

**IBN HALDUN UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF MANAGEMENT**

MASTER THESIS

**THE CONTRIBUTION OF SKILLS OF
HUMANITARIAN LOGISTICS WORKERS TO
LOGISTICS PERFORMANCE IN DISASTER RELIEF**

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**THESIS SUPERVISOR
ASSOC. PROF. ALİ OSMAN KUŞAKCI**

ISTANBUL, 2022

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LOGISTICS PERFORMANCE IN DISASTER RELIEF**

by

HALA M. A. AGHA

**A thesis submitted to the School of Graduate Studies in partial
fulfillment of the requirements for the degree of Master of Arts in
Management**

**THESIS SUPERVISOR
ASSOC. PROF. ALİ OSMAN KUŞAKCI**

ISTANBUL, 2022

APPROVAL PAGE

This is to certify that we have read this thesis and that, in our opinion, it is fully adequate, in scope and quality, as a thesis for the degree of Master of Arts in Management.

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ACADEMIC HONESTY ATTESTATION

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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Signature:



ÖZ

AFET YARDIMINDA İNSANİ LOJİSTİK ÇALIŞANLARININ BECERİLERİNİN
LOJİSTİK PERFORMANSINA KATKISI

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Belirsizlik ve hızlı değişimlerin olduğu bir dünyada artan sayıda doğal ve insan kaynaklı afetlerin yaşanmasıyla birlikte, insani yardım lojistiği alanı son zamanlarda araştırmacıların ilgisini çekmiştir. İnsani yardım kuruluşları yöneticilerinin, iş gereksinimlerini belirlemeleri, doğru insan sermayesini bulmaları ve çalışanların gelişimine katkıda bulunan gerekli becerileri tespit etmeleri için lojistik becerilerin incelemesi çok önemlidir. Bu çalışmanın amacı, Türkiye'de afet yardım operasyonlarında görev alan insani lojistikçiler açısından hangi lojistik becerilerin insani lojistik performansı için en önemli beceriler olarak algılandığını araştırmaktır. Ayrıca bu çalışma, genel yönetim ve fonksiyonel lojistik becerilerinin insani lojistikçinin performansı açısından algılanan önemi ile lojistikçilerin demografik değişkenleri arasında bir ilişki olup olmadığını test etmeyi amaçlamaktadır. Bu amaca ulaşmak için Türkiye'deki farklı insani yardım kuruluşlarında afet yardım operasyonlarında görev alan insani lojistikçilere bir anket dağıtılmıştır. Toplamda 230 kişilik bir örneklem toplanmıştır. Verilerin analizinde SPSS v.25 yardımıyla betimsel istatistikler, bağımsız örneklem t-testi, tek yönlü ANOVA ve Post Hoc testleri kullanılmıştır. Çalışma, Türkiye'deki çeşitli insani yardım kuruluşlarında afet yardım operasyonlarında çalışan insani lojistikçiler tarafından algılanan fonksiyonel lojistik becerilerinin öneminin, çalışanların iş tecrübesine göre önemli ölçüde değiştiğini ortaya koymaktadır. Ayrıca sonuçlar, Türkiye'deki insani lojistikçiler tarafından

algılanan genel yönetim becerilerinin öneminin, farklı iş pozisyonları ve farklı organizasyonel faaliyet yerleri açısından önemli ölçüde değiştiğini göstermektedir.

Anahtar Kelimeler: Afet Yardımı, İnsani Lojistik, Lojistik Becerileri, Lojistik Performansı.



ABSTRACT

THE CONTRIBUTION OF SKILLS OF HUMANITARIAN LOGISTICS WORKERS TO LOGISTICS PERFORMANCE IN DISASTER RELIEF

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With the growing number of natural and man-made disasters happening in a world of uncertainty and rapid changes, the area of humanitarian logistics has recently received interest from researchers. It is crucial for humanitarian organizations to study logistics skills to help managers identify job requirements accordingly and find the right human capital, and be aware of the most relevant skills that contribute to the development of logistics performance. The purpose of this study is to reveal the most important skills for humanitarian logistics performance from the point of view of humanitarian logisticians who are engaged in the disaster relief operations in Türkiye. Additionally, this study aims at testing whether there is a relationship between the perceived importance of general management and functional logistics skills and some demographic variables. To achieve this aim, a self-administered questionnaire is distributed to humanitarian logisticians who are engaged in disaster relief operations in different humanitarian organizations in Türkiye. A sample of 230 responses was collected. With the help of SPSS 25, descriptive statistics, independent-samples t-test, one-way ANOVA, and Post Hoc tests are used to analyze the data. The study finds that the importance of the functional logistics skills perceived by humanitarian logisticians working in disaster relief operations in several humanitarian organizations in Türkiye varies significantly across different years of work experience. Moreover, the results indicate that the importance of the general

management skills perceived by humanitarian logisticians varies significantly in terms of the international character of duties and among different job positions.

Keywords: Disaster Relief, Humanitarian Logistics, Logistics Performance, Logistics Skills.



DEDICATION

To my Family,

To each and every soul and stone in the Great Gaza,

To the Lady of Earth, my Homeland, Palestine.



ACKNOWLEDGEMENT

I would like to extend my deepest gratitude to my soulmates, my Mom and Dad, for their endless support and unconditional love. Completing this work would not have been possible without them believing in me and standing by my side. I also wish to thank my adorable siblings for always bringing joy and happiness to my heart and putting a smile on my face. I would also like to thank my supervisor, Prof. Ali Osman KUŞAKCI, for enlightening my academic way through his continuous academic support and invaluable guidance. Thanks should also go to all respondents who took the time to participate in this research.



Hala Agha

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LIST OF SYMBOLS AND ABBREVIATIONS

NGOs	Non-Governmental Organizations
SCOR	Supply chain operations reference
UNISDR	United Agency Inter-Agency Secretariat of the International Strategy for Disaster Reduction
AFAD	The Republic of Türkiye Disaster and Emergency Management Presidency (Turkish: Afet ve Acil Durum Yönetimi Başkanlığı)



CHAPTER I

INTRODUCTION

This chapter starts by giving an overview of humanitarian logistics and the skill sets required in logistics. The main objectives of the study and the research problem will be discussed. Following this, the significance of this study will be clarified. Finally, the researcher explains how the paper is organized and what is included in each chapter.

1.1. Background of the Study

Thomas & Kopczak (2005) stated that based on a survey conducted by a group of humanitarian logisticians in Fritz Institute, a non-profit organization based in San Francisco that is specialized in providing solutions and aid for vulnerable people in the field of humanitarian logistics and disaster relief, Humanitarian Logistics is defined as

the process of planning, implementing and controlling the efficient, cost-effective flow and storage of goods and materials, as well as related information, from the point of origin to the point of consumption for the purpose of alleviating the suffering of vulnerable people. The function encompasses a range of activities, including preparedness, planning, procurement, transport, warehousing, tracking and tracing, and customs clearance.

Oloruntoba and Gray (2006) state that humanitarian logistics is described as agile and different from commercial supply chains regarding rapid disaster response and predicting the unknown. Balcik and Beamon (2008) address some challenges that occur in humanitarian logistics during disaster relief. Firstly, there is unpredictability in demand for this aid in terms of its amount, timing, and place. Secondly, the demand for aid in disasters takes place suddenly in large amounts within a short limited time. Finally, humanitarian logistics suffer from a shortage of resources such as employees, supplies, transportation, money, and technology.

Many researchers emphasize the importance of studying the skills and competencies of logistics in the field of logistics (e.g., Gammelgaard and Larson, 2001; Hannon, 2004; Mangan and Christopher, 2005). There has been a negotiation in the logistics skills literature about the distinction between functional logistics skills and general management skills. Some researchers state that different job levels and positions in logistics require different skill sets (e.g., Carter et al., 2006). Mangan and Christopher (2005) stress that this difference in logistics skills needs to bring a balance between the functional logistics skills and the interpersonal skills of a logistician.

In this study, the researcher is examining whether there is a relationship between the perceived importance of the general management and functional logistics skills and demographic variables such as age, gender, work experience, job position, organization, and international character of duties.

1.2. Objectives of the Study

The objectives of the study are:

1. To reveal the logistics skills that are perceived to be the most important skills for humanitarian logistics performance from the point of view of humanitarian logisticians who are engaged in the disaster relief operations in Türkiye.
2. To test whether there is a relationship between the perceived importance of sets of general management and functional logistics skills and demographic variables such as age, gender, work experience, job position, organization, and the international character of duties.

1.3. Significance of the Study

There is a vast body of literature on logistics skills and logistics performance in the humanitarian context; however there has not yet been a study testing the influence of some demographic variables on the perceived importance of general managerial and functional logistics skills. This research is vital for the humanitarian organizations in Türkiye to understand the most important logistics skills logisticians need to possess in the humanitarian logistics field and prepare training programs accordingly.

Contrary to the previous studies, this study discusses the perceived importance of logistics skills from the perspective of not only logisticians in the fieldwork but also logistics managers in the headquarters. Additionally, the research establishes the linkages with the demographic factors of the respondents in a way that includes other demographic variables not only limited to the logistician's gender as a factor being mostly highlighted in previous studies. It is intended that this research will serve the aid agencies in Türkiye and contribute to effective recruitment in the humanitarian organizations that are engaged in disaster relief operations in Türkiye.

1.4. Organization of the Study

This thesis consists of five chapters, and each chapter has headlines as follows. The first chapter gives a closer look at humanitarian logistics as an introduction to the coming topic as discussed at the beginning. The second chapter reviews the theoretical development of humanitarian logistics and disaster management, including humanitarian logistics definition, the main complexities in humanitarian logistics, what differentiates logistics in business from logistics in the humanitarian context, the theoretical development of the T-shaped logistics skills model, and humanitarian logistics performance. Furthermore, it discusses the types of disasters and phases of disaster relief. The third chapter presents the research methodology by explaining the research design, data collection method used, data collection process, the sample of interest and sample size, sampling technique, the research instrument's validity and reliability, research question and research hypotheses, data analysis methods, and the ethical concerns regarding the data collection. The fourth chapter runs the required data analysis, interprets the results, and discusses the findings. The fifth and last chapter concludes the study, highlights the limitations of the research, and touches upon further recommendations for future studies in the area.

CHAPTER II

LITERATURE REVIEW

The literature review is divided into two sections. The first section is about humanitarian logistics. This section explains the differences between humanitarian logistics and commercial logistics, key challenges in humanitarian logistics, T-shaped logistics skills models, and logistics performance in the humanitarian context. The second section is about disaster relief. In this section, the types of disasters and phases of disaster relief are explained.

2.1. Humanitarian logistics

2.1.1. Logistics

Overstreet et al. (2011) state that Logistics can be defined as the process of planning, implementing, and controlling the flow and storage of goods, services, and information from the point of inception to the point of consumption efficiently and effectively to satisfy customers' needs.

2.1.2. Elements of Logistics

Overstreet et al. (2011) point out that there are six main elements of logistics and they are: planning and procedures, infrastructure, information technology, transportation, inventory, and organization's personnel. These elements are adopted as a method to improve future research in the area of humanitarian logistics (Overstreet et al., 2011).

Overstreet et al. (2011) state that the element of planning and procedures is the most studied in this area. However, the Organisation's Personnel is the least studied element by researchers, and they identified this element in humanitarian logistics as a future research area (see Figure 2.1). Thus, this study focuses on studying this element by

addressing the skills required for the organization's personnel to be humanitarian logisticians, how these skill sets contribute to the logistics performance and how they might affect the recruiting and deploying decisions of the organization toward these humanitarian logisticians.

