

The Teaching of Humanitarian Logistics at University Level

Muhammad Khan^{a*}, Amir Ishaque^b, Syed Fahad Ali Shah^c, Arif Hussain^d, Muhammad Zeeshan^e, Junaid Athar Khan^f, Alam Rehman^g, ^aDepartment of Management Sciences, Abdul Wali Khan University Mardan, Pakistan, ^bAir University School of Management, Air University, Islamabad Pakistan, ^cDepartment of Economics, University of Chitral, Pakistan, ^{d,f}Institute of Business Studies and Leadership, Abdul Wali Khan University Mardan, Pakistan, ^eCollege of Business Administration, Liaoning Technical University, Xingcheng, China, ^gNational University of Modern Languages, Pakistan, Email: ^{a*}muhammadkhan@awkum.edu.pk, ^bamir.ishaque@mail.au.edu.pk, ^csyedfahadali24@gmail.com, ^darifhussain@awkum.edu.pk, ^eChina.abobakarmzk1@gmail.com, ^fJunaid@awkum.edu.pk, ^gamrehman@numl.edu.pk

Purpose: As humanitarian logistics (HL) operate in a very complex, dynamic and uncertain environment. The whole society, especially the young educated, must know how to handle the situation and to provide the best help to the people in suffering. The primary purpose of this paper is to know the teaching of HL within a university course. **Methods or Procedures:** For this study, a descriptive methodology has been used to design the course outline and to construct a conceptual model for further empirically investigation. **New Results:** The critical contributions of the study are, the research offers students with the vital knowledge regarding the distribution of relief items to reduce the suffering of people affected by disaster and train students with the essential skills and competencies to become effective logisticians. **Conclusion:** The underlying rationale for teaching this course is to facilitate victims of disaster through graduate students as they have the knowledge of effective HL and also to enhance the students' employability. Furthermore, the findings contribute to the existing literature of HL and explore research gaps. Despite the continuously improving logistics education, ironically, no researcher until recently analysed the crucial issue of whether or not teaching of HL at university level can improve the performance of HL.

Keywords: *Humanitarian Logistics, Teaching, University, Research & development, continuity and sustainability, Skill and confidence building, Career building, information sharing, Performance*

Introduction

Disaster risk is an imperative reality. Recently human suffering has increased owing to increases in the intensity and frequency of both natural and manmade disasters. In the past several years, more than twenty million population in developing countries have been affected by climate change (Anparasan & Lejeune, 2017; M. Khan, Yong, & Han, 2019b; Maikhuri et al., 2017). In the last four decades from 1970 to 2010, in South Asia countries alone 980,000 people died, and more than that were severely affected while 1333 major disasters were recorded (Ahmed, 2013; M. Khan, Yong, et al., 2019b). In South Asia, Pakistan often faces both natural and manmade and also both sudden and slow-onset disasters (A. N. Khan & Ali, 2015), for example, between 1993-2002 casualties accrued almost 6037 and around 8,989,631 were affected (M. A. Khan, 2007). Kreft, Eckstein, Junghans, Kerestan, and Hagen (2013) indicated that in 2012 the position of Pakistan was on number third affected by harsh weather events. After 2010, Pakistan has faced flooding every year. Along with flooding, different intensity of earth-quacks frequently occurred between 1935 to 2015 and onward (Cheema, Mehmood, & Imran, 2016).

HL plays an imperative role in the success of the disaster relief operation (DRO). In humanitarian relief, the central position is occupied by HL (Vitoriano, Ortuño, Tirado, & Montero, 2011). As the participation and cost of logistics account for about 80% of the total DRO cost (M. Khan, Lee, & Bae, 2019; M. Khan, Yong, et al., 2019b; Nurmala, de Leeuw, & Dullaert, 2017). Following a disaster, the employees' turnover can be more than 80%, especially for the logisticians and field workers (Thomas, 2003). It is also noted that particularly relief agencies do not keep in their team a sufficient number of logisticians nor providing proper training to make them effective humanitarian logisticians (Bealt, Fernández Barrera, & Mansouri, 2016).

