chainmanagement and integrated systems support in technology[6]. Accordingly, well valued of role of supply chain management could have a significant financial return on investmentbecause resources could be saved by simply being able to work more smartly more competently [11].

Research Methodology

Convenience sampling is a non-probability technique that was used in this paper. The samples were selected because the respondents were accessible. Since this study had limited time to obtain all data, this sampling method was the easiest method to collect all the data. Although, non-probability sampling technique has a lot of limitations due to the subjective nature in choosing the sample and therefore it is not good representative of the population, but it is extremely useful especially when randomization is impossible like when the population is very large or not well-defined [19]. The population for this study were 100 respondents from several manufacturing companies that involved in humanitarian activities. A set of questionnaire is distributing to the respondent at a company's area of Klang Valley and Nilai in order to achieve the research objective. Data were collected through questionnaires and were analysed according to question quantitatively. Further, the findings will then be compiled, summarized and presented in a form that is simply to be understood. The result was obtained by analysing data from statistics descriptive method and calculation of mean. The respondents were required to express their own thought and fill according to four scales point from the range of strongly agree to strongly disagree based on the given statement. The frequency indicates the frequency of respondents' information and show the information about the level of supply chain management challenges towards humanitarian activities. The mean is the average value of observation or variables and were influenced by extreme values obtained data either in population or sample. This shows the mean average of the number of respondents who gave feedback on the level of supply chain management challenges in humanitarian organization in several manufacturing companies that involved in humanitarian activities. Hence, the interpretation of the range of means were used to see whether the respondents can respond to the question given. This study put into three levels of score mean which were low, medium and high as done by previous studies. The result includes the percentage of respondent's data and show the information about the level of supply chain management challenges towards humanitarian activities.

Table 5

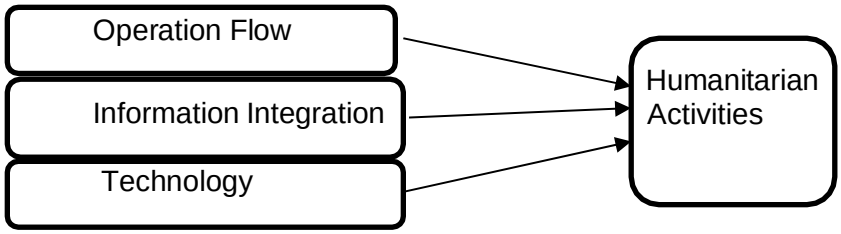
The levels of agreement were categorized into three groups

Sco of Mean	Result	Level
2.34 until 3.66	Less agree	Medium
3.67 until 5.00	Agree	High
1.00 until 2.33	Disagree	Low

Research Framework

The framework of this paper is constructed between three challenges in supply chain management that is considered in this paper which is operation flow, information integration and technology towards humanitarian activities in manufacturing organization that was constructed based on comprehensive literature review. Figure below presented the research framework model for this paper.

Figure 1: Framework model



Research Objectives

Research objectives in this paper are established to determine the level of supply chain management challenges towards humanitarian activities in Malaysian manufacturing industry. The objectives of this paper are recognized as follows:

1. To identify the level of operation flow in supply chain challenges towards humanitarian activities.
2. To identify the level of information integration in supply chain challenges towards humanitarian activities.
3. To identify the level of technology in supply chain challenges towards humanitarian activities.

Result

This section discuss the findings and data analysis obtained from the returned questionnaires. Through the distribution of survey, a total of one hundred respondent representing the manufacturing firms that involved in humanitarian activities responded. Thus, these one hundred respondents were selected as the respondents in this study. Having this in mind, forty-one item questionnaire was developed to measure the level of supply chain challenges towards humanitarian activities. The result and analysis of the data are as follows; the discussion starts with the reliability and descriptive analysis of all variables.

Reliability Test

Initially, this survey was conducted by using pilot study to determine whether the information or data collected from the instrument were related to the objectives of this study. The reliability of the constructs is being assessed by using Cronbach's alpha values. Table 2 presents the Cronbach alpha test results. As recommended by[20], the value of Cronbach's alpha between 0.50 and 0.95 is acceptable. A pilot study on the

instrument is aim to detect and correct any problems before the actual study done. Accordingly, pilot study can determine the level of reliability of questionnaire. A pilot study in this paper involved collaboration with human resources and logistics departments to distribute sets of questionnaires to managers and staffs. Around 30 respondents were randomly selected for pilot test. Pilot study can determine whether respondents had difficulty in answering the questions or not. All respondents were asked to returned the questionnaires when they done completing all the questions. All 30 sets of questionnaires tested and analyzed using Statistical Package for Social Science (SPSS) version 23.0 to get the alpha value. The purpose of Cronbach alpha is to access and carried out the reliability of the questionnaires. According to Sekaran & Bougie, (2010), the questionnaires were tested and gets the Cronbach alpha value at least 0.6 (α = 0.6) showed that the questionnaires is consistently reliable.