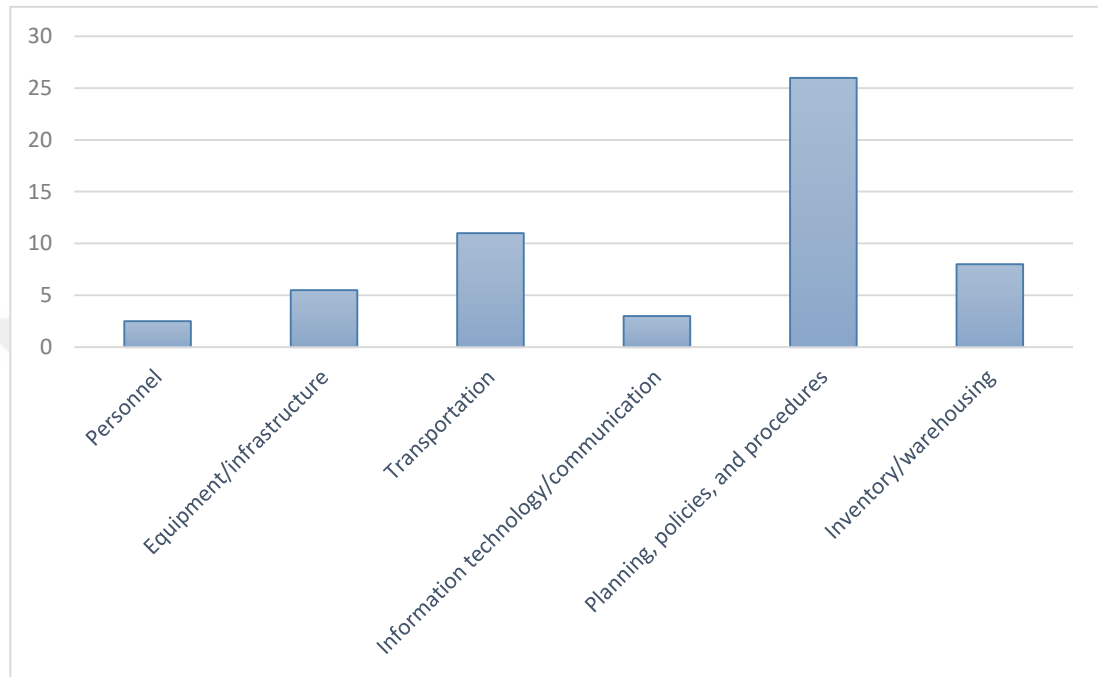


Figure 2.1. Humanitarian Logistics Elements (Overstreet et al., 2011)

2.1.3. Differences Between Humanitarian Logistics and Commercial Logistics

Several researchers address the differences between humanitarian logistics and business logistics and describe the main challenges and complexities faced in humanitarian logistics (e.g., Thomas and Kopczak, 2005; Van Wassenhove, 2006; Oloruntoba and Gray, 2006; Balcik and Beamon, 2008; Kovács & Spens, 2009; Overstreet et al., 2011).

Kovács & Spens (2009) stated that what differentiates humanitarian logistics from business supply chains is that humanitarian logistics is rapid to react to the disorders following a disaster where it operates in different types of disasters at different disaster phases and different environments. Balcik and Beamon (2008) describe the key characteristics of humanitarian logistics and argue the differences between

humanitarian and commercial logistics. They state that these characteristics bring challenges and complexities into the field of humanitarian logistics.

2.1.4. Challenges in Humanitarian Logistics

Balcik and Beamon (2008) address some challenges that humanitarian logisticians face in disaster relief. Balcik and Beamon (2008) state that there are complexities related to supply procurement in the disaster response phase. The acquisition and distribution of sufficient aid supplies is costly in time and money. Therefore, many aid agencies get involved in preparatory activities that reinforce their logistics potential in responding to disasters and develop their abilities to deliver sufficient aid in a limited time. This makes it expensive and sometimes over the financial budget for some relief organizations.

Many humanitarian organizations apply a strategy of prepositioning aid supplies in strategic locations in the world so that it enhances their abilities to deliver adequate aid supplies within a short limited time. However, this prepositioning strategy can be expensive for the organization or over the budget in some cases. Beamon and Kotleba (2006) point out that only a few organizations can bear the expense of having international distribution centers for storing and distributing aid supplies. A global prepositioning system was supported by World Vision International (WVI) in 2000. Under this system, aid supplies are prepositioned in four centers worldwide (Germany, Italy, the US, and Dubai). The system is supported by prepackaged modules, which ease the shipment of these supplies anywhere in the world (Beamon and Kotleba, 2006).

Adinolfi et al. (2005) explain the challenges NGOs encounter in the disaster relief field. Many NGOs perceive stockpiles as expensive and complex. They tend to depend on procurement from local and international channels, which take more time and make the organizations slow in their response to meeting the needs of people in such emergencies. The uncertainty in the relief environment results in an insufficient and ineffective response incurred from high costs, duplicating efforts, and wasting time and resources.

Overstreet et al. (2011) list the complexities logisticians face in humanitarian logistics. These challenges are associated with unknowns, time, trained logisticians, media and funding, equipment and information technology, and interference.

Unknowns: Overstreet et al. (2011) describe humanitarian relief as an obscure environment, a place full of unknowns related to the time, place, and seriousness of the disaster.

Time: A timely response to disasters and timely delivery of relief supplies is one of the challenges humanitarian organizations encounter. While a delay in business logistics may result in losses of property, customer satisfaction, or the organization's reputation, a delay in humanitarian response can cause a loss of thousands of lives, especially for those most affected by the disaster (Overstreet et al. 2011).

Trained logisticians: Overstreet et al. (2011) include competent personnel under the complexities of humanitarian logistics. Chikolo (2006) states that humanitarian organizations suffer from a scarcity of qualified logisticians who can plan, organize and implement relief operations. Retaining these experienced logisticians is a significant challenge for humanitarian organizations. Thomas and Fritz (2006) emphasize that the employee turnover rate can reach up to 80% in the field of humanitarian aid due to uncertainty and lack of clarity in employees' career paths.

The Media and Funding: The power of media plays a crucial role in how donors and civil society organizations will react to a disaster. What makes media one of the complexities in humanitarian logistics is that the attention disasters gain from the community is mainly based on media coverage (Overstreet et al., 2011). Some disasters do not receive any media attention and thus remain marginalized regardless of the severity of the disaster. Katoch (2006) states that the photos shot as media material during a disaster can put pressure on governments, donors, and humanitarian organizations. Overstreet et al. (2011) state that the disasters that are covered more in the media tend to gain more attention, funding, and donations. Moeller (2006) gives an example of the discrepancy in how different disasters worldwide receive different media coverage and attention as to the case of the well-publicized tsunami of 2005 compared with the less-publicized disasters in Türkiye and Africa.

Equipment and Information Technology: People prefer to donate directly to the ones affected by the disaster, and they are usually unaware of the importance of giving donations for the sake of improving a humanitarian organization's equipment and inventory systems. This is what makes humanitarian organizations rarely receive funding for equipment and information technology (Overstreet et al., 2011). Chikolo (2006) stresses that humanitarian organizations suffer from the lack of an effective information system that can detect and store data about the time and cost of the response, the effectiveness of suppliers, and the convenience of the goods being delivered.

Interference: Transparency in delivering relief supplies is a sensitive issue coming under the complexities of humanitarian logistics. Some may dishonestly interfere in the distribution of relief supplies which results in deceiving the donors by not delivering the aid supplies to the right target (McLachlin et al., 2009).

2.1.5. The Skill Sets Required in Logistics

The topic of logistics skills has been addressed in research from different aspects. On the one hand, some address it from a managerial aspect focusing on the critical skill sets required for an employee to be a good logistician (e.g., Kovács et al., 2012), and others studied the difference between logisticians' skills and supply chain managers' skills (e.g., Gammelgaard and Larson, 2001; Hannon, 2004; Mangan and Christopher, 2005). On the other hand, some address the topic from an educational aspect and focus on the importance of these logistics skills in educational programs by collecting the logistics skills and preparing a list of the essential logistics skills that need to be addressed (e.g., Tracey and Smith Doerflein, 2001; Mangan et al., 2001; Dinwoodie, 2001).

These studies resulted in issuing logistics certificates and new logistics educational programs such as logistics masters programs. In addition to that, some studies address logistics skills from a correlational aspect by investigating the linkage between logistics skills and logistics performance (Kovács and Tatham, 2010). And the relations between logistics skills, logistician gender attributes, and logistics performance (Kovács and Tatham, 2010b; Tatham and Kovács, 2010).

2.1.6. The Theoretical Development of the T-Shaped Logistics Skills Model

A T-shaped skills model is a concept used in job hiring to present the capabilities of people and show the required skills in an area. The T-shaped model generally consists of two bars where the vertical bar refers to the deep expertise a person is specialized in, and the horizontal bar refers to the broad knowledge this person has across different disciplines. The T-shaped model has been used in logistics literature to describe the key skills required for logisticians. Studies such as van Hoek et al. (2002), Mangan and Christopher (2005), Dischinger et al. (2006), and Murphy and Poist (2007) present logistics skills in a T-shaped model consisting of three areas.

Thomas and Mizushima (2005) state that there is a lack of training and education programs related to logistics skills needed in humanitarian logistics and emphasize the importance of organizing such programs in the field. The majority of researchers in logistics skills literature agree with Mangan and Christopher's (2005) views on how a good logistician needs to possess both general management skills and other logistics and supply chain management related skills. Mangan and Christopher (2005) focus on the skills required in logistics and supply chain management and stress the importance of technical logistics skills regarding the operations of logistics. The logistics skills in Mangan and Christopher's T-shaped model are presented in three areas as general management skills, functional logistics skills, and problem-solving and people management skills (see Figure 2.2).

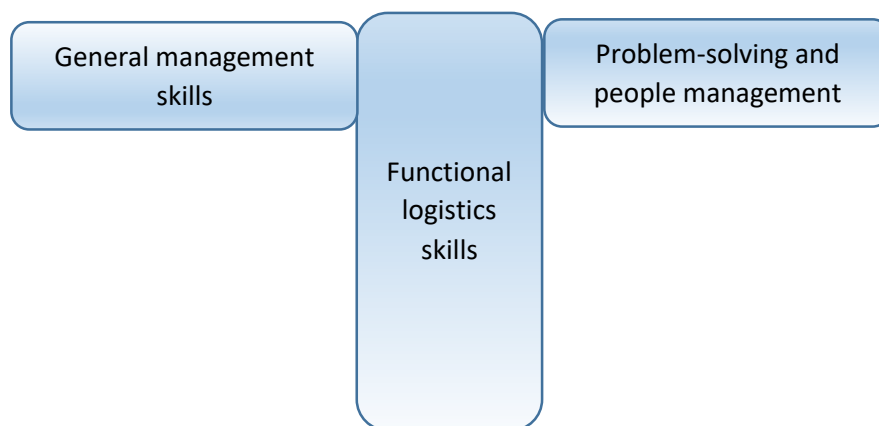


Figure 2.2. The Modified Mangan & Christopher's (2005) T-shaped Skills Model (Kovács & Tatham, 2010)

Van Hoek et al. (2002) suggest that a logistician needs to combine both skills related to logistics expertise and skills related to personal relations with people and problem-solving. Van Hoek et al. (2002) argue that logistics competency-based skills are perceived as market qualifiers, not market winners. They stress that logistics knowledge and expertise play a partial factor in the skills required for a logistician, and alone can not be sufficient for a logistician, but needs to be tied up with other social and interpersonal skills. Their study surprisingly concludes that general managerial skills along with functional logistics skills are less important than interpersonal skills in the T-shaped model. Their findings go in contrast to what Mangan and Christopher (2005) suggest. However, Murphy and Poist (2007) go in line with the study of van Hoek et al. (2002), suggesting that logisticians need to have other skills besides the skills related to abstract logistics competency.

2.1.7. Humanitarian Logistics Skills and Logistics Performance

The essential studies on logistics skills and logistics performance in humanitarian logistics refer to the logistics skills model of Tatham and Kovács (2009), a model consisting of four skill sets including 33 skills. Their model is modified from Mangan and Christopher's (2005) model. The model of Tatham and Kovács (2009) lists the logistics skills required in logistics in four areas as general management skills, functional logistics skills, problem-solving skills, and interpersonal skills (see Table 2.1). Tatham and Kovács (2009) divide Mangan and Christopher's (2005) one component of problem-solving and people management into two separate components as problem-solving skills and interpersonal skills.

Table 2.1. Logistics Skill Sets (Tatham & Kovács, 2009)

General Management Skills	Functional Logistics Skills	Problem Solving Skills	Interpersonal Skills
Finance and Accounting	Legal	Problem Identification	Listening
Information Technology	Customs, Import, and Export	Information Gathering	Oral Communication
Change Management	Transport Management	Problem Analysis	Written Communication

Table 2.1. (cont.)