Furthermore, as many relief service providers are not professional in logistics, but volunteers wish to assess and help affectees, and most of them have no professional knowledge of HL. Given this reality, it is crucial for equipping this generation of students with skills that would help people in this difficult time of disaster with the ability to be flexible, adaptive and proactive. In this situation the only way where the young educated must have basic knowledge of HL.

The potential of the teaching of HL and their positive impact on HL performance have remained relatively unexplored. Hence, this research focuses on the teaching of HL at the university level. The key objectives of this study are to present a course outline and a conceptual model which need to be investigated further. Also, there is a need to develop learning regarding HL, enhance course design and offer sustainable help to the victims. This research adopts a descriptive methodology to design the course outline and to construct a

conceptual model to achieve these objectives. The key contribution of the study are: the research offer students with vital knowledge regarding the distribution of relief items and train students with the critical skills and competencies to become effective logistician. In addition, the underlying rationale for teaching this course is to enhance the students' employability. Furthermore, the findings contribute to the existing literature in HL and research gaps are explored, and suggestions are made for future researches.

The rest of the study is organised as follows. The second part discusses the literature review. The third part discusses the proposed conceptual framework and hypothesis. Part third present the research design. Finally, the fourth part highlights the concluding discussion.

Literature Review

The range of HL activities contains on procurement, transportation, tracking and tracing, custom clearance, storage and last-mile distribution (M. Khan, Yong, & Han, 2019a; Thomas, 2003). Logistics consider as a linkage between disaster mitigation phase and response phase, between distribution and procurement and between field and headquarters (Van Wassenhove, 2006). HL is not the focus of studies; even it represents unique and difficult challenges. Most of the organisations want to provide training and education to their staff, but they do not know where and how to provide it. Furthermore, lack of formal education, volunteers involved in the HL activities without any knowledge or training (Bölsche, Klumpp, & Abidi, 2013). The gap between HL as academia and what happens on the ground is very large (Bölsche et al., 2013).

Nowadays, sustainability is seen in terms of social, economic and environmental dimensions (Kuhlman & Farrington, 2010). To sustainable response to any disaster, all individuals need to bear responsibility for their lives, where they should be educated in a way that develops their potential skills to be creative, self-confident and to involve in a participatory approach with society. The relevant skills and self-confident are essential for logisticians (Dlouhá & Pospíšilová, 2018). It turns enhances sustainable economic growth, which, in turn, reduce poverty (M. Khan, Lee, & Bae, 2018). The teaching of HL at university level leads to shape and structure lives, increase values of community, prevail justice and ensure human rights, work for peace, stability and dependency. Therefore, the teaching of HL at university level is vital where these students as a volunteer can assess victims properly (Aguilar & Retamal, 2009) and can provide up-to-date information (Ahmad, Bakar, & Ahmad, 2018).

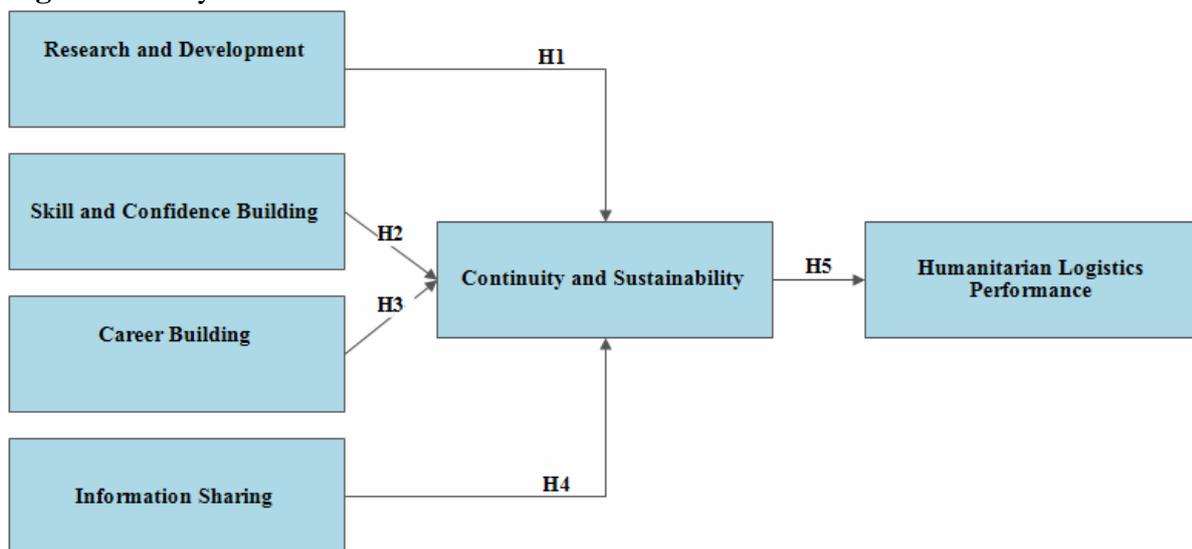
In the aftermath of a disaster, the volunteer university students not only can help in effective HL but also can build resilience and can provide education to children especially in the developing and underdeveloped countries (Aguilar & Retamal, 2009). Effective knowledge and skills of HL can be provided through organisational training and by lecturers or trainers to provide basic formal education (Ahmad et al., 2018). The course covers logistics and supply