Table 3: *The results of Cronbach's alpha for pilot test*

Case Processing Summary

		N	%
Cases	Valid	28	57.1
	Excluded[a]	21	42.9
	Total	49	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.784	70

Table 3 above shows the Cronbach's alpha for each variables. It was proven that the questionnaires were easily understood by the respondents. Questionnaires were distributed to the respondents quantitatively in order to collect information and data. Those questionnaires were distributed to 30 manufacturing firms that have done humanitarian activities. Furthermore, the information and data that were collected from questionnaires were transferred to SPSS in order to gain the results of Cronbach's alpha for pilot test. Information and data were collected throughout this study found that the questionnaires that were distributed to the respondents was clearly understandable. Based on analysis, the researchers also found that all questionnaires had been distributed to respondents have achieved high reliability based on Cronbach's alpha shown. Therefore, the questionnaires are understandable, reasonable, acceptable and can be used for the next future study. In conclusion, based on this pilot test it can be concluded that the respondents understood those questionnaires and it shows that the questionnaires are valid and acceptable.

Frequency Analysis

Meanwhile, the information from the demographic survey were used to obtain the respondents data which are name of organization, type of organization, duration of the organization, current number of employees in the organization, major services in supply chain management and the major functions of humanitarian organization.

1) Organization type

Figure 2: Frequency on type of respondent's organization

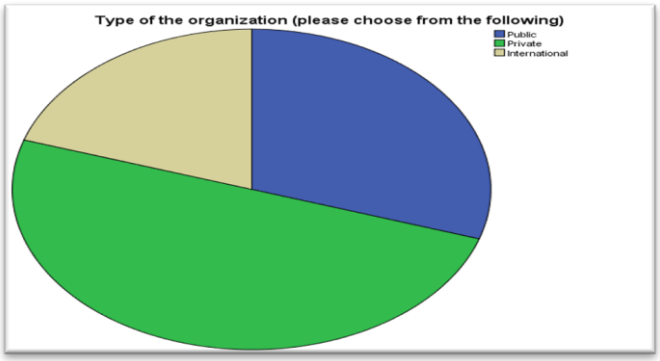


Table 4

The percentage type of respondent's organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Public	30	30.0	30.0	30.0
	Private	50	50.0	50.0	80.0
	International	20	20.0	20.0	100.0
	Total	100	100.0	100.0	

Based on the table 4 above, private organization have the highest percentage among the other organization which is 50.0%. Then, public organization stands as second highest percentage which is 30.0%, and international organization has the lowest percentage which is 20.0%.

2) Duration of the respondent's organization

Figure 3: Frequency on duration of respondent's organization

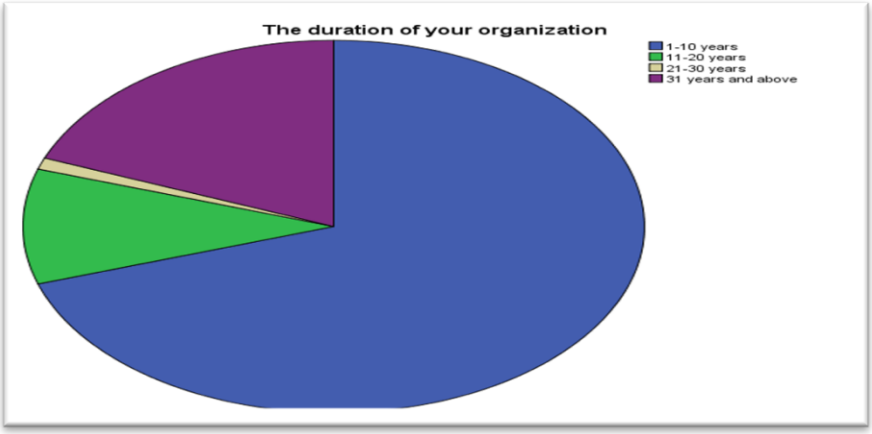


Table 4

The percentage duration of respondent's organization

Valid	1-10 years	70	70.0	70.0	70.0
	11-20 years	10	10.0	10.0	80.0
	21-30 years	1	1.0	1.0	81.0
	31 years and above	19	19.0	19.0	100.0
	Total	100	100.0	100.0	

According to table 5 above, 1-10 years is the highest percentage compared to others is 70.0%. Next, 31 years and above is the second highest percentage among all which is 19.0%. Then, 11-20 years have the percentage of 10.0% while 21-30 years is the lowest percentage which is 1.0%.