Marketing	Inventory Management	Information Sharing	People Management
Project Management	Warehousing	Problem Solving	Meeting Facilitation
Strategic Management	Purchasing & Procurement		Negotiation
Customer Relationship Management	Forecasting		Stress Management
Supplier Relationship Management	Reverse Logistics		Human Resource Management
Risk Management	Port/Airport Management		Leadership
	Logistics Information Systems		

Tatham and Kovács (2009) tested the importance of logistics skills to logistics performance in different fields such as humanitarian, academic, military, and business logistics. Tatham and Kovács (2009) found that all logistics skills in the T-shaped model are important. However, the importance of these logistics skills to logistics performance differs according to the context in which the skills are required. According to their findings, problem-solving and interpersonal skills show greater importance in terms of performance than managerial and functional logistics skills in the humanitarian context, unlike in business, military, and academic contexts. They state the reason behind this is that the humanitarian logisticians who responded to the survey are polarised in their opinions while evaluating as opposed to the other respondents from the other fields of academic, business, and military logistics. Tatham & Kovács (2009) stress that humanitarian logisticians evaluated the functional skills as more relevant to logistics performance than general managerial skills.

Tatham and Kovács's (2009) study is followed by Tatham et al.'s (2010) model, which is modified from Mangan and Christopher's (2005) and Tatham and Kovács's (2009). Tatham et al. (2010) contribute to humanitarian logistics by developing a model aligned with the relief context and humanitarian organizations' environment by adding

new skills under the component “additional skills” that are concerned with humanitarian logistics and emergency relief. Their study states that a business-based logistics skills model can not be directly applied in humanitarian relief under a disaster assistance context. Organizations concerned with this field should pay attention to the skills a humanitarian logistician needs to have to fit into emergency management. Tatham et al. (2010) present the humanitarian logistics skills in five skill sets, consisting of 48 skills, general management skills, functional logistics skills, problem-solving skills, interpersonal skills, and additional skills (see Table 2.2).

Table 2.2. A Framework for Logistics Skill Sets (Tatham et al., 2010)

General Management Skills	Functional Logistics Skills	Problem Solving Skills	Interpersonal Skills	Additional Skills
Finance and Accounting (inc Budget Mgmt)	Legal	Problem Identification	Listening	Reporting
Management of Information Technology	Customs, Import, and Export	Information Gathering	Oral Communication	Emergency Preparedness
Change Management	Transport Management	Problem Analysis	Written Communication	Training of Others
Marketing	Inventory & Asset Management	Information Sharing	People (& line) Management	Fleet Management
Project Management	Warehousing	Problem Solving	Meeting Facilitation	Liaison with Others
Strategic Management	Purchasing & Procurement		Negotiation	Design and Implementation of policies, procedures and standards
Customer Relationship Management	Forecasting		Personal Stress Management	Security management
Supplier Relationship Management	Reverse Logistics		Human Resource Management (e.g., Recruiting)	Mechanics and maintenance

Table 2.2. (cont.)

Risk Management	Port/Airport Management		Leadership	Team player
	Logistics Information Systems			Ability to work independently
				IS literacy
				Premises Management
				Working Under Pressure/In a Harsh Environment
				Knowledge of Donor Regulations
				Ethical Conduct

Tatham et al. (2010) studied the logistics skills required in humanitarian logistics by analyzing the recent job advertisements and their job requirements to know the skills and qualifications that are considered to be important from the viewpoint of the hiring relief organizations when recruitment. Tatham et al.'s (2010) findings go in line with Tatham and Kovács (2009) that some general management skills, such as change management and marketing skills, are less present in the humanitarian field. The same goes for some functional logistics skills such as reverse logistics and port/airport management.

According to Tatham et al. (2010), job advertisements showed that the most required skills in humanitarian logistics are the ones under interpersonal skills as oral communication, written communication, human resources management skills, and other skills related to the humanitarian context as security management skills, reporting skills, training of others, design and implementation of policies, procedures, and standards, and knowledge of donors' regulations. Tatham et al. (2010) state that there are some skills that logisticians need to improve before joining the humanitarian aid field, such as security management skills, especially for the logisticians dealing with the field of severe disasters and emergencies. Tatham et al. (2010) conclude that

humanitarian logistics is a combination of both administrative skills and interpersonal social skills.

Kovács and Tatham (2010) note that general management skills and functional logistics skills do not receive the same level of importance in terms of logistics performance. Mangan and Christopher (2005) find that the required logistics skill sets need to compromise both management skills and supply chain-related skills. Murphy and Poist's (1994) survey finds that managers in the logistics field consider themselves managers first and logisticians second. According to their survey, management skills, which are related to social skills and interpersonal skills, weigh high importance than any other skill set. Mangan et al. (2001) find that logistics managers perceive human resources management skills, including communication skills, problem-solving, and people management skills, as the most important skills in their current jobs. This proves Murphy and Poist's (1994) finding that logistics managers have a self-perception of being managers in the first level and logisticians in the second level.

Tatham et al. (2010) point out that the skill of emergency preparedness is less introduced in the job advertisements they analyzed. The authors state that the reason behind this is that this skill still does not receive much attention from aid agencies as an important skill in job requirements and/or because there is an absence of funding for these activities and/or because these job advertisements target logisticians who will be dealing with ongoing emergencies. This makes aid agencies focus more on security management skill when they announce such advertisements.

Tatham et al. (2010) consider the skill of liaison with others as a new attribute that affects humanitarian logistics performance explaining that some humanitarian organizations have added coordination skills in their job requirements as an important skill that affects the success of the aid operations where this skill shows the ability of logisticians to cooperate with other organizations and work with other parties. Additionally, there is an emphasis on the importance of fleet management skills in the area of humanitarian logistics besides transportation management.

Kovács et al.'s (2012) model is a modified model built on the previous models of Mangan and Christopher (2005) and Tatham et al. (2010). What distinguishes Kovács

et al. (2012) are additional skills in the humanitarian field, where the model focuses on identifying the skills required for humanitarian logisticians in the humanitarian logistics context, unlike other studies (Gammelgaard and Larson, 2001; van Hoek et al., 2002; Mangan and Christopher, 2005) which present the skills required in the commercial logistics and supply chain management context. Building on the previous skills models of Tatham & Kovács (2009) and Tatham et al. (2010), Kovács et al.'s (2012) model introduced logistics skills needed in humanitarian logistics under five skill sets that include a total of 49 skills. The key skills of the model consist of general management skills, functional logistics skills, problem-solving and personality traits, interpersonal skills, and skills for the humanitarian context.

Kovács et al.'s (2012) "skills for the humanitarian context" component refers to the "additional skills" in the model of Tatham et al. (2010). This skill set, in both models, refers to sub-skills specifically concerned with the humanitarian perspective in logistics. Some modifications have occurred in Tatham et al.'s (2010) skills model by Kovács et al. (2012). Two skill items, human resources skills, and personal stress management, have been excluded from the "interpersonal skills" component of Tatham et al. (2010), and according to Kovács et al. (2012), they belong under other skill sets. While the "human resources skills (e.g., recruiting)" item comes under the "interpersonal skills" component in Tatham et al.'s (2010) model, the "human resources skills" item is presented under the "general management skills" component in Kovács et al. (2012).

According to Kovács et al. (2012), the item of personal stress management is classified as a problem-solving and personality trait capability. However, stress management comes under the interpersonal skills in the Tatham et al. (2010) model. Looking at these two models, all four skill sets have been presented differently except for the functional logistics skills group. Kovács et al.'s (2012) "skills for the humanitarian context" is equivalent to Tatham et al.'s (2010) "Additional skills" with a slight difference in the sub-items under these sets. Kovács et al. (2012) include two new skills, autonomy (ability to work independently) and facility management, under the "humanitarian context" skills (see Figure 2.3).

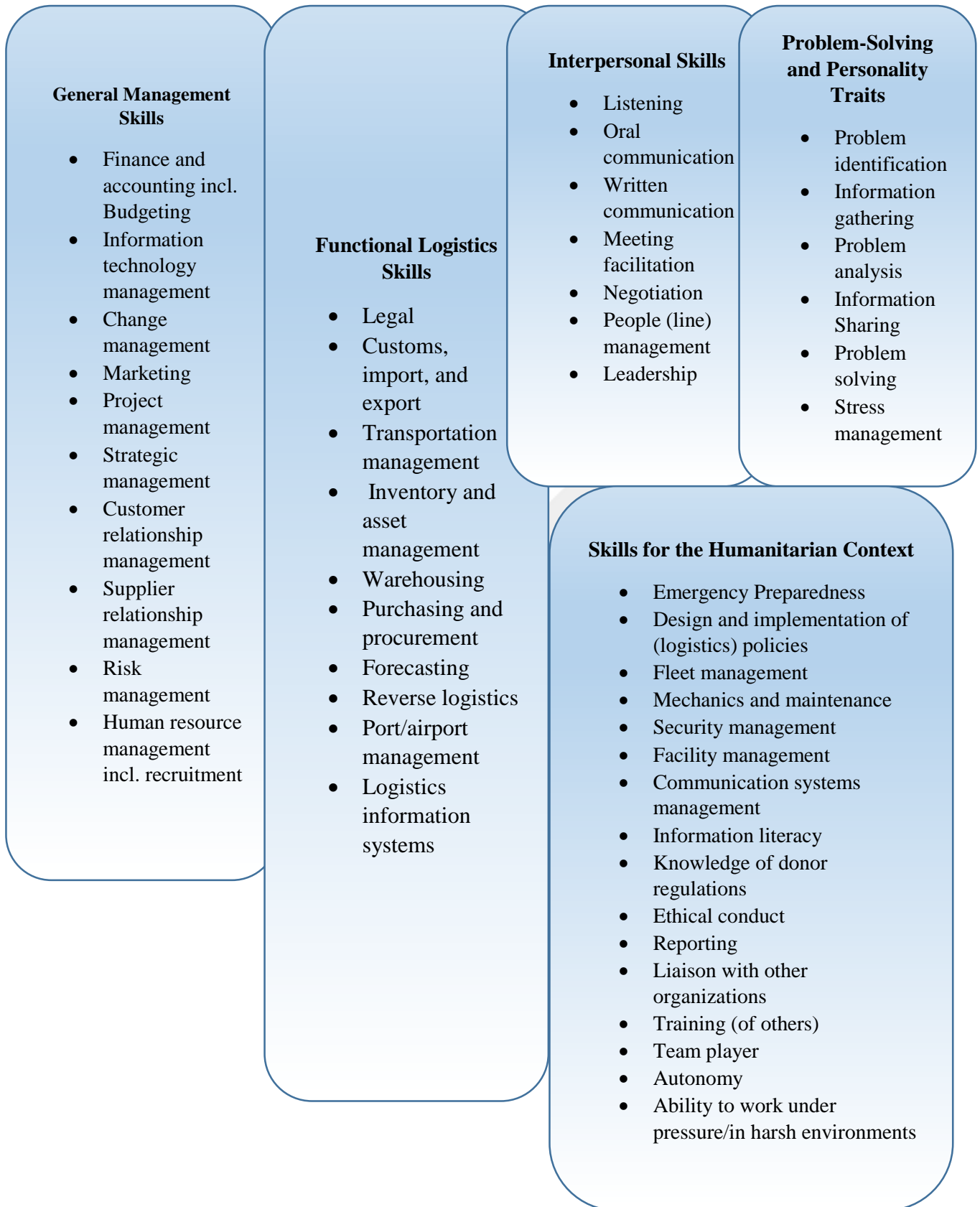


Figure 2.3. A Profile of Skill Sets for Humanitarian Logisticians (Kovács et al., 2012)

Kovács et al. (2012) stated that skills in logistics and supply chain management are not only required in commercial supply chains but also in other fields of logistics like medical care logistics, military logistics, and humanitarian logistics. According to the humanitarian logistics job advertisements observed by Kovács et al. (2012), the most emphasized skills in humanitarian logistics are functional logistics skills, unlike commercial logistics, where the most highlighted skills are general managerial skills (Mangan et al., 2001).

Humanitarian logistics job advertisements require humanitarian logisticians to have a deep knowledge of the following functional logistics skills like transportation management, purchasing and procurement, and inventory management more than the broad knowledge of general management skills, which are more related to commercial logistics (Kovács et al., 2012). This finding of the stress on functional logistics skills goes in line with Kovács and Tatham's (2010) findings that humanitarian logistics focus mostly on functional logistics skills. This might be related to logisticians' different perceptions of the word logistics, or because of the common view among logisticians that the logistics field is in need of technical logistics skills related to logistics knowledge and deep expertise.