chain (SC) management learning outcomes. The students will be trained through direct voluntary experience with some humanitarian organisations (HOs) and class lectures by faculty members. Furthermore, the HL course also covers, to some extent, corporate social responsibilities. Some reports results conducted by students will be shared with HOs. The volunteer works, and reporting will provide students with the opportunities to publish paper relevant to HL. Interest and progress in research have led the students, as well as the faculty to the adoption of the HL course, can be offered at the university (P. Goffnett, Keith Helferich, & Buschlen, 2013).

Proposed Conceptual Framework and Hypothesis

This section focuses on the HL performance model through the teaching of HL at the university level in Pakistan with multiple six variables. In other words, the section presents an HL performance theoretical model which underlies hypotheses. The proposed theoretical framework (Figure, 1) systematically structured the interrelationship between research and development, skill and career-building and information sharing and continuity and sustainability and humanitarian logistics performance.

Figure 1. Study Framework



Research and Development

From the literature, the design and development of the teaching of HL at the university level are of utter importance as a way of facilitating sustainable and continuous improvement of HL performance through research and development. The volunteer works, and reporting will provide students with the opportunities to publish paper relevant to HL (P. Goffnett et al., 2013). The literature has revealed the real needs of the research groups in the field and

highlighted the need for a formal education at university level which can also offer a suitable platform for research in the field (Rapado-Castro et al., 2015). Regarding the role of continuity and sustainability in the association between research and development and humanitarian logistics performance, the framework reveals that research and development bring continuity and sustainability, which further leads to humanitarian logistics performance. Thus it can be hypothesised:

Hypothesis 1(H1): Research and development mediating by continuity and sustainability are more likely to enhance humanitarian logistics performance.

Skill and Confidence Building

The main purpose of HL education is to develop people skills, attributes and behaviours (Gibb, 2005). These skills will enable them to enhance employability and also the skills of logistics. This, in turn, will have a positive impact on the performance of HL. Karunasena and Amaratunga (2016) found that formal education and training are the critical capacity gaps prevent skills and confidence building. The adaptation of HL education at university level can be revealed to add value in multiple ways, containing the development of skills and confidence building in group working and communication (Kasturiratne, Lean, & Phippen, 2012).

It is possible that logistician without study the course of HL will face the problem of lack of confidence, reflective practice and communication. Whereas the classroom can provide a real logistician scenario and to develop critical thinking, group work and analysis skills (Kasturiratne et al., 2012). However, despite the importance of skill and confidence building through the teaching of HL at the university level, this plays a significant role in the performance of HL. Therefore, it can be hypothesised that:

Hypothesis 2 (H2): Skill and confidence building mediating by continuity and sustainability is more likely to enhance humanitarian logistics performance.