3) Supply Chain Management (SCM) in respondent's organization

Figure 4: Frequency on the presence of SCM department in respondent's organization

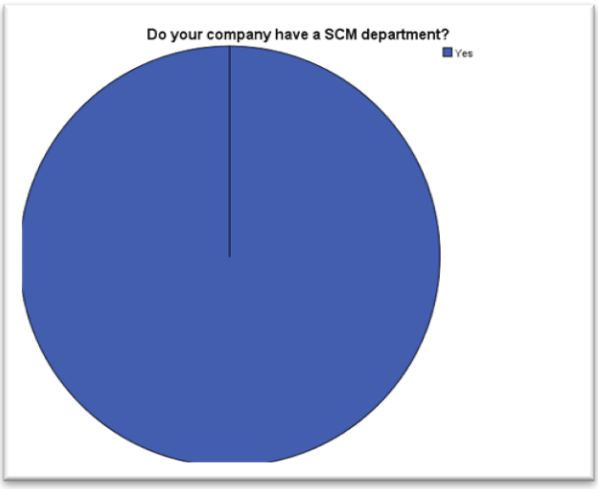


Table 6

The percentage the presence of SCM department in respondent's organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	100	100.0	100.0	100.0

According the table 6 above, the percentage of supply chain management department in respondent's organization is 100.0%.

4) Other department/unit that handle the function of SCM in respondent's organization

Figure 5: Frequency on other department/unit that handle the function of SCM in respondent's organization

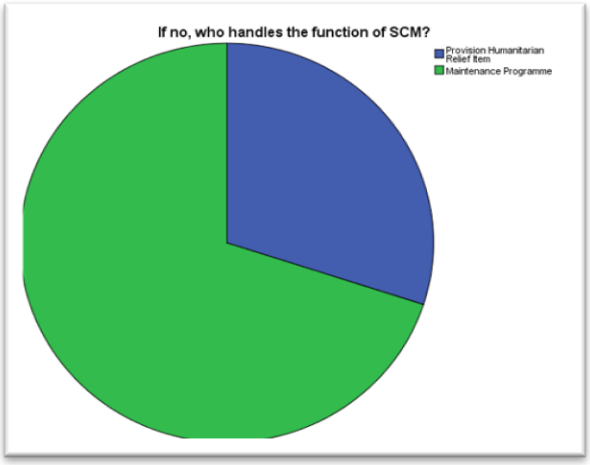


Table 7

The percentage of other department/unit that handle the function of SCM in respondent's organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Provision Humanitarian Relief Item	30	30.0	30.0	30.0
	Maintenance Programme	70	70.0	70.0	100.0
	Total	100	100.0	100.0	

According to the table 7 above, the highest percentage of other department/unit that handle the function of SCM in respondent's organization is maintenance programme which is 70.0%. Meanwhile, the lowest percentage would be 30.0% is provision humanitarian relief item.

5) The understanding of the concept of SCM

Figure 6: Frequency on the understanding of the concept of SCM

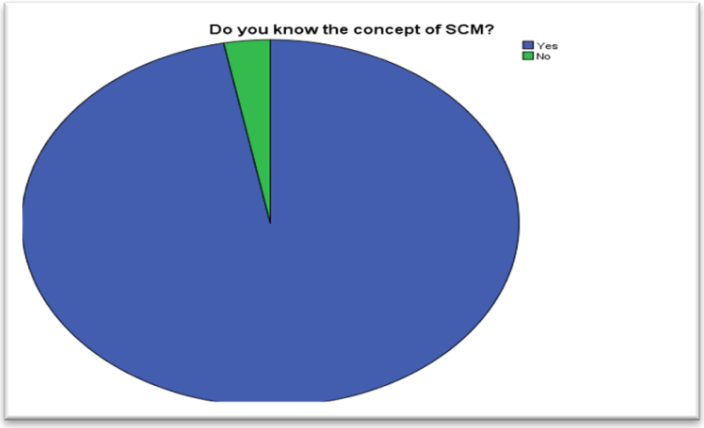


Table 8

The percentage of the understanding of the concept of SCM

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	97	97.0	97.0	97.0
	No	3	3.0	3.0	100.0
	Total	100	100.0	100.0	

According to the table 8 above, majority of the organizations are knowing and aware about the concept of SCM which is 97.0% and only 3.0% of respondents are not really understand the concept of SCM.