While transportation management, purchasing and procurement, and inventory management ranked as the highest skills in job advertisements, customer service and marketing ranked the lowest. Kovács et al. (2012) state that beneficiaries of humanitarian aid are not perceived as customers, and their purchasing power is absent, so customer relationship management ranked a low score and is replaced with the relationship with donors in the humanitarian context, namely as knowledge of donor regulations. Besides the high importance of functional logistics skills, the skills of fleet management and training of others achieved high ranks in the humanitarian logistics job advertisements. Kovács et al. (2012) suggest that humanitarian organizations need to provide training programs to teach logisticians how to train others due to the high emphasis on the skill of training of others. Stress management skill ranked a low score among the other skills. The authors interpret this by stating that it is very distinct that working in the humanitarian aid field indicates working in a stressful environment thus stress management skill is not mentioned in the job advertisements by these humanitarian organizations (Kovács et al., 2012).

2.1.8. Logistics Performance

Studies address humanitarian logistics performance from different perspectives and link it with some variables. Some study humanitarian logistics performance by connecting humanitarian logistics skills and logisticians' gender attributes with logistics performance (e.g., Tatham and Kovács, 2010). Others investigate the effect of logisticians' gender on performance (e.g., Kovács and Tatham, 2009). Furthermore, some address humanitarian logistics performance by studying the impact of logisticians' skills on logistics performance (e.g., Kovács and Tatham, 2010). Humanitarian logistics performance has been discussed from different perspectives and has been linked with different variables. There is little body of literature on analyzing the relation between logistics skills and logistics performance in the humanitarian field.

2.1.8.1. Logistics Performance Measures

There is a rich body of literature on logistics performance in the context of the for-profit logistics sector. The center of attention of logistics performance in literature is about the measurements of effectiveness and efficiency. Each of the following studies addresses logistics performance from a different perspective and evaluates it by a different measure. Morgan (2004), Daugherty et al. (1994), and Beamon (1999) focus on the measurement of logistics performance from the perspective of assessing product quality, timely distribution, customer service, and time efficiencies related to timely delivery, turnover measurements such as asset turnovers, and financial measurements such as return on working capital, return on supply chain fixed assets, and cash to cash cycle times. Caplice and Sheffi (1994) study logistics performance from the perspective of cost efficiencies related to productivity and resource allocation. Morgan (2007) addresses logistics performance from the customer aspect and timely distribution service. Töyli et al. (2008) focus on financial flows in logistics performance. Beamon and Balcik (2008) emphasize the importance of the financial metric in the humanitarian logistics field from where humanitarian organizations can understand their financial capacity and stability.

2.1.8.2. Supply Chain Performance Measures

Stewart (1997) addresses the measurements of supply chain performance and focuses on the product development process. Stewart (1997) also refers to the Supply Chain Operations Reference model (SCOR), a reference model designed by the supply chain council as a measurement tool to improve supply chain management. Zimmermann (2006) states that the SCOR model presents different metrics of performance consisting of 150 indicators measuring performance. The SCOR model contains performance metrics such as order fulfillment cycle time, upside and downside supply chain adaptability, and cost of goods sold.

Tatham and Kovács (2010) state that there is a differentiation between supply chain performance measurement models and logistics performance models regarding interior and exterior performance indicators. Researchers address the metrics of logistics performance from internal and external aspects. Measures of performance in logistics literature have been explained as inputs and outputs varying according to the performance attribute. Beamon and Balcik (2008) state that input-oriented measures represent operational efficiency and output-oriented measures represent operational effectiveness. Beamon and Balcik (2008) point out that the output-oriented measures in humanitarian logistics refer to aid effectiveness. Caplice and Sheffi (1994) refer to the output-oriented measures as external metrics where these metrics include customer, shareholder, and organizational metrics.

2.1.8.3. Differentiation Between Logistics Performance and Humanitarian Logistics Performance Measures

According to Beamon and Balcik (2008), what differentiates humanitarian logistics performance measurements from logistics performance measurements is that the external metrics of logistics performance in the humanitarian context contain donor metrics. While performance attributes include supply chain reliability, supply chain flexibility, and supply chain responsiveness in the supply chain performance-related SCOR model, humanitarian logistics performance attributes contain additional ones such as accountability and transparency of the humanitarian activities. One of the hardest dimensions to be measured in humanitarian logistics performance is the

effectiveness due to the ambiguity in the item that needs to be measured and not knowing the exact item of whether it is the organizational effectiveness, operational effectiveness, or effectiveness of humanitarian aid (Kovács and Tatham, 2010).

Kovács and Tatham (2009) state that there is a lack of literature on logistics performance in the humanitarian context from the aspect of studying the measurements of humanitarian logistics performance. Kovács and Tatham (2010) emphasize that the most crucial performance attributes that need to be measured are accountability and transparency of humanitarian activities. When relating internal and external measures of logistics performance to logistics skills, Tatham and Kovács (2010) indicate that there are measures that are considered both a performance attribute and a logistics skill, such as customer service. Studies (Wouters and Wilderom, 2008) have shown that logistics skill sets can be related to logistics performance. And this is what makes it essential to test the T-shaped logistics skill sets model in terms of performance to determine the skills that are mostly related to logistics performance and its improvement.

2.2. Disaster Relief

2.2.1. Disaster Definition

The United Agency Inter-Agency Secretariat of the International Strategy for Disaster Reduction UNISDR (2004) defines the term disaster as: “A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources.” According to UNISDR (2004), for a situation to be defined as a disaster, two standards must be fit, the government should declare a state of emergency and call for international aid to facilitate the response to this disaster, and for the international humanitarian organizations to go for action.

2.2.2. Types of Disasters

Humanitarian logistics act toward different types of disasters. Van Wassenhove (2006) categorizes disasters as natural and man-made disasters as well as sudden-onset and

slow-onset disasters. Sudden-onset natural disasters involve earthquakes, hurricanes, and the like. Famine is an example of a slow-onset natural disaster. While terrorist attacks and coups are classified as sudden-onset man-made disasters, a refugee crisis is classified as a slow-onset man-made disaster (see Table 2.3).

Table 2.3. Categorization of Disasters (Van Wassenhove, 2006)

	Natural	Man-made
Sudden-onset	Earthquake Hurricane Tornadoes	Terrorist Attack Coup d'Etat Chemical leak
Slow-onset	Famine Drought Poverty	Political Crisis Refugee Crisis

Humanitarian logistics plays an essential role in managing disaster relief operations. Trunick (2005) states that 80% of the activities in disaster relief refer to logistics. Thomas (2003) states that the effectiveness of the disaster response phase depends on the speed of logisticians in purchasing, distributing, and delivering aid supplies. Kovács and Spens (2007) stress that the aid provided to beneficiaries differs according to disaster types. Aid varies in nature depending on under what circumstances this disaster, catastrophe, or crisis occurs. For example, the provided aid in natural disasters such as earthquakes, hurricanes, and floods is different than the aid provided for refugee camps, for the development of an area, and during a famine (Kovács and Spens, 2007).

What differentiates a disaster from an emergency is the elements involved in the situation. A natural disaster is caused by an event that happens as a naturally destroying incident. However, an emergency tends to be more comprehensive than a disaster in terms of the elements it includes. Complex emergencies involve different types of natural and man-made disasters simultaneously. For example, an emergency that involves a natural disaster along with a man-made element like an armed conflict is considered a complex emergency (Kovács and Spens, 2009).

2.2.3. Phases of Disaster Relief

Literature on disaster presents disaster relief operations in different phases. Cottril (2002) discusses the stages of disaster management as planning, mitigation, detection, response, and recovery. Lee and Zbinden (2003) explain the steps of preparing for disasters, during disasters, and post-disasters. Each disaster phase goes through different operations that vary from one phase to another. Kovács and Spens (2007) discuss three phases of disaster relief; the phase of “preparation” of what comes before a disaster, the “immediate response phase” in which a prompt reaction occurs after a disaster, and the “reconstruction phase” of the aftereffects of a disaster (see Figure 2.4). Kovács and Spens (2007) state that each phase of disaster relief requires specific skills and resources that differ from phase to phase.



Figure 2.4. Phases of Disaster Relief (Kovács and Spens, 2007)

2.2.3.1. Disaster Preparedness

The impact of the disaster varies according to the geographical location of the affected area. The stages of disaster management differ from one place to another depending on the area’s distance from the cause of the disaster. In the stage of preparing for a disaster, precautions are taken to avoid the disaster as possible. For example, Nisha de Silva (2001) states that in some regions, some natural disasters like avalanches can be avoided by providing training on the evacuation process beforehand. Precautions in this stage can also be taken to reduce the impacts of such disasters. For example, to prepare well in the case of hurricanes, Longo (2005) suggests that power suppliers can replace energy wires and connections beneath the ground to decrease the possibility of electricity outage. However, humanitarian organizations tend to ignore directing donations for planning and training programs since donors donate for the sake of sending their money to the directly affected people (Murray, 2005).

Chaikin (2003) states that the phase of preparation and planning is the phase that gets the least attention from aid agencies and international organizations while dealing with a disaster. However, the literature on disaster relief phases shows many studies focus on the preparation phase of disaster relief. Some information and technology systems have been invented as emergency simulation tools to see what might happen during an emergency, how to prevent that in advance, and how to respond to it, as Barbarosoğlu et al. (2002) and Özdamar et al. (2004) developed models for transportation-related problems. Other systems were designed for the decision-making process, creating disaster scenarios, and checking their effectiveness (Nisha de Silva, 2001).

Nisha de Silva (2001) focuses on the preparedness stage by studying evacuation plans before a disaster occurs. Kovács and Spens (2007) emphasize the importance of logistics in providing support in the three phases of disaster relief, starting from identifying the plans and taking the measures to prevent a disaster to an immediate response to a disaster by providing sanitation and food supplies, to taking part in the recovery and reconstruction stages. Thomas (2003) describes logistics as a link between the preparation for a disaster and the response phase.

Humanitarian organizations must have good relationships with their suppliers so that aid supplies are always available to them in times of disaster (Kovács and Spens, 2007). Aid agencies are urged to bring the most frequently needed materials in disasters and store them in their warehouses to go for an immediate response in the case of a disaster. These supplies include water, medications, and sheets (Dignan, 2005). Long (1997) and Nisha de Silva (2001) stress that an effective information technology system plays a crucial role in achieving disaster relief operations successfully.

During the disaster preparation stage, bringing the actors of humanitarian aid consisting of humanitarian organizations, logistics providers, governments, and international NGOs all together is one of the challenges in disaster relief operations due to the different strategies each of these actors adopts when acting toward disaster relief (Long and Wood, 1995). This might result in disruption in the last mile delivery. To avoid such trouble during the preparation phase, Kaatrud et al. (2003) recommend

humanitarian organizations build collaboration networks among each other and the other actors to facilitate the phases of disaster management.

2.2.3.2. Disaster Response

Responding to a disaster comes immediately when a disaster strikes. In this stage, the pre-planned measures and precautions regarding a disaster are put into practice. Providing aid during this phase makes it challenging for logisticians when they act in a damaged infrastructure and transport disruption (Murray, 2005). According to Kovács and Spens (2007), less developed areas are more exposed to damage in terms of infrastructure. These areas tend to suffer from inappropriate construction that can not tolerate the harsh conditions of a natural disaster environment. The challenges humanitarian logistics encounter while responding to a disaster are working under an atmosphere of uncertainties and dealing with the unknowns regarding the time, location of disasters, and struggling with a lack of supplies, transportation, and information (Overstreet et al., 2011; Tomasini and van Wassenhove, 2004). During the response phase, Murray (2005) criticizes humanitarian organizations in the field for not managing coordination among the other humanitarian work actors after a disaster strikes.

There are some key challenges faced during the response stage. Özdamar et al. (2004) discuss the difference between military and humanitarian logistics in terms of their distribution centers. The authors argue that military logistics own one main central coordination center where all activities are managed from. However, humanitarian organizations deal with different distribution centers during a disaster. Long (1997) supports the decentralization in distribution where operations are not limited to only one central location so that aid supplies can reach the afflicted people as fast as possible in different parts of the affected area.

Long and Wood (1995) state that aid agencies suffer from the lack of information on the specific needs of the people impacted by a disaster. Özdamar et al. (2004) discuss the challenges that aid agencies face during the disaster response phase, such as lack of coordination in providing the aid supplies, the uncertainty of demand amount and time, and difficulties related to transport in the last mile delivery.

Logisticians consider language and cultural differences as complexities faced in the response phase. Aid agencies are urged to have cultural awareness while evaluating the demand and preparing the supplies for the victims. Murray (2005) refers to the challenges that aid supplies encounter when responding to a disaster. Donors send damaged or undesirable donations, such as expired food supplies or blankets and clothes not convenient for hot regions, which makes it complicated for the organizations to distribute these supplies to the victims.