Career Building

Teaching method increases research career building through sustainable professional development (Rapado-Castro et al., 2015). In HL, with the changing nature of responsibilities and the career concept, in the field, the career responsibilities shift to employees. Therefore, people need to be proactive regarding their careers (Raabe, Frese, & Beehr, 2007). Along with specific knowledge (logistics), formal education enables people to explore their interpersonal skill, which further helps in one's career-building (Raabe et al., 2007). Generally, career-building is based on formal education and training, increasing the visibility of employees. In addition, employee visibility increases the pay of the person, which in turn leads the employees

to be much satisfied with their careers. Concerning the roles of Continuity & sustainability, the model shows that Continuity & sustainability influences the relationship between career building and HL performance. The role of career-building is hypothesised as follows.

Hypothesis 3(H3): Career building mediating by continuity & sustainability is more likely to enhance humanitarian logistics performance.

Information Sharing

The course aims at providing useful information to facilitate people interaction and enhance knowledge sharing. Accurate information of the affectees and the loss occurred is imperative for effective HL. During HL processes network with other relief service providers also play an important role as a source of knowledge (Granovetter, 1985). The speed is the main factor for effective HL, whereas it depends on numbers and expertise of logisticians to receive and distribute the donations at the disaster prone-area (Kabra & Ramesh, 2016). Information sharing in SC reduces uncertainty (M. Khan & Bae, 2017) and enhances HL performance (Wadhwa, Mishra, Chan, & Ducq, 2010). In HL process, accurate information of the affectees and the loss occurred is imperative for effective HL, but it can be lost with the employee change (Lu, Goh, & De Souza, 2013). The discussion above exhibits the significant positive relationship between performance and information sharing. This relationship is also supported by agency theory. According to the importance of information sharing in the organisation, this study examines whether the practice of information sharing can enhance the HL performance mediated by Continuity and sustainability.

Hypothesis 4(H4): Information sharing mediating by continuity and sustainability is more likely to enhance humanitarian logistics performance.

Continuity and Sustainability

A key consideration is continuity and sustainability. To sustain and keep continue an effective operation into the affected areas and to protect the fundamental need of survivors, it is imperative to focus on the proper distribution of the relief items, through the efficient plan, implantation and sufficient information in the disaster-prone area (Rabta, Wankmüller, & Reiner, 2018). HO's activities are ending after some time in the disaster-prone area. However, the aim is to ensure the HL education at the university level will continue, develop and cover the remaining flaws in the aftermath of disasters. The teaching of HL can extend relief operation from a narrow focus on activities in particular response situations to strategic considerations of how best to operate with sustainability and continually (De Brito & Van der Laan, 2010). Sustainability can be used in the HL context to sustain an operation, keep aid through continuous funding (financial continuity), and to embed it within research and

development activities. It can also relate to the planning and design to continue the help of victims needs after HOs have left a disaster-prone area (P. Goffnett et al., 2013). The study also highlights the need for a sustainable strategy of ‘teaching of HL at university levels in the disaster-prone countries. Consequently, it can be posited that teaching of HL at the university level, can help in research and development, skill and confidence building, career building and information sharing, will bring continuity and sustainability in HL process. Therefore, in this study continuity and sustainability is mediating between explanatory variables and HL performance.

Hypothesis 5(H5): Continuity and sustainability are more likely to enhance humanitarian logistics performance.

Humanitarian Logistics Performance

In humanitarian relief, the central position is occupied by HL (Vitoriano et al., 2011), even though the participation and cost of logistics account for almost 80% of relief operation (Nurmala, Nurmala, et al., 2017). In addition, approximately 40% is wasted due to several factors including complexity, uncertainty, urgency and duplication of efforts (Bealt et al., 2016). The performance of HL can be improved, and disaster risk can be minimised when relief aid switches away from a conventional mode toward modern. Effective HL can not only decrease risk, cost, and timelines but can also save lives and reduce suffering. Therefore, HL must be fast, fair and safe (N. Madu & Kuei, 2014; Vitoriano et al., 2011). In order to sustain and keep continue an effective operation into the affected areas and to protect the fundamental need of survivors, it is imperative to focus on the proper distribution of the relief items, through the efficient plan, implantation and effective information in the disaster-prone area (Rabta et al., 2018). The main objectives of HL are to mitigate and prepare against disasters occurrence and to fulfil the right things better, faster and cheaper. A well-designed HL contains, analyse relief needs, emergency rescue situations preparation, inventory and team management, organised relief items and last-mile distribution planning (N. Madu & Kuei, 2014). The performance of HL can be improved through the teaching of HL at the university level. As the teaching of HL at university level can lead to research & development, skill and confidence building, career building, information sharing which bring continuity and sustainability in the HL and further increase HL performance.