6) Number of Employees in Respondent's Organization

Figure 7: Frequency on current number of employee in respondent's organization

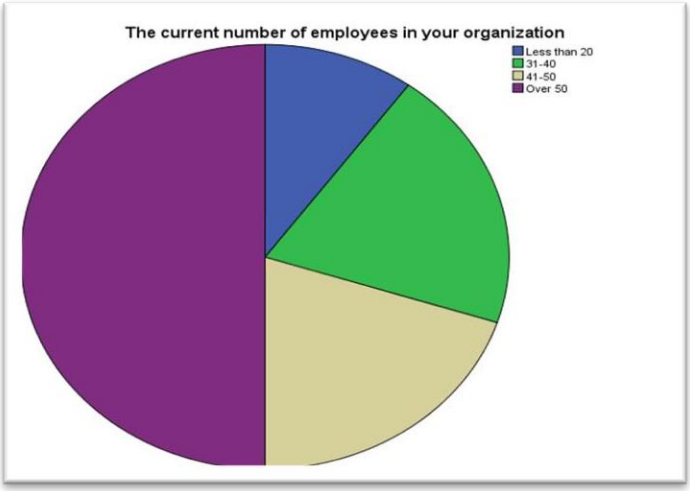


Table 9

***The percentage* of current number of employee in respondent's organization**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 20	10	10.0	10.0	10.0
	31-40	20	20.0	20.0	30.0
	41-50	20	20.0	20.0	50.0
	Over 50	50	50.0	50.0	100.0
	Total	100	100.	100.0	

According to the table 9 above, the highest percentage number of total employees in the organizations is 50.0% that is over 50 employees. The number of employees between 31-40 and 41-50 are the second highest percentage and have the same percentage that is 20.0%. Then, the lowest percentage number of employees is less than 20 which is 10.0%.

7) Challenges in respondent's organization operation

Figure 8: Frequency on the challenges that effect the respondent's organization

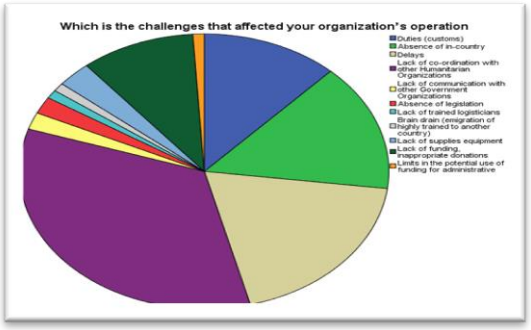


Table 10

The percentage of the challenges that effect the respondent's organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Duties (customs)	12	12.0	12.0	12.0
	Absence of in-country	15	15.0	15.0	27.0
	Delays	19	19.0	19.0	46.0
	Lack of co-ordination with other Humanitarian Organizations	34	34.0	34.0	80.0
	Lack of communication with other Government Organizations	2	2.0	2.0	82.0
	Absence of legislation	2	2.0	2.0	84.0
	Lack of trained logisticians	1	1.0	1.0	85.0
	Brain drain (emigration of highly trained to another country)	1	1.0	1.0	86.0
	Lack of supplies equipment	3	3.0	3.0	89.0
	Lack of funding, inappropriate donations	10	10.0	10.0	99.0
	Limits in the potential use of funding for administrative	1	1.0	1.0	100.0
	Total	100	100.	100.0	

According to table 10 above, the highest percentage of the challenges that affected respondent's organization operation is 34.0% which is lack of co-ordination with other humanitarian organization. Meanwhile, the second highest percentage is 19.0% which is delays. The third highest percentage is absence in-country which is 15.0% and the fourth is 12.0% which is duties (customs). Next, the fifth is 10.0% which is lack of funding and inappropriate donations. Then, the sixth is 3.0% which is lack of supplies equipment. While, lack of communication with government organizations and absence of legislation share the same percentage which is 2.0%. Lastly, lack of trained logisticians, brain drain and limits in the potential use of funding for administrative share the same percentage value 1.0% are the lowest percentage among all.