Murray (2005) suggests that aid agencies can overcome supply coordinating-related problems by asking for help from local distributors and retailers since they can quickly access the disaster location. When destruction in infrastructure occurs during a disaster, Wichmann (1999) points out that humanitarian airdrops can be taken as a way to deliver the required supplies to the affected people.

2.2.3.3. Post-Disaster Reconstruction

The disaster response phase is followed by the reconstruction phase. In the reconstruction stage, aid providers start aiding the affected people by a disaster. Most aid agencies' relief operations in this phase focus on short-term reconstruction ignoring the part of long-term reconstruction (Kovács and Spens, 2007). Kovács and Spens (2007) explain the three phases of the disaster relief operations carried out by World Vision. The first phase is providing aid for 2000 beneficiaries for a week. The second phase includes sending aid to 5000 beneficiaries for 30 days.

Finally, the third phase covers a long-term reconstruction and recovery for 90 days. It involves activities such as fixing ruined houses and building new ones for the affected households, as in the case of the El Salvador earthquake. What makes the reconstruction phase important is that disasters have effects that might continue as long-term effects on both the struck area and the organizations' way of managing. Thomas (2003) suggests that humanitarian organizations need to consider the reconstruction and recovery activities in their planning by including the lessons learned from the latest disaster.

2.3. Humanitarian Organizations in Türkiye

2.3.1. The Turkish Red Crescent

The Turkish Red Crescent was founded in 1868 in the Ottoman Empire, and it was re-established in 1935 in Ankara, Türkiye. The Turkish Red Crescent is a member of the International Federation of Red Cross and Red Crescent. Since the organization's establishment, the Turkish Red Crescent started its activities by providing medical aid to injured soldiers during wars in which Türkiye was involved. Through its transportation services, hospitals, and medical centers, the organization provides medical care and humanitarian aid in 137 countries. Relief in the disaster management field is provided in 78 countries (Kızılay, 2022). Furthermore, the organization provides services for immigrants and refugees, organizes blood donation campaigns, and delivers aid to needy people of nourishment and shelter. It also operates in education and youth empowerment (Red Crescent, 2022).

2.3.2. The Republic of Türkiye Disaster and Emergency Management Presidency (AFAD)

The Republic of Türkiye Disaster and Emergency Management Presidency (Turkish: Afet ve Acil Durum Yönetimi Başkanlığı, also shortened as AFAD) was established in 2009. AFAD is considered the most giant wing for disaster management and addressing risks under the Ministry of Interior in Türkiye. It provides training programs under the framework of disaster management. Disaster and Emergency Management Presidency (2022) states that there are 3 million people who have received AFAD's disaster training program for the year 2021.

Each year Türkiye encounters at least one earthquake of 5 magnitudes. In this regard, AFAD aims to minimize the destruction following a disaster. AFAD predicts the emergence of natural disasters such as earthquakes, and takes the required precautions in advance. AFAD has recently started an intensive training program for disaster management that reaches the students at primary schools on how to react in the phases of disaster preparedness and disaster response. AFAD owns 81 branches around the

country, and offers services of research and rescue by 11 units (Disaster and Emergency Management Presidency, 2022).

2.3.3. The IHH Humanitarian Relief Foundation

The IHH Humanitarian Relief Foundation was established in 1995 in Türkiye in the field of humanitarian aid as well as emergency and disaster relief. The foundation is currently active in more than 123 countries. IHH targets in its humanitarian relief refugees, the afflicted people by wars and natural disasters, the areas of conflict, wars, hunger, and poverty. IHH is widely active in different regions of Asia, Africa, and the Balkans. IHH is considered the first NGO in Türkiye that provides humanitarian aid to over 135 countries, including areas under occupation (IHH Humanitarian Relief Foundation, 2022). The recent income statement of IHH for the year 2021 shows that the total operating expenses are \$71.694.358. The foundation spent \$3.660.453 for activities in the educational field and \$4.742.709 for the health sector. Cultural expenditures were \$819.681, and \$59.076.490 were reported as social expenditures (IHH, 2022).

2.3.4. The Cansuyu Charity and Solidarity Association

The Cansuyu Charity and Solidarity Association was founded in 2005 as a non-profit organization aiming to achieve the meaning of solidarity and collaboration in society. The association works on eliminating post-disaster damages, meeting basic human needs, and delivering aid to victims of wars, famines, and poverty. Moreover, the association offers shelters to the homeless and oppressed people and supports the orphans. The Cansuyu association is active in building water wells in the areas that suffer from lack of water. Over the past 16 years, the association has successfully opened 3849 water wells in 25 countries.

2.3.5. The Deniz Feneri Association

The Deniz Feneri (*Lighthouse*) Association was founded in 1998 after the release of a Turkish TV show with the same name in 1996 that was broadcast for receiving aid from volunteers and then delivering them to families in need in the form of shelter,

food packages, clothing, and cash assistance. The Deniz Feneri association contributed to the establishment of houses and guesthouses for the homeless, building aid clothing stores, and organizing training programs. During the past 24 years, the association has been successfully able to deliver aid to 4 million people in Türkiye and around the world and receive assistance from 1 million volunteers.

2.3.6. Türkiye Diyanet Foundation

Türkiye Diyanet Foundation is a civil society organization that was established in 1975 for the sake of bringing peace and serving humanity. One of the main pillars of the foundation is charity and donations for all the needy and oppressed people regardless of their race, religion, color, ethnicity or other status. Türkiye Diyanet Foundation operates at the local and international levels in disaster mitigation. The foundation offers humanitarian aid, including food aid packages, to areas affected by natural and man-made disasters (Türkiye Diyanet Foundation, 2022).

CHAPTER III

METHODOLOGY & APPLICATION

This chapter presents the research design used to meet the study's objective. It also presents the data collection method and explains the data collection process. Moreover, the sample of interest, sampling technique, the research instrument's validity, and reliability are introduced. It then mentions the research question and draws the research hypotheses. Furthermore, data analysis methods and the ethical concerns regarding the data collection are highlighted.

3.1. Research Design

Kumar (2011) describes the research design as the plan of how the study is structured and completed to help the researcher obtain accurate and valid answers. Research design is concerned with determining the way of collecting the data, the technique of choosing the respondents, the method followed to analyze the data collected, and the way of interpreting the findings of a study (Kumar, 2011).

This study applies a quantitative research method and a survey of close-ended questions to obtain responses. To meet the study's objectives, a cross-sectional study design is followed. A cross-sectional research design is used to collect responses from the sample during a single point in time (Leary, 2001). According to Kumar (2011), the cross-sectional study design is suitable for studies aiming at capturing a cross-section of the population and the time of conducting a survey at a one-time point. Kumar (2011) stresses the advantages of the cross-sectional study as being considered a cheap design of collecting data, comparing it with the other research designs, since the researcher establishes only one contact with the respondents. This research design was found appropriate since this study aims to evaluate the perceived importance of

the logistics skills' for their logistics performance during a specific shot of time during the same period for the respondents.

3.2. Data Collection Method

According to Orodho (2009), the data collection method is the instrument applied to gather data regarding specific variables in research. In this study, the data collection method is a self-administered questionnaire consisting of close-ended questions. The questionnaire was written in English and Turkish to reach the largest number of humanitarian logisticians in humanitarian organizations in Türkiye. The questionnaire consists of two sections with 26 items (see Appendix A). The first section contains six items related to demographic variables such as age, gender, work experience, job position, organization, and international character of duties.



Figure 3.1. Sets of General Management and Functional Logistics Skills (Kovács et al., 2012)

The second section was modified and adapted from Kovács & Tatham (2010). This section of 20 items, each representing a skill from the model, asks humanitarian logisticians to evaluate the importance of different sets of logistics skills, in terms of logistics performance, in the humanitarian context on a 5-point Likert scale from (1) not important at all to extremely important (5). In this study, the skills of interest that are under research are general management skills and functional logistics skills taken from the logistics skills model of Kovács et al. (2012) (see Figure 3.1).

3.3. Data Collection Process

According to Sekaran (2003), a questionnaire is an easy data collection method that takes a shorter time and less cost during the data collection process. Collecting the data started with preparing the survey online and then sending it to different headquarters of humanitarian organizations in Türkiye that deal with disaster relief. Besides that, sending the survey to specific contacts of employees working in the fieldwork in these organizations, and if necessary, going to the headquarters and make one to one interview with the target group and ask them to fill the survey.

Some difficulties in reaching the sample group occurred while collecting the data. The survey targets humanitarian logisticians who are active in disaster relief operations. Due to the nature of work in such humanitarian organizations, employees in such fields work under unstable conditions and unpredictability of events with an intensive schedule. They can barely check their inboxes for all the coming emails to fill a survey. Others were concerned about the term “humanitarian logistics” and “humanitarian logisticians” as new terms, which made them hesitant to take part in the survey. This made the researcher visit the headquarters of all the organizations that later participated in the survey to build a direct connection with the responsible departments there and provide a clear explanation about the questionnaire and the intended objectives of the study.

3.4. The Sample of the Study

3.4.1. The Sample of Interest

The sample in this study covers the humanitarian logisticians engaged in disaster relief operations in several humanitarian organizations and aid agencies in Türkiye. A total of 230 responses were collected from the target group. Table 3.1 displays the humanitarian organizations from which the data is collected.

Table 3.1. The Participating Humanitarian Organizations in the Survey

The Turkish Red Crescent
The Republic of Türkiye Disaster and Emergency Management Presidency (Turkish: Afet ve Acil Durum Yönetimi Başkanlığı, also shortened as AFAD)
The IHH Humanitarian Relief Foundation
The Cansuyu Charity and Solidarity Association
The Deniz Feneri Association
Türkiye Diyanet Foundation

3.4.2. The Sampling Technique

The Snowball sampling technique is when the researcher sends the questionnaire to the target group and asks the respondents to forward it to other potential participants who meet the same criteria. The snowball sampling technique is convenient when it is hard to reach the target group (Etikan et al., 2016). Following the snowball sampling technique, the data collection process was carried out. The questionnaire was distributed via direct email from the researcher to the target humanitarian organizations asking them to fill it out and forward it to their employees. Besides that, the researcher visited the headquarters and the relevant representatives of each organization and distributed a hard copy of the survey to the responsible departments to ask for assistance during the data collection process. After the responsible parties have participated in the survey, they forwarded the email to their employees, who are most likely potential participants in the survey, via an internal communication channel.

3.5. The Validity and Reliability of The Data Collection Instrument

3.5.1. Instrument's Validity

3.5.1.1. Content Validity

Content validity indicates the extent to which each item of the measurement tool evaluates the same content and represents all the aspects of the construct of interest (Rubio, Berg-Weger, Tebb, Lee, and Rauch, 2003). Rubio et al. (2003) classify the types of content validity to face validity and logical validity. Logical validity assures that the measure is valid by conducting a more strict procedure. One way of testing logical validity is having a panel of experts assess the content validity of the measure of interest.

In this study, the researcher evaluates the content validity of the measure by assessing the logical validity of the measure. The measure had been scrutinized well before it was distributed. In the present study, the logical validity is achieved by consulting a panel of experts, including this study's supervisor, the directors at the headquarters of the target humanitarian organizations, and the managers in the research academies of these organizations. By consulting with the supervisor, some corrections were made to the questionnaire. While sending the survey link to the humanitarian organizations, some changes to the questionnaire were made as suggested by the experts in the field who work at these organizations.

In addition, in this study, the measurement scale of the perceived importance of different sets of logistics skills in terms of job performance was tested, developed, and validated by Kovács & Tatham (2010). The desired sets of skills under research are general management skills and functional logistics skills. Different sets of general management skills and functional logistics skills, each containing a list of skills combined under the same component, were developed in a T-shaped logistics skills model and validated by Kovács et al. (2012).

3.5.2. Instrument's Reliability

Reliability refers to the extent to which the items of a measure are related. One way to assess the reliability of an instrument is by calculating Cronbach's alpha. Cronbach's alpha measures the internal consistency among the items of the measure that are in a Likert scale type (Christmann and Van Aelst, 2006).

Cronbach's alpha ranges from 0 to 1. According to Taber (2017), for an accepted reliable survey instrument, Cronbach's alpha must be > 0.70 . Other studies like (Ursachi, Horodnic, and Zait, 2015) state that an alpha value of $0.60 - 0.70$ is acceptable. When Cronbach's alpha is ≥ 0.90 , this indicates a strong value with a high level of reliability. A Cronbach's alpha value of ≥ 0.80 is considered a very good level of reliability. However, when Cronbach's alpha value is < 0.60 , this indicates low reliability. A Cronbach's alpha value of ≤ 0.50 is considered to be not satisfactory.