Research Design and Methodology

For this study, a descriptive methodology has been used to design the course outline and to construct a conceptual model for further empirically investigation. The key purpose of the HL course is to study the HL process to enhance the performance of HL to reduce the suffering of the victims. The course has been designed based on previously published works, input from HOs and professors in the field of logistics and SC. The syllabus offers objectives of the course, method of instructions, general guidelines, reading material, outcomes, rationale, credit hours, examination and grading guideline. In addition, the course is delivered through relevant lectures, presentation and discussion in the classes. Moreover, seminars, site visits, research and assignments are essential. From the analysis of the course contents, a total number of 20 topics were identified. The topics were classified in sixteen weeks, including two weeks for an internship. Furthermore, the focus is also given on different phases and types of disasters. However, the authors only indicated and focused on the humanitarian logistics activities and never indicated the phases and of disaster without humanitarian logistics (*The complete detail of the course contents is in Appendix 1*).

Course development and implementation: the basic course development and implementation tasks include:

- Promotion of course to faculty, students, community, and administration
- Course outline preparation to get review and approval for a new course of the university
- Selection of potential organisation or natural disaster management authority to practically examine and to be briefed students by professionals for the experience to enhance academic capabilities and job-relevant skills
- Board of study persuasion, consents and approval is essential
- The course needs to be approved for both Bachelor of Business Administration (BBA) and Master of Business Administration (MBA)
- Design course in such a way that can maximise value at various levels
- The whole process may take place approximately six months
- The course outlines and syllabus was designed after revising several times by consulting with experts, professionals and professors.

Concluding Discussion

The key objective of HL is to save lives, reduce suffering and lives at dignity, for that HL course is essential, especially at the university level to be thought. The HL course is designed in such a way that students will benefit from active participation in high-impact learning skills. Now the question is for HL which training methods are effective. The method to know effective teaching, one should understand what effective teacher do. The effective teachers have high



expectations for student learning, must be punctual and always keep a good relationship with their students (Hunt, 2009). In other words, effective teaching depends on learning objectives, explanation of new knowledge, attempt to increase students understanding, participation and classroom management, mutual relationship between students and teacher and measurement of students performance (Ahmad et al., 2018; Marzano, 2007). In addition, effective knowledge and skills of HL can be provided through organisational training and direct involvement of the person in the HL activities in the field. It must be noted that the critical role is playing by lecturers or trainers to provide basic knowledge to the people (Ahmad et al., 2018). The effective way is to use public channels such as media seminars or lectures. Through these methods, the related information can be sent to a broader population in a short period if the involvement of the audience is encouraged (Read & Kleiner, 1996). Teaching through lecture is the oldest method which includes examining and also essays writing. The instructors follow a textbook and explain different concepts and tools of the concern subjects and how they can be used. There are face to face interaction and is easy to control class (Ahmad et al., 2018). These activities can provide awareness and understanding of disaster sites to the students. Through these classes and discussion in the university and logistics instructions on site, students become aware and understand the disaster site and can control the situation in the disaster prone area in Pakistan.

The study concludes that teaching of HL at university level is vital for sustainability in the disaster-prone area and HL performance. The study finding indicates that teaching of HL at the university level is supportive of research and development, skill and confidence building, career building and information sharing were strong support for sustainable and continue humanitarian logistics performance enhancement. Finding from the course offer many implications for multiple stakeholders, including participated students, higher education commission, HOs and society as a whole. The study is related to logistics education as it indicates different challenges and issues, and the practitioners can benefit from the course. There are numerous challenges that faculty have to overcome to deliver an effective lecture of the course, i.e. course promotion and getting support from the institution.