8) Major services in SCM in respondent's organization

Figure 9: Frequency on SCM major services in respondent's organization

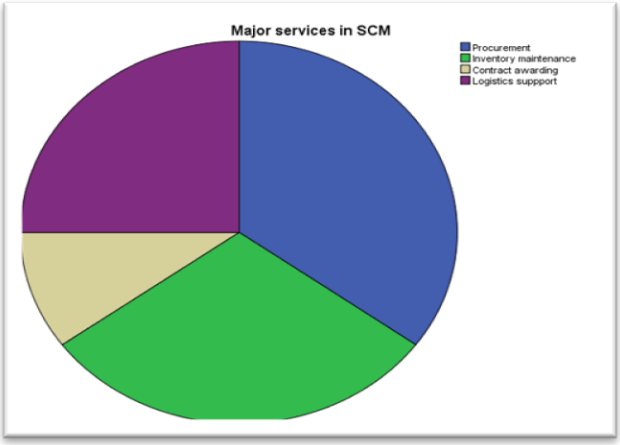


Table 11

The percentage of the SCM major services in respondent's organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Procurement	35	35.0	35.0	35.0
	Inventory maintenance	30	30.0	30.0	65.0
	Contract awarding	10	10.0	10.0	75.0
	Logistics support	25	25.0	25.0	100.0
	Total	100	100.	100.0	

According to the table 11 above, the highest percentage of services in SCM is procurement which is 35.0%. The second highest percentage is inventory maintenance with amount 30.0% and the third is logistics support with the percentage of 25.0%. The lowest percentage among all is the contract awarding which is 10.0%.

9) Major functions of humanitarian organization in respondent's organization

Figure 10: Frequency on major functions of humanitarian organization in spondent's organization

1) Major functions of humanitarian organization in respondent's organization

Figure 10: Frequency on major functions of humanitarian organization in spondent's organization

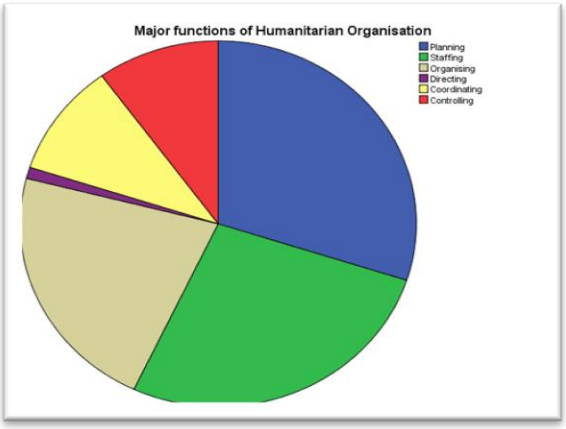


Table 12

The percentage of major functions of humanitarian organization in respondent's organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Planning	30	30.0	30.0	30.0
	Staffing	27	27.0	27.0	57.0
	Organizing	22	22.0	22.0	79.0
	Directing	1	1.0	1.0	80.0
	Coordinating	10	10.0	10.0	90.0
	Controlling	10	10.0	10.0	100.0
	Total	100	100.0	100.0	

According to table 12 above, the highest percentage of major function of humanitarian organization is planning which is 30.0%. Meanwhile, the second highest percentage is staffing which is 27.0%. The third highest percentage is organizing which is 22.0% and the fourth highest percentage is coordinating and controlling which is 10.0%. Finally, the lowest percentage is directing which is 1.0%.

Descriptive Analysis

The questions were given to the respondents to answer accordingly to the instructions. A total of 32 questions were given regarding the level of supply chain management challenges towards humanitarian activities. The questionnaires consist of 10 questions for humanitarian activities, 11 questions under operation flow towards humanitarian activities, 8 questions under information integration towards humanitarian activities and 3 questions under technology towards humanitarian activities.

1) Analysis of the humanitarian activities variable

Table 13

The analysis of the humanitarian activities

Variables	No	Question	Mean	Level
Humanitarian activities	1	Good infrastructure may influence the delivery of the right products.	3.42	Medium
	2	Proper information may affect the delivery of the right products	3.27	Medium
	3	Certainty in demand may increase efficiency the delivery of the products in the right quantity	3.43	Medium
	4	Good supplier may influence the delivery of product quantity	3.25	Medium
	5	Storage facilities affect the right condition of products	3.23	Medium
	6	Proper information integration promotes the delivery of the products to the right place	3.36	Medium
	7	Accessible locations may increase efficiency the delivery of the product at the right time	3.26	Medium
	8	Well planned operations may increase efficiency the delivery of products at the right time	3.21	Medium
	9	Adequate financial may deliver the right product on time	3.11	Medium
	10	Well prepared organization takes shorter average response time in the case of an emergency	3.30	Medium

Table 13 shows that the mean for the variable of the level of supply chain management challenges towards humanitarian activities. All questions were shared the same level which is medium. The result of highest mean is 3.43 and the lowest mean is 3.11.