In this study, the reliability test was done by computing the reliability analysis of Cronbach's alpha in SPSS 25. As illustrated in table 3.2, Cronbach's alpha for the 20 items that measure the perceived importance of the sets of logistics skills is equal to 0.809, which indicates a very good level of reliability and a high inter-item consistency among the items used in this questionnaire.

Table 3.2. Reliability Analysis for the Perceived Importance of the Skills Scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.809	.813	20

3.6. Research Question and Hypotheses

3.6.1. Humanitarian Logistic Skills and Demographic Variables

Is there any relationship between the perceived importance of general management and functional logistics skills and demographic variables such as age, gender, work experience, job position, organization, and international character of duties?

To answer the research question, the following alternative hypotheses have been developed:

H₁: On average, logisticians' perceptions of the importance of general management skills for their performance with respect to age, gender, work experience, job position, organization, and international character of duties are not equal.

H₂: On average, logisticians' perceptions of the importance of functional logistics skills for their performance with respect to age, gender, work experience, job position, organization, and international character of duties are not equal.

3.6.1.1. The Relationship Between the Perceived Importance of General Management Skills and Demographic Variables

The hypotheses H_{1a}, H_{1b}, H_{1c}, H_{1d}, and H_{1e}, H_{1f} are assumed as follows:

H_{1a}: On average, logisticians' perceptions of the importance of general management skills for their performance vary significantly with respect to age (i.e., different age intervals).

$$H_{1a}: \mu_{A1} \neq \mu_{A2} \neq \mu_{A3} \neq \mu_{A4}$$

where: μ_{A1} , μ_{A2} , μ_{A3} , and μ_{A4} refer to the importance of management skills perceived by logisticians in different age intervals, respectively: 20-24 years, 25-35 years, 36-45 years, and 45+ years.

H_{1b}: On average, logisticians' perceptions of the importance of general management skills for their performance vary significantly with respect to gender (i.e., Male / Female).

$$H_{1b}: \mu_M \neq \mu_F$$

where μ_M is the importance of management skills perceived by males and μ_F is the importance of logistics skills perceived by females.

H_{1c}: On average, logisticians' perceptions of the importance of general management skills for their performance vary significantly with respect to work experience (i.e., in years).

$$H_{1c}: \mu_{E1} \neq \mu_{E2} \neq \mu_{E3} \neq \mu_{E4}$$

where μ_{E1} , μ_{E2} , μ_{E3} , and μ_{E4} refer to the importance of management skills perceived by logisticians who have different work experience years, respectively: 1-3 years, 4-6 years, 7-10 years, and ≥ 11 years.

H_{1d}: On average, logisticians' perceptions of the importance of the general management skills for their performance vary significantly with respect to job positions (i.e., logisticians in the fieldwork or logistics managers in the headquarters).

$$H_{1d}: \mu_W \neq \mu_H$$

where: μ_W is the importance of management skills perceived by logisticians in the fieldwork, and μ_H is the importance of logistics skills perceived by logistics managers in the headquarters.

H_{1e}: On average, the perceptions of the importance of general management skills for their performance vary significantly with respect to the organization the logistician works for (i.e., Turkish Red Crescent, an international NGO, or a local foundation)

$$H_{1e}: \mu_{O1} \neq \mu_{O2} \neq \mu_{O3} \neq \mu_{O4} \neq \mu_{O5} \neq \mu_{O6}$$

where μ_{O1} , μ_{O2} , μ_{O3} , μ_{O4} , μ_{O5} , and μ_{O6} refer to the importance of management skills perceived by logisticians working in different organizations: Turkish Red Crescent, The Republic of Türkiye Disaster and Emergency Management Presidency (Turkish: AFAD), IHH Foundation, the Cansuyu Charity and Solidarity Association, Türkiye Diyanet Foundation, and the Deniz Feneri Association.

H_{1f}: On average, logisticians' perceptions of the importance of general management skills for their performance vary significantly with respect to the international character of duties (i.e., International level or local level)

$$H_{1f}: \mu_N \neq \mu_L$$

where μ_N is the importance of management skills perceived by logisticians working at the international level, and μ_L is the importance of logistics skills perceived by logisticians involved at the local level.

3.6.1.2. The Relationship Between the Perceived Importance of Functional Logistics Skills and Demographic Variables

The hypotheses H_{2a} , H_{2b} , H_{2c} , H_{2d} , and H_{2e} , H_{2f} are assumed as follows:

H_{2a}: On average, logisticians' perceptions of the importance of functional logistics skills for their performance vary significantly with respect to age (i.e., different age intervals).

$$H_{2a}: \mu_{G1} \neq \mu_{G2} \neq \mu_{G3} \neq \mu_{G4}$$

where μ_{G1} , μ_{G2} , μ_{G3} , and μ_{G4} refer to the importance of functional logistics skills perceived by logisticians in different age intervals, respectively: 20-24 years, 25-35 years, 36-45 years, and 45+ years.

H_{2b}: On average, logisticians' perceptions of the importance of functional logistics skills for their performance vary significantly with respect to gender (i.e., Male/Female).

$$H_{2b}: \mu_X \neq \mu_Y$$

where μ_X is the importance of functional logistics skills perceived by males and μ_Y is the importance of logistics skills perceived by females.

H_{2c}: On average, logisticians' perceptions of the importance of functional logistics skills for their performance vary significantly with respect to work experience (i.e., in years).

$$H_{2c}: \mu_{Z1} \neq \mu_{Z2} \neq \mu_{Z3} \neq \mu_{Z4}$$

where μ_{Z1} , μ_{Z2} , μ_{Z3} , and μ_{Z4} refer to the importance of functional logistics skills perceived by logisticians who have different work experience years, respectively: 1-3 years, 4-6 years, 7-10 years, and ≥ 11 years.

H_{2a}: On average, logisticians' perceptions of the importance of functional logistics skills for their performance vary significantly with respect to job positions (i.e., logisticians in the fieldwork or logistics managers in the headquarters).

$$H_{2d}: \mu_R \neq \mu_K$$

where μ_R is the importance of functional logistics skills perceived by logisticians in the fieldwork and μ_K is the importance of logistics skills perceived by logistics managers in the headquarters.

H_{2e}: On average, the perceptions of the importance of functional logistics skills for their performance vary significantly with respect to the organization the logistician works for (i.e., Turkish Red Crescent, an international NGO, or a local foundation)

$$H_{2e}: \mu_{U1} \neq \mu_{U2} \neq \mu_{U3} \neq \mu_{U4} \neq \mu_{U5} \neq \mu_{U6}$$

where μ_{U1} , μ_{U2} , μ_{U3} , μ_{U4} , μ_{U5} and refer to the importance of functional logistics skills perceived by logisticians working in different organizations: Turkish Red Crescent, The Republic of Türkiye Disaster and Emergency Management Presidency (Turkish: AFAD), IHH Foundation, the Cansuyu Charity and Solidarity Association, Türkiye Diyanet Foundation, and the Deniz Feneri Association.

H_{2f}: On average, logisticians' perceptions of the importance of functional logistics skills for their performance vary significantly with respect to the international character of duties (i.e., International level or local level)

$$H_{2f}: \mu_I \neq \mu_T$$

where μ_I is the importance of functional logistics skills perceived by logisticians working at the international level and μ_T is the importance of logistics skills perceived by logisticians involved at the local level.

3.7. Data Analysis Methods

Data analysis was conducted with the help of SPSS 25. Descriptive statistics, the independent-samples t-test, and one-way ANOVA test were used to analyze the data. Descriptive statistics were used to analyze the demographic variables. The independent-samples t-test and one-way ANOVA test were used to test the hypotheses. When testing the hypotheses by one-way ANOVA, a post hoc test will be conducted if there is a significant difference across different groups.

One-way ANOVA is used when the relationship that will be tested has only one independent variable (Kim, 2017). In the present study, a one-way ANOVA test was used to test the hypotheses H_{1a} , H_{2a} , H_{1c} , H_{2c} , H_{1e} , and H_{2e} since age, work experience, and organization are variables with more than two groups. The independent-samples t-test was used to test the hypotheses H_{1b} , H_{2b} , H_{1d} , H_{2d} , H_{1f} , and H_{2f} since gender, job position, and international character of duties have only two values. The proposed research model used in this study is presented in Figure 3.2.

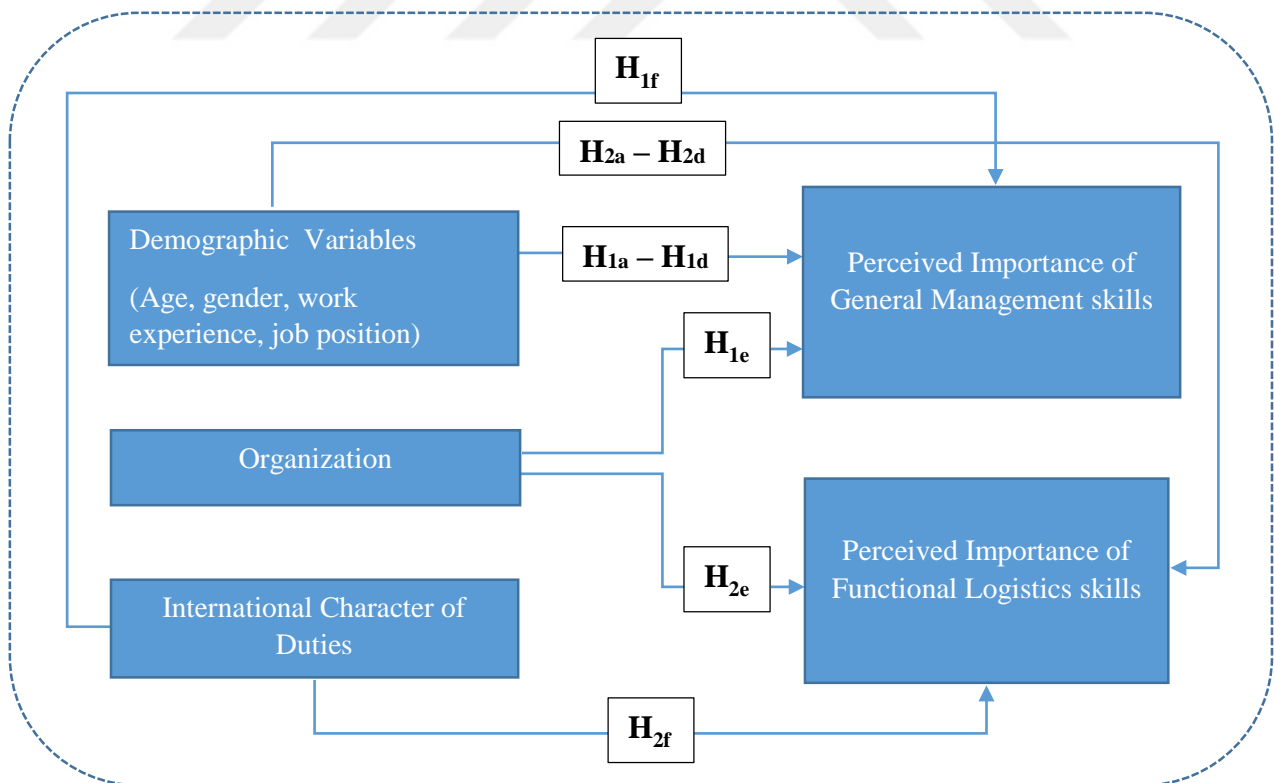


Figure 3.2. The Research Model Developed for This Study

3.8. Ethical Concerns

Before proceeding to the survey questions, a short introductory paragraph of instructions was provided on the upper page of the survey in which participants were informed about the aim of the study. The researcher clearly stated to the participants that the received data would be kept confidential and only be used for an academic purpose within the requirements of a graduate program. No personal information has been obtained, but for the sake of completing the study, some demographic factors were required, such as age, gender, work experience, job position, organization, and international character of duties.

In addition, the researcher dismissed the option of collecting the IP addresses of the participants, and no line was asked about the participant's name, email address, or any other personal information. The identity of participants remained anonymous, and the participants took part in the survey voluntarily at their complete freedom without any force. It was undoubtedly assured that no harm could follow their participation.

It was stated that a copy of the final manuscript of the study would be sent to the participating organizations upon their requests to ensure that the data obtained led to an academic outcome. Moreover, the researcher affirmed that the analysis is being held accurately and ethically away from manipulation. The researcher asserted that the hypotheses are being drawn before running any analysis to prevent any bias or personal interest.