Nevertheless, the faculty accepts these challenges happily for the sake to save lives and reduce the suffering of the people in the disaster-prone area. The course has a positive impact on students who participated as it allows grooming in different disciplines and cultures. The course enhances SCM and logistics skill. Nevertheless, several universities are not sure on how to deploy HL programs. This paper presents many steps, challenges and course outlines illustrates herein can help instruct logistics professional and faculty interested in adopting the course in their respective institutions. It is recommended that through the adaptation of the transformational learning process and other theories to extend HL education and research. Through combination theories with logistics and SCM concepts, universities can improve student learning and develop humanitarian response worldwide. The method is good for



sharing knowledge but also has some limitations, including minimal participation of the students, ineffective to develop skills, and some students may not be able to participate in the class actively. Also, the method can be effective depending on the experience, capabilities and knowledge. The limitations can be overcome through practical involvement of the students in the HL activities together with HOs. Through these integrated methods, the student will be able to understand the lecture easily and answer some relevant question during or before the lecture. Finally, this research provides fascinating insights, but it could be extended statistically.

REFERENCES

- Aguilar, P., & Retamal, G. (2009). Protective environments and quality education in humanitarian contexts. *International Journal of Educational Development*, 29(1), 3-16.
- Ahmad, S. Z., Bakar, A. R. A., & Ahmad, N. (2018). An evaluation of teaching methods of entrepreneurship in hospitality and tourism programs. *The International Journal of Management Education*, 16(1), 14-25.
- Ahmed, Z. (2013). Disaster risks and disaster management policies and practices in Pakistan: A critical analysis of Disaster Management Act 2010 of Pakistan. *International Journal of Disaster Risk Reduction*, 4, 15-20.
- Anparasan, A., & Lejeune, M. (2017). Analyzing the response to epidemics: concept of evidence-based Haddon matrix. *Journal of Humanitarian Logistics and Supply Chain Management*, 7(3), 266-283.
- Bealt, J., Fernández Barrera, J. C., & Mansouri, S. A. (2016). Collaborative relationships between logistics service providers and humanitarian organizations during disaster relief operations. *Journal of Humanitarian Logistics and Supply Chain Management*, 6(2), 118-144.
- Bölsche, D., Klumpp, M., & Abidi, H. (2013). Specific competencies in humanitarian logistics education. *Journal of Humanitarian Logistics and Supply Chain Management*, 3(2), 99-128.
- Cheema, A. R., Mehmood, A., & Imran, M. (2016). Learning from the past: analysis of disaster management structures, policies and institutions in Pakistan. *Disaster Prevention and Management*, 25(4), 449-463.
- De Brito, M. P., & Van der Laan, E. A. (2010). Supply chain management and sustainability: Procrastinating integration in mainstream research. *Sustainability*, 2(4), 859-870.
- Dlouhá, J., & Pospíšilová, M. (2018). Education for Sustainable Development Goals in public debate: The importance of participatory research in reflecting and supporting the consultation process in developing a vision for Czech education. *Journal of cleaner production*, 172, 4314-4327.
- Gibb, A. (2005). Towards the entrepreneurial university: entrepreneurship education as a lever for change. *NCGE Policy paper series*, 15, 1-46.
- Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. *American journal of sociology*, 91(3), 481-510.