2) Analysis of operation flow variable

Table 14

The analysis for operation

Variables	No	Question	Mean	Level
Operation Flow	1	The role of SCM in humanitarian organization performance is yet to be recognized	3.19	Medium
	2	External complications due to foreign relations limit's organization performance	3.18	Medium
	3	Domestic barriers in country policies of the disaster regions delays the responding towards emergency	3.09	Medium
	4	It is hard to keep complete track, control and accountability of the humanitarian programme and their outcomes when the operation is poor	3.15	Medium
	5	It is difficult to establish goals and performance metrics when the operation is poor	3.22	Medium
	6	Poor operations lead to inability anticipate disaster	3.24	Medium
	7	Lack of training programmes on relief supply chain operations cause inefficiency towards organization performance	3.31	Medium
	8	Inadequate transportation modes present challenges in accessing affected population	3.42	Medium
	9	Poor infrastructure in the area of operation	2.89	Medium
	10	Geographical characteristics of the affected region present challenges in accessing affected population	3.08	Medium
	11	Negotiation is limited to a certain short period of time in order to improve response time in delivering fairly to the affected areas	3.23	

Table 14 shows the variable regarding the operation flow towards humanitarian activities. The descriptive statistics shows that the total number of mean for this variable is 3.181 with the total numbers of respondents is 100 respondents. Based on the questionnaires above, some of the companies does not recognized the role of SCM in humanitarian organization performance. External complications occurred due to foreign relations limit's organization performance when competing with competitors because it increases costs, difficulties in achieving goals and organizational performance may be

decline. Then, domestic barriers in country policies of the disaster regions delays the responding towards emergency due to the lack of materials and strong operations to deal with various types of disasters. It is hard to keep complete track, control and accountability of the humanitarian programme and outcomes when the operation is poor because require more skilled and well-trained volunteers to carry out a better humanitarian program. Then, it is difficult to establish goals and performance metrics when the operation is poor because the goals and performance metrics are important for the operation to run efficiently in future. Poor operations lead to inability anticipates disaster and may cause an organization to suffer a high loss if they cannot cover any future disaster. Besides that, lack of training programmes on relief supply chain operations cause inefficiency towards organization performance because the training programmes needs to be upgraded to ensure that operation runs smoothly. Inadequate transportation modes present challenges in accessing affected population because the unavailability of transportation, make it tough to move food, equipment and assistance to the disaster victims. Poor infrastructure in the area of operation occurred due to lack of good infrastructure to run the operations. Geographical characteristics of the affected region present challenges in accessing affected population because the poor geographic features of the operation will have interrupted and slow down the process to save the disaster victims. Last but not least, negotiation is limited to a certain short period of time in order to improve response time in delivering fairly to the affected areas because if the disaster happens, it needs to be accelerated to save the victims.

3) Analysis of information integration variable

Variables	No	Question	Mean	Level
Information Integration	1	SCM were not given emphasis and integrated systems support.	3.03	Medium
	2	Lack of transparency of information and knowledge across the supply chain	3.02	Medium
	3	Organization share high amount of knowledge	3.13	Medium
	4	Organizations have a number of information networks	3.16	Medium
	5	Organizations have trust building	3.27	Medium
	6	Information access must meet ethical guidelines, contracted obligations and government regulation	3.16	Medium
	7	Organization ensures that information channels are shorts and efficient	3.29	Medium
	8	SCM activities share information across the organization	3.15	Medium

Table 15 shows the analysis for information integration in supply chain management. The descriptive statistics shows that the total number of mean for this variable is 3.151. Based on the results above, SCM were not given emphasis and integrated systems support because it requires sufficient precision in ensuring the information integration goes smoothly. Information cannot be conveyed to the party who is supposed to run the next processes due to the lack of transparency of information and knowledge across the supply

chain. Based on the results, the organization share high amount of knowledge because it is essential especially for operations that involves a lot of work. Furthermore, the results show that the organization have information networks to facilitate information communicated without any problems. The organization also have to align their words and actions for building trust with employees and ultimately for an organizations success. Information access must meet ethical guidelines, contracted obligations and government regulation. Next, organization ensures that information channels are shorts and efficient because information integration makes it easier to make the next process become better. Other than that, SCM activities share information across the organization so that all organizations are reaching out to the information more closely to the organizations goals.