Following the ethical consideration guidelines of the university, the researcher contacted the authors of Kovács & Tatham's (2010) T-shaped skills model to ask for their permission to adapt a part of their data collection instrument. As a result, the researcher received the authors' approval for using their survey tool. The relevant correspondence has been saved in records and submitted to the Social and Human Sciences Scientific Research and Publication Ethics Committee of the university.

CHAPTER IV

FINDINGS & DISCUSSION

This chapter covers the main findings and highlights the related discussion by interpreting and reporting the results. The chapter begins with an overview of the descriptive statistics of the independent demographic variables. It then aims to test the hypotheses that have been developed in the methodology chapter by using the appropriate tests. To test the relationship between the perceived importance of the general management and functional logistics skills and demographic variables such as age, gender, work experience, job position, organization, and international character of duties, the independent-samples t-test, one-way ANOVA test, and a post hoc test of Hochberg's GT2 are used each with the related hypothesis.

4.1. Descriptive Statistics of Respondents

A total of 230 responses were collected from humanitarian logisticians in 6 humanitarian organizations engaged in disaster relief in Türkiye. Table 4.1 displays the demographic characteristics of respondents. 103 (44.8%) of the respondents are aged between 36-45 years, 60 (23.1%) of them are aged between 25-35 years, 45 (19.6%) are older than 45 years, and 22 (9.6%) of them are aged between 20-24 years old. While there are 128 (55.7%) male humanitarian logisticians participating in the survey, 102 (44.3%) of the respondents are females. Additionally, 97 (42.2%) of the respondents have a long working experience of 7-10 years, 57 (24.8%) of them have 11 years or more of work experience, 51 (22.2%) of them have 4-6 years of work experience, and 25 (10.9%) of them have a work experience of 1-3 years. While 130 (56.5%) of respondents are logisticians in the fieldwork, 100 (43.5%) are logistics managers in the headquarters.

Humanitarian logisticians come from different humanitarian organizations engaged in disaster relief in Türkiye. 61 (26.5%) work at the IHH Humanitarian Relief

Foundation. 41 (17.8%) of the respondents work for the Turkish Red Crescent, 41 (17.8%) work for Türkiye Diyanet Foundation, 41 (17.8%) work at the Cansuyu Association, 32 (13.9%) work at the Deniz Feneri Association, and 14 (6.1%) of the participating logisticians work at AFAD, the Republic of Türkiye Disaster and Emergency Management Presidency. The respondents cover their organizational activities related to disaster relief at different levels. 131 (57.0%) of them cover their operations at the local level, and 99 (43.0%) work at the international level.

Table 4.1. Demographic Characteristics of Sample

Age	> 45	Count	45
		Row Valid N %	100.0%
	20-24	Count	22
		Row Valid N %	100.0%
	25-35	Count	60
		Row Valid N %	100.0%
	36-45	Count	103
		Row Valid N %	100.0%
Gender	Female	Count	102
		Row Valid N %	100.0%
	Male	Count	128
		Row Valid N %	100.0%
Organization_Type	AFAD	Count	14
		Row Valid N %	100.0%
	Cansuyu	Count	41
		Row Valid N %	100.0%
	Deniz Feneri	Count	32
		Row Valid N %	100.0%
	İHH	Count	61
		Row Valid N %	100.0%
	Turkish Red Crescent	Count	41
		Row Valid N %	100.0%
	Türkiye Diyanet Vakfi	Count	41
		Row Valid N %	100.0%

Table 4.1. (cont.)

Job_Position	Logistician in the fieldwork	Count	130
		Row Valid N %	100.0%
	Logistics manager in the headquarters	Count	100
		Row Valid N %	100.0%
International_Character_of_duties	International level	Count	99
		Row Valid N %	100.0%
	Local level	Count	131
		Row Valid N %	100.0%
Work_experience	≥ 11 years	Count	57
		Row Valid N %	100.0%
	1-3 years	Count	25
		Row Valid N %	100.0%
	4-6 years	Count	51
		Row Valid N %	100.0%
	7-10 years	Count	97
		Row Valid N %	100.0%

The findings reveal that the skills related to risk management, project management, strategic management, warehousing, and inventory and asset management ranked the top five skills as being rated “extremely important” in terms of logistics performance by humanitarian logisticians engaged in disaster relief in Türkiye.

According to the findings, under the set of general management skills, 72.7% of respondents ranked risk management as extremely important to their performance, followed by project management with 69.7% and strategic management with 66.7% (see Appendix B). The findings indicate that warehousing ranked the first most important functional logistics skill. Furthermore, 58.6% of logisticians evaluated Inventory and asset management to be extremely important, and 54.6% considered purchasing and procurement extremely important for their logistics performance. Change management and reverse logistics are the skills that were rated as “neutral” in terms of their importance to logistics performance by 51.5% and 39.4%, respectively.

48.5% and 39.4% of respondents rated customer relationship management and marketing as important, respectively. This study indicates that humanitarian

logisticians consider customer relationship management and marketing relevant to their logistics performance. An explanation for that might be that the respondents perceived the word customers here as donors, and humanitarian organizations need to maintain strong relationships with the donors as customers. Marketing also was relevant since humanitarian organizations want to spread their humanitarian campaigns among donors to gain as many donors as possible. This study goes against the arguments of Kovács and Tatham (2010) and Kovács et al. (2012), which state that skills related to marketing and customer relationship management seem irrelevant to logistics performance.

4.2. The Relationship Between the Perceived Importance of General Management Skills and Demographic Variables

4.2.1. Age and the Perceived Importance of General Management Skills

The problem is to investigate whether the perceived importance of general management skills in terms of logistics performance differs across different age categories of humanitarian logisticians.

Hypothesis (H_{1a}): There are significant differences in the perceived importance of general management skills across different age categories of humanitarian logisticians.

The age intervals were given in four groups (Group 1: 20-24 years; Group 2: 25-35 years; Group 3: 36-45 years, and group 4: > 45 years). According to the descriptive statistics in Table 4.2, a change in the means is detected, which in return results in a difference in the perceived importance of general management skills. The results reveal that humanitarian logisticians who are older than 45 years ($M = 41.488$, $SD = 4.717$) gave slightly higher importance to general management skills than the ones in the other groups between 36-45 years ($M = 40.427$, $SD = 4.934$), 25-35 years ($M = 40.416$, $SD = 3.460$). And the ones who are between 20-24 years ($M = 39.772$, $SD = 4.275$) are the least ones who evaluated general management skills to be important to their logistics performance.

Table 4.2. Descriptive Statistics of Age within the Importance of General Management Skills

General_Management_Skills_Importance								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
> 45	45	41.488	4.717	.703	40.071	42.906	26.00	50.00
20-24	22	39.772	4.275	.911	37.877	41.668	31.00	48.00
25-35	60	40.416	3.460	.446	39.522	41.310	29.00	46.00
36-45	103	40.427	4.934	.486	39.462	41.391	21.00	50.00
Total	230	40.569	4.485	.295	39.986	41.152	21.00	50.00

In this study, the level of significance is taken at 0.05. The hypothesis (H_{1a}) tests whether the perceived importance of general management skills differs among different age categories. To test this hypothesis, a one-way ANOVA is conducted. The results of the one-way ANOVA are illustrated in Table 4.3 and Table 4.4. The test of homogeneity of variances in Table 4.3 shows that Levene's Statistic based on the mean is not significant (0.276). Thus, equal variances were assumed, which concludes that there are no significant differences in the homogeneity of variances.

The results of ANOVA in Table 4.4 suggest that there are no significant differences between humanitarian logisticians who are in different age categories in terms of their perceived importance of the general management skills (F = 0.918; p = 0.433). Hence, the hypothesis (H_{1a}) is not supported. Since there are no significant differences between different age groups, a post hoc test is not required in this case.

Table 4.3. Test of Homogeneity of Variances for Age within the Importance of General Management Skills

		Levene Statistic	df1	df2	Sig.
General_Management_Skills_Importance	Based on Mean	1.299	3	226	.276
	Based on Median	1.169	3	226	.322
	Based on Median and with adjusted df	1.169	3	202.121	.323
	Based on trimmed mean	1.335	3	226	.264

Table 4.4. ANOVA Results for Age within the Importance of General Management Skills

General_Management_Skills_Importance

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	55.492	3	18.497	.918	.433
Within Groups	4552.895	226	20.146		
Total	4608.387	229			

4.2.2. Gender and the Perceived Importance of General Management Skills

The problem is to investigate whether the perceived importance of general management skills in terms of logistics performance differs with respect to the gender of humanitarian logisticians.

Hypothesis (H_{1b}): There is a significant difference in the perceived importance of general management skills between male and female humanitarian logisticians.

This hypothesis assumes that the perceived importance of general management skills differs significantly with respect to the gender of humanitarian logisticians. To test this hypothesis, an independent samples t-test is conducted. The results in Table 4.5 show that male humanitarian logisticians (M = 40.726, SD = 4.411) perceive general management skills to be highly important more than females do (M = 40.372, SD = 4.592). According to the results of the independent-samples t-test in Table 4.6, the difference in the means (-0.354) at 95% confidence interval (-1.528, 0.820) is not significant $t(228) = -0.594, p = 0.553$. Hence, the hypothesis (H_{1b}) is not supported, and we conclude that there is no significant difference in the perceived importance of the general management skills based on the gender of humanitarian logisticians.

Table 4.5. Group Statistics on Gender within the Importance of General Management Skills

	Gender	N	Mean	Std. Deviation	Std. Error Mean
General_Management_Skills_Importance	Female	102	40.372	4.592	.454
	Male	128	40.726	4.411	.389

Table 4.6. Independent-Samples T-Test for Gender within the Importance of General Management Skills

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
General_Management_Skills_Importance	Equal variances assumed	.001	.970	-.594	228	.553	-.354	.596	-1.528	.820
	Equal variances not assumed			-.591	212.692	.555	-.354	.598	-1.53	.826

4.2.3. Work Experience and the Perceived Importance of General Management Skills

The problem is to investigate whether the perceived importance of general management skills in terms of logistics performance differs across different years of work experience of humanitarian logisticians.

Hypothesis (H_{1c}): There are significant differences in the perceived importance of general management skills across different years of work experience of humanitarian logisticians.

The work experience years were given in four groups (Group 1: 1-3 years; Group 2: 4-6 years; Group 3: 7-10 years, and group 4: ≥ 11 years). According to the descriptive statistics in Table 4.7, a change in the means is detected, which in return results in a difference in the perceived importance of general management skills. The results reveal that humanitarian logisticians who have 11 years of work experience or more ($M = 41.736$, $SD = 4.474$) gave higher importance to general management skills than the ones with work experience of 7-10 years ($M = 40.288$, $SD = 3.807$), and 4-6 years ($M = 40.215$, $SD = 5.104$). The ones who have work experience of 1-3 years ($M = 39.720$, $SD = 5.334$) were the least who evaluated general management skills to be important to their logistics performance. This concludes that humanitarian logisticians

with long working experience consider general management skills to be important to their logistics performance more than the ones with little work experience do.

Table 4.7. Descriptive Statistics of Work Experience within the Importance of General Management Skills

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
≥ 11 years	57	41.736	4.474	.592	40.549	42.924	31.00	50.00
1-3 years	25	39.720	5.334	1.066	37.517	41.922	26.00	49.00
4-6 years	51	40.215	5.104	.714	38.780	41.651	21.00	49.00
7-10 years	97	40.288	3.807	.386	39.521	41.056	26.00	50.00
Total	230	40.569	4.485	.295	39.986	41.152	21.00	50.00

This hypothesis tests whether the perceived importance of general management skills differs among different years of work experience. To test this hypothesis, a one-way ANOVA is conducted. The results of the one-way ANOVA are illustrated in Table 4.8 and Table 4.9. The test of homogeneity of variances in Table 4.8 shows that Levene's Statistic based on the mean is not significant (0.127). Thus, equal variances were assumed, which concludes that there are no significant differences in the homogeneity of variances.

The results of ANOVA in Table 4.9 suggest that there are no significant differences between humanitarian logisticians with different years of work experience in terms of their perceived importance of general management skills ($F = 1.838$; $p = 0.141$). Hence, the hypothesis (H_{1c}) is not supported. Since no significant differences between different years of work experience were detected, a post hoc test is not required in this case.