- Hunt, B. C. (2009). Teacher effectiveness: A review of the international literature and its relevance for improving education in Latin America. *Washington, DC: PREAL Working Paper Series*(43).
- Kabra, G., & Ramesh, A. (2016). Information technology, mutual trust, flexibility, agility, adaptability: Understanding their linkages and impact on humanitarian supply chain management performance. *Risk, Hazards & Crisis in Public Policy*, 7(2), 79-103.
- Karunasena, G., & Amaratunga, D. (2016). Capacity building for post disaster construction and demolition waste management: A case of Sri Lanka. *Disaster Prevention and Management*, 25(2), 137-153.
- Kasturiratne, D., Lean, J., & Phippen, A. (2012). International enterprise education in Sri Lanka: a blended approach. *Education+ Training*, 54(4), 306-318.
- Khan, A. N., & Ali, A. (2015). NGOs and disaster risk reduction in Pakistan *Disaster Risk Reduction Approaches in Pakistan* (pp. 281-294): Springer.
- Khan, M., & Bae, J. H. (2017). The Environmental Perspectives of Apple Fruit Supply Chain Management in Chitral, Northern Pakistan. *International Journal of Supply Chain Management*, 6(4), 1-16.
- Khan, M., Lee, H. Y., & Bae, J. H. (2018). Inward Foreign Direct Investment: A Case Study of Pakistan. *Mediterranean Journal of Social Sciences*, 9(5), 63.
- Khan, M., Lee, H. Y., & Bae, J. H. (2019). The Role of Transparency in Humanitarian Logistics. *Sustainability*, 11(7), 2078.
- Khan, M., Yong, L. H., & Han, B. J. (2019a). Emerging Techniques for Enhancing the Performance of Humanitarian Logistics. *Int. J Sup. Chain. Mgt Vol*, 8(2), 450.
- Khan, M., Yong, L. H., & Han, B. J. (2019b). A Systematic Review of Performance Enhancement of Humanitarian Logistics through Transparency: Current Status and Perspectives. *Int. J Sup. Chain. Mgt Vol*, 8(2), 549.
- Khan, M. A. (2007). Disaster Preparedness for Natural Hazards: Current Status in Pakistan. Kathmandu, Nepal.
- Kreft, S., Eckstein, D., Junghans, L., Kerestan, C., & Hagen, U. (2013). Global climate risk index 2014. *Who suffers most from extreme weather events*, 1Á31.
- Kuhlman, T., & Farrington, J. (2010). What is sustainability? *Sustainability*, 2(11), 3436-3448.
- Lu, Q., Goh, M., & De Souza, R. (2013). Learning mechanisms for humanitarian logistics. *Journal of Humanitarian Logistics and Supply Chain Management*, 3(2), 149-160.



- Maikhuri, R., Nautiyal, A., Jha, N., Rawat, L., Maletha, A., Phondani, P., . . . Bhatt, G. (2017). Socio-ecological vulnerability: Assessment and coping strategy to environmental disaster in Kedarnath valley, Uttarakhand, Indian Himalayan Region. *International Journal of Disaster Risk Reduction*, 25, 111-124.
- Marzano, R. J. (2007). *The art and science of teaching: A comprehensive framework for effective instruction*: Ascd.
- N. Madu, C., & Kuei, C.-H. (2014). Disaster relief supply chain quality management (DRSCQM). *International Journal of Quality & Reliability Management*, 31(9), 1052-1067.
- Natarajarathinam, M., Capar, I., & Narayanan, A. (2009). Managing supply chains in times of crisis: a review of literature and insights. *International journal of physical distribution & logistics management*, 39(7), 535-573.
- Nurmala, N., de Leeuw, S., & Dullaert, W. (2017). Humanitarian–business partnerships in managing humanitarian logistics. *Supply Chain Management: An International Journal*, 22(1), 82-94.
- Nurmala, N., Nurmala, N., de Leeuw, S., de Leeuw, S., Dullaert, W., & Dullaert, W. (2017). Humanitarian–business partnerships in managing humanitarian logistics. *Supply Chain Management: An International Journal*, 22(1), 82-94.
- P. Goffnett, S., Keith Helferich, O., & Buschlen, E. (2013). Integrating service-learning and humanitarian logistics education. *Journal of Humanitarian Logistics and Supply Chain Management*, 3(2), 161-186.
- Raabe, B., Frese, M., & Beehr, T. A. (2007). Action regulation theory and career self-management. *Journal of Vocational Behavior*, 70(2), 297-311.
- Rabta, B., Wankmüller, C., & Reiner, G. (2018). A drone fleet model for last-mile distribution in disaster relief operations. *International Journal of Disaster Risk Reduction*, 28, 107-112.
- Rapado-Castro, M., Pazos, Á., Fañanás, L., Bernardo, M., Ayuso-Mateos, J. L., Leza, J. C., . . . Sanjuán, J. (2015). Building up careers in translational neuroscience and mental health research: Education and training in the Centre for Biomedical Research in Mental Health. *Revista de Psiquiatría y Salud Mental (English Edition)*, 8(2), 65-74.
- Read, C. W., & Kleiner, B. H. (1996). Which training methods are effective? *Management Development Review*, 9(2), 24-29.
- Thomas, A. (2003). Humanitarian logistics: enabling disaster response. *Fritz Institute*, 15.