4) Analysis of technology

Table 16

The analysis for technology

Variables	No	Question	Mean	Level
Technology	1	SCM is made possible in our organization by the use of Information Technology (IT) and Enterprise Resource Planning (ERP) tools	3.18	Medium
	2	All the staff members are well aware about IT and ERP tools	3.02	Medium
	3	All staff members make use of IT & ERP tools	3.11	Medium

Table 16 shows the mean score for technology in SCM challenges towards humanitarian activities. The descriptive statistics shows that the total number of mean for this variable is 3.088. Based on the questionnaires above, SCM is made possible in the organization by the use of Information Technology (IT) and Enterprise Resource Planning (ERP) tools because it can facilitate the company's business to distribute the relief to the victims of the disaster. Based on the result, all the staff members in the organization are well-known about IT and ERP tools because it is important to achieve the necessary success in the organization. Besides, all the staff members in the organization also make use of IT & ERP tools because it can simplify the pending work. In addition, suppliers are also aware about of existence of IT & ERP tools because it is important to achieve the necessary success in the organization. Suppliers are aware about the use of IT & ERP tools to facilitating suppliers to operate properly and speedily.

Discussion

This paper discusses the summary and conclusion of the study which carried out based on the questions that have been raised. Based on the findings, this study has been able to answer question about the level of supply chain management (SCM) challenges towards humanitarian activities in manufacturing organization. From the outcome, a summary has been made to explain the problem that derived from the data that has been analysed. The study has been successful meet three objectives which were to identify the level of operation flow in humanitarian activities, to identify the level of information integration in humanitarian activities and to identify the level of technology in humanitarian activities. This study is proved that the objective of this research is achieved based on Cronbach's alpha that taken from SPSS. The discussion on objectives of this study is as follow;

Objectives

1) To identify the level of operation flow in SCM challenges towards humanitarian activities.

The overall mean score for operation flow variable for analysis to identify the implication of SCM in the company is medium which is 3.18. This shows that the efficiency of SCM operation in company is in control and can be managed.

2) To identify the level of information integration in SCM challenges towards humanitarian activities.

The mean score for the level of information integration in humanitarian organization is medium which is the overall total mean is 3.15 for the analysis to identify the strength of information integration in the organization. The findings show that the implication of information integration in SCM is in good conditions.

3) To identify the level of technology in SCM challenges towards humanitarian activities.

The result has proven that the level of technology in the company is medium with overall score mean of 3.08. This shows that the company is aware the importance of technology usage for efficient flow of SCM in humanitarian activities.

Recommendation

1) Operation flow in SCM challenges towards humanitarian activities.

Some of the respondent remark on the poor infrastructures that could lead to inefficiency delivery of the materials to final consumption. Therefore, this study recommends to increase the flow of supply chain and improvement in infrastructure in the area of operation in order to achieve efficiency in the movement of supplies to the end consumers on the right time and the right place.

2) Information integration in SCM challenges towards humanitarian activities.

The companies are recommended to improve the information direct system that will help to enhance the efficiency of supply chain in the company.

3) Technology in SCM challenges towards humanitarian activities.

Few respondents mention about the lack of knowledge regarding IT and ERP tools. Thus, the firms can organize the programmes related to IT and ERP tools to the staff especially to those that volunteer to involved in humanitarian activities. Hence, this will increase the knowledge of IT and ERP tools among staffs and managers.

Conclusion

The conclusion outlines the analysis of the data. The descriptive analysis is based on the respondents' perception of supply chain management challenges towards humanitarian activities in manufacturing companies. The result revealed that the staffs and managers in company is satisfied with the management provided. Since then, the findings of the analysis show that the variables in the supply chain management challenges of the company is operation flow, information integration and technology is in control. The operation flow done by the company has the highest mean of 3.18 among the variables which is information integration is 3.15 and technology is 3.09. Moreover, this study has also increased the knowledge regarding supply chain management challenges towards humanitarian activities in the manufacturing company in Malaysia.

APPENDICES

Humanitarian Activities in Organization

Picture 1: CTSI Logistics (M) Sdn. Bhd. used this truck to delivery selected items to the affected victims.

Picture 2: CSR programme by Templer Park Dun Community Service Center at Pusat Pakaian Hari-Hari, Selayang

Picture 3: Giant gives school supplies to 100 Kampung Darau children

Reference

1. Özdamar, L. and M.A. Ertem, *Models, solutions and enabling technologies in humanitarian logistics.* European Journal of Operational Research, 2015. **244**(1): p. 55-65 DOI: https://doi.org/10.1016/j.ejor.2014.11.030.
2. Dubey, R., et al., *Agility in humanitarian supply chain: an organizational information processing perspective and relational view.* Annals of Operations Research, 2020. **2**: p. 1-21 DOI: https://doi.org/10.1007/s10479-020-03824-0.
3. Smith, B.G., *Developing sustainable food supply chains.* Philosophical Transactions of the Royal Society B: Biological Sciences, 2008. **363**(1492): p. 849-861 DOI: https://doi.org/10.1098/rstb.2007.2187.
4. Jabbour, C.J.C., et al., *An analysis of the literature on humanitarian logistics and supply chain management: paving the way for future studies.* Annals of Operations Research, 2019. **283**(1): p. 289-307 DOI: https://doi.org/10.1007/s10479-017-2536-x.
5. Christopher, M. and M. Holweg, *"Supply Chain 2.0": Managing supply chains in the era of turbulence.* International journal of physical distribution & logistics management, 41(1), 63–82, 2011 DOI: https://doi.org/10.1108/09600031111101439.
6. Kovacs, G. and K.M. Spens, *Humanitarian logistics in disaster relief operations. International Journal of Physical Distribution & Logistics Management, 37(2), 99–114.* 2007 DOI: https://doi.org/10.1111/j.2158-1592.2012.01054.x.
7. Chae, B., H.R. Yen, and C. Sheu, *Information technology and supply chain collaboration: Moderating effects of existing relationships between partners.* IEEE transactions on engineering management, 2005. **52**(4): p. 440-448 DOI: https://doi.org/10.1109/TEM.2005.856570.
8. Bealt, J., J.C.F. Barrera, and S.A. Mansouri, *Collaborative relationships between logistics service providers and humanitarian organizations during disaster relief operations.* Journal of Humanitarian Logistics and Supply Chain Management, Volume 6 Issue 2, 2016 DOI: https://doi.org/10.1108/JHLSCM-02-2015-0008.
9. Chan, N.W., *Economic and Welfare impacts of disasters in East Asia and policy responses.* ERIA, 2012. **8**: p. 497-545.
10. Pavlatos, C. and V. Vita. *Linguistic representation of power system signals.* Springer DOI: https://doi.org/10.1007/978-3-662-49434-9_12.
11. Leiras, A., et al., *Literature review of humanitarian logistics research: trends and challenges. Journal of Humanitarian Logistics and Supply Chain Management, 4(1), 95–130.* . 2014 DOI: https://doi.org/10.1108/JHLSCM-04-2012-0008.
12. Day, J.M., et al., *Humanitarian and disaster relief supply chains: a matter of life and death.* Journal of Supply Chain Management, 2012. **48**(2): p. 21-36 DOI: https://doi.org/10.1111/j.1745-493X.2012.03267.x.
13. Van Wassenhove, L.N., *Humanitarian aid logistics: supply chain management in high gear.* Journal of the Operational research Society, 2006. **57**(5): p. 475-489 DOI: https://doi.org/10.1057/palgrave.jors.2602125.
14. Tomasini, R.M. and L.N. Van Wassenhove, *From preparedness to partnerships: case study research on humanitarian logistics.* International Transactions in operational research, 2009. **16**(5): p. 549-559 DOI: https://doi.org/10.1111/j.1475-3995.2009.00697.x.
15. Kovács, G., P. Tatham, and P.D. Larson, *What skills are needed to be a humanitarian logistician?* Journal of Business Logistics, 2012. **33**(3): p. 245-258 DOI: https://doi.org/10.1108/09600030710734820.
16. Nurmala, N., S. de Leeuw, and W. Dullaert, *Humanitarian–business partnerships in managing humanitarian logistics. Supply Chain Management, Vol. 22, pp. 82–94.* 2017 DOI: https://doi.org/10.1108/SCM-07-2016-0262.
17. Makepeace, D., P. Tatham, and Y. Wu, *Internal integration in humanitarian supply chain management: Perspectives at the logistics-programmes interface. Journal of Humanitarian Logistics and Supply Chain Management, 7(1), 26–56.* . 2017 DOI: https://doi.org/10.1108/JHLSCM-12-2015-0042.
18. L'Hermitte, C., et al., *An integrated approach to agility in humanitarian logistics. Journal of Humanitarian Logistics and Supply Chain Management, 5(2), 209–233.* 2015 DOI: https://doi.org/10.1108/JHLSCM-04-2014-0016.