- Van Wassenhove, L. N. (2006). Humanitarian aid logistics: supply chain management in high gear. *Journal of the Operational research Society*, 57(5), 475-489.
- Vitoriano, B., Ortuño, M. T., Tirado, G., & Montero, J. (2011). A multi-criteria optimization model for humanitarian aid distribution. *Journal of Global Optimization*, 51(2), 189-208.
- Wadhwa, S., Mishra, M., Chan, F. T., & Ducq, Y. (2010). Effects of information transparency and cooperation on supply chain performance: a simulation study. *International Journal of Production Research*, 48(1), 145-166.

Appendix

Week	Topic	Treatment	Practical Work
1	Humanitarian Logistics Terminologies Concepts of HL	Lecture Lecture	Identification of relevant terminologies of HL. Focus should be given to separate HL from business logistics while HSC from business SC.
2	Phases of disasters in term of HL	Lecture	Study of the phases of disaster.
3	Types of disaster in term of HL	Lecture	Study different types of disaster where the application of HL is imperative.
4	Types of organisation involved in HOs activities.	Lecture	Study the role of logistics service providers and humanitarian organisations such as Local community, nonmilitary military organisations governmental and nongovernmental organisations (NGOs), United Nation organisations (UNO), local and international HOs (IHOs), and civil societies. These organisations should be studied in term of logistics as they provide.
5	Findings from previous work of logistics service providers in the disaster-prone area	Discussion	Relationship of HOs and logistics service providers with humanitarian logistics. The discussion will be made as the role played by the humanitarian organisation in the logistics activities.
6	Challenges in Humanitarian Logistics	Lecture	Study the challenges in HL including uncertainty, unpredictability, urgency, timing promising of the donation funds, shortage of funds, spending of available funds in a short time period, donor's behaviours, multiple stakeholders employee turnover, logistics insufficiencies country corruption level and security situation
7	In-kind logistics, cash transfers and local procurement	Lecture	In-kind donations, cash transfers and local procurement in the logistics of caring for victims in the disaster-prone area.
8	Internship	Students & humanitarian organisation	Students will be engaged in different kind of humanitarian logistics activities with humanitarian organisations.
9	The importance of HL	Lecture	Study that in disaster, the central position is occupied by HL, as the participation and cost of logistics account for almost 80% of the total relief operation cost. HL always has lower priority within HOs, despite being a factor that can determine the success or failure of humanitarian operations (Nurmala, Nurmala, et al., 2017).
10	Humanitarian logistics and common phenomenon in the disaster-prone area	Lecture	Study HL operations, looting, snatching, illegal appointments, the influence of local people and the distribution of unfair and low-quality product by relief providers are common phenomena.
11	Unfairness in humanitarian logistics. Fast, fair and safe humanitarian logistics	Lecture	Study logistical unfairness can devastate vulnerable people. Effective HL not only decrease risk, cost and timelines but can also save lives and reduce suffering. Hence, HL must be fast, fair and safe.



12	The role of transparency, accountability & trust in HL	Discussion	How can the performance, efficiency and effectiveness of HL be improved through transparency? Other factors that affect the human suffering of survivors in the aftermath of disasters are the unfair distribution of resources due to a lack of transparency. The discussion will be made based on the paper (M. Khan, Lee, et al., 2019)
13	Cooperation within disaster relief logistics Coordinating requirements and information technology in humanitarian logistics	Lecture	Study of Cooperation and coordination between multiple organisations and logistics service providers such as coordination between military and humanitarian organisation.
14	Managing SC in times of crisis Donations planning and management in the humanitarian logistics	Lecture Discussion	Management during various internal crises such as supplier bankruptcy or loss of key clients is a new, challenging area that requires further investigation (Natarajathinam, Capar, & Narayanan, 2009). Group discussion will be made in the class based on already published research papers.
15	Internship	Student & humanitarian organisation	The student will be given practical training in different HOs of HL activities.
16	Final Term Examine		