Table 4.8. Test of Homogeneity of Variances for Work Experience within the Importance of General Management Skills

		Levene Statistic	df1	df2	Sig.
General_Management_Skills_Importance	Based on Mean	1.921	3	226	.127
	Based on Median	1.704	3	226	.167
	Based on Median and with adjusted df	1.704	3	204.625	.167
	Based on trimmed mean	1.665	3	226	.175

Table 4.9. ANOVA Results for Work Experience within the Importance of General Management Skills

General_Management_Skills_Importance					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	109.749	3	36.583	1.838	.141
Within Groups	4498.638	226	19.905		
Total	4608.387	229			

4.2.4. Job Position and the Perceived Importance of General Management Skills

The problem is to investigate whether the perceived importance of general management skills in terms of logistics performance differs with respect to the job position of humanitarian logisticians.

Hypothesis (H_{1d}): There is a significant difference in the perceived importance of general management skills between humanitarian logisticians in the fieldwork and logistics managers in the headquarters.

This hypothesis assumes that the perceived importance of general management skills differs significantly with respect to the job position of humanitarian logisticians. To test this hypothesis, an independent samples t-test is conducted. The results in Table 4.10 show that logistics managers in the headquarters (M = 41.930, SD = 3.599) perceive the general management skills to be highly important more than humanitarian logisticians in the fieldwork do (M = 39.523, SD = 4.821). According to the results of the independent samples t-test in Table 4.11, the difference in the means (-2.406) at 95% confidence interval (-3.501, -1.312) is significant $t(227.816) = -4.335, p = 0.000$. Hence, the hypothesis (H_{1d}) is supported, and we conclude that there is a significant difference in the perceived importance of the general management skills based on the job position of humanitarian logisticians.

Table 4.10. Group Statistics on Job Position within the Importance of General Management Skills

Job_Position		N	Mean	Std. Deviation	Std. Error Mean
General_Management_Skills_Importance	Logistician in the fieldwork	130	39.523	4.821	.422
	Logistics Manager in the headquarters	100	41.930	3.599	.359

Table 4.11. Independent-Samples T-Test for Job Position within the Importance of General Management Skills

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
General Management_Skills_Importance	Equal variances assumed	5.142	.024	4.176	228	.000	-2.406	.576	-3.542	1.271
	Equal variances not assumed			4.335	227.816	.000	-2.406	.555	-3.501	1.312

4.2.5. Organization and the Perceived Importance of General Management Skills

The problem is to investigate whether the perceived importance of general management skills in terms of logistics performance differs across different humanitarian organizations.

Hypothesis (H_{1e}): There are significant differences in the perceived importance of general management skills across different humanitarian organizations in Türkiye.

In this study, the humanitarian organizations of interest are six organizations (Organization 1: The Republic of Türkiye Disaster and Emergency Management Presidency (Turkish: AFAD; Organization 2: The Cansuyu Charity and Solidarity Association; Organization 3: The Deniz Feneri Association; Organization 4: The IHH Humanitarian Relief Foundation; Organization 5: The Turkish Red Crescent; Organization 6: Türkiye Diyanet Foundation).

According to the descriptive statistics in Table 4.12, a change in the means is detected, which in return results in a difference in the perceived importance of general management skills. The results reveal that humanitarian logisticians working at AFAD, the Republic of Türkiye Disaster and Emergency Management Presidency (M

= 42.571, SD = 2.138) gave higher importance to the general management skills than the ones working in the other humanitarian organizations. The Turkish Red Crescent evaluated the general management skills to be important (M = 41.487, SD = 4.894), more than the other organizations did such as Deniz Feneri Association (M = 40.562, SD = 3.715), Türkiye Diyanet Foundation (M = 40.561, SD = 3.571), and the İHH Humanitarian Relief Foundation (M = 40.360, SD = 5.000).

It can be stated that humanitarian logisticians' evaluations of the importance of the general management skills in both the Deniz Feneri Association (M = 40.562) and Türkiye Diyanet Foundation (M = 40.561) are at the same level. However, the humanitarian logisticians working at the Cansuyu Association (M = 39.292, SD = 4.981) were the least ones who evaluated general management skills to be important to their logistics performance.

Table 4.12. Descriptive Statistics of Organization within the Importance of General Management Skills

General_Management_Skills_Importance

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
AFAD	14	42.571	2.138	.571	41.336	43.805	38.00	46.00
Cansuyu Association	41	39.292	4.981	.777	37.720	40.864	26.00	47.00
Deniz Feneri Association	32	40.562	3.715	.656	39.223	41.902	32.00	49.00
İHH Relief Foundation	61	40.360	5.000	.640	39.080	41.641	21.00	50.00
Turkish Red Crescent	41	41.487	4.894	.764	39.942	43.032	31.00	50.00
Türkiye Diyanet Foundation	41	40.561	3.571	.557	39.433	41.688	32.00	46.00
Total	230	40.569	4.485	.295	39.986	41.152	21.00	50.00

This hypothesis tests whether the perceived importance of general management skills differs among different humanitarian organizations in Türkiye. To test this hypothesis, a one-way ANOVA is conducted. The results of the one-way ANOVA are illustrated in Table 4.13 and Table 4.14. The test of homogeneity of variances in Table 4.13

shows that Levene’s Statistic based on the mean is not significant (0.060). Thus, equal variances were assumed, which concludes that there are no significant differences in the homogeneity of variances.

Table 4.13. Test of Homogeneity of Variances for Organization within the Importance of General Management Skills

		Levene			
		Statistic	df1	df2	Sig.
General_Management_Skills_Importance	Based on Mean	2.152	5	224	.060
	Based on Median	2.100	5	224	.066
	Based on Median and with adjusted df	2.100	5	192.917	.067
	Based on trimmed mean	2.110	5	224	.065

The results of ANOVA in Table 4.14 suggest that there are no significant differences between humanitarian logisticians in different humanitarian organizations in terms of their perceived importance of the general management skills ($F = 1.613$; $p = 0.157$). Hence, the hypothesis (H_{1e}) is not supported. Since no significant differences between different organizations were detected, a post hoc test is not required in this case.

Table 4.14. ANOVA Results for Organization within the Importance of General Management Skills

General_Management_Skills_Importance					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	160.189	5	32.038	1.613	.157
Within Groups	4448.198	224	19.858		
Total	4608.387	229			

4.2.6. International Character of Duties and the Perceived Importance of General Management Skills

The problem is to investigate whether the perceived importance of general management skills in terms of logistics performance differs with respect to the international character of duties.

Hypothesis (H_{1f}): There is a significant difference in the perceived importance of general management skills between humanitarian logisticians who cover their activities at the international level and the humanitarian logisticians at the local level.

This hypothesis assumes that the perceived importance of general management skills differs significantly with respect to the international character of duties. To test this hypothesis, an independent samples t-test is conducted. The results in Table 4.15 show that humanitarian logisticians performing at the local level (M = 41.167, SD = 4.516) perceive the general management skills to be highly important more than the humanitarian logisticians performing at the international do (M = 39.777, SD = 4.341).

According to the results of the independent samples t-test in table 4.16, the difference in the means (-1.390) at 95% confidence interval (-2.555, -0.224) is significant t (228) = -2.350, p = 0.020. Hence, the hypothesis (H_{1f}) is supported, and we conclude that there is a significant difference in the perceived importance of general management skills based on the international character of duties.

Table 4.15. Group Statistics on International Character of Duties within the Importance of General Management Skills

		International_Character_of_Duties	N	Mean	Std. Deviation	Std. Error Mean
General_Management_Skills_Importance	International level		99	39.777	4.341	.436
	Local level		131	41.167	4.516	.394

Table 4.16. Independent-Samples T-Test for International Character of Duties within the Importance of General Management Skills

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
General_Management_Skills_Importance	Equal variances assumed	.042	.838	-2.350	228	.020	-1.390	.591	-2.555	-.224
	Equal variances not assumed			-2.363	215.304	.019	-1.390	.588	-2.549	-.230

4.3. The Relationship between the Perceived Importance of Functional Logistics Skills and Demographic Variables

4.3.1. Age and the Perceived Importance of Functional Logistics Skills

The problem is to investigate whether the perceived importance of functional logistics skills in terms of logistics performance differs across different age categories of humanitarian logisticians.

Hypothesis (H_{2a}): There are significant differences in the perceived importance of functional logistics skills across different age categories of humanitarian logisticians.

The age intervals were given in four groups (Group 1: 20-24 years; Group 2: 25-35 years; Group 3: 36-45 years, and group 4: > 45 years). According to the descriptive statistics in Table 4.17, a change in the means is detected, which in return results in a difference in the perceived importance of functional logistics skills. The results reveal that humanitarian logisticians who are in the age between 36-45 years (M = 40.087, SD = 4.757) gave higher importance to the functional logistics skills than the logisticians who are between 20-24 years (M = 37.818, SD = 4.914), 25-35 years (M = 38.600, SD = 4.097), and older than 45 years (M = 39.288, SD = 4.570).

Table 4.17. Descriptive Statistics of Age within the Importance of Functional Logistics Skills

Functional_Logistics_Skills_Importance								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
> 45	45	39.288	4.570	.681	37.915	40.662	28.00	49.00
20-24	22	37.818	4.914	1.047	35.639	39.997	29.00	46.00
25-35	60	38.600	4.097	.528	37.541	39.658	27.00	47.00
36-45	103	40.087	4.757	.468	39.157	41.017	26.00	50.00
Total	230	39.326	4.609	.303	38.727	39.925	26.00	50.00

This hypothesis tests whether the perceived importance of functional logistics skills differs among different age categories. To test this hypothesis, a one-way ANOVA is

conducted. The results of the one-way ANOVA are illustrated in Table 4.18 and Table 4.19. The test of homogeneity of variances in Table 4.18 shows that Levene's Statistic based on the mean is not significant (0.562). Thus, equal variances were assumed, which concludes that there are no significant differences in the homogeneity of variances.

Table 4.18. Test of Homogeneity of Variances for Age within the Importance of Functional Logistics Skills

		Levene Statistic	df1	df2	Sig.
Functional_Logistics_ Skills_Importance	Based on Mean	.684	3	226	.562
	Based on Median	.643	3	226	.588
	Based on Median and with adjusted df	.643	3	224.168	.588
	Based on trimmed mean	.698	3	226	.554

The results of ANOVA in Table 4.19 suggest that there are no significant differences between humanitarian logisticians who are in different age categories in terms of their perceived importance of the functional logistics skills ($F = 2.255$; $p = 0.083$). Hence, the hypothesis (H_{2a}) is not supported. Since there are no significant differences between different age groups, a post hoc test is not required in this case.

Table 4.19. ANOVA Results for Age within the Importance of Functional Logistics Skills

Functional_Logistics_Skills_Importance					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	141.413	3	47.138	2.255	.083
Within Groups	4725.131	226	20.908		
Total	4866.543	229			

4.3.2. Gender and the Perceived Importance of Functional Logistics Skills

The problem is to investigate whether the perceived importance of functional logistics skills in terms of logistics performance differs with respect to the gender of humanitarian logisticians.

Hypothesis (H_{2b}): There is a significant difference in the perceived importance of functional logistics skills between male and female humanitarian logisticians.

This hypothesis assumes that the perceived importance of functional logistics skills differs significantly with respect to the gender of humanitarian logisticians. To test this hypothesis, an independent samples t-test is conducted. The results in Table 4.20 show that male humanitarian logisticians ($M = 39.671$, $SD = 4.076$) perceive the functional logistics skills to be highly important more than females do ($M = 38.892$, $SD = 5.191$).

According to the results of the independent samples t-test in Table 4.21, the difference in the means (-0.779) at 95% confidence interval ($-2.017, 0.458$) is not significant $t(188.452) = -1.242$, $p = 0.216$. Hence, the hypothesis (H_{2b}) is not supported, and we conclude that there is no significant difference in the perceived importance of functional logistics skills based on the gender of humanitarian logisticians.

Table 4.20. Group Statistics on Gender within the Importance of Functional Logistics Skills

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Functional_Logistics_Skills_Importance	Female	102	38.892	5.191	.514
	Male	128	39.671	4.076	.360

Table 4.21. Independent-Samples T-Test for Gender within the Importance of Functional Logistics Skills

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Functional_Logistics_Skills_Importance	Equal variances assumed	5.145	.024	-1.276	228	.203	-.779	.611	-1.983	.424
	Equal variances not assumed			-1.242	188.452	.216	-.779	.627	-2.017	.458

4.3.3. Work Experience and the Perceived Importance of Functional Logistics Skills

The problem is to investigate whether the perceived importance of functional logistics skills in terms of logistics performance differs across different years of work experience of humanitarian logisticians.

Hypothesis (H_{2c}): There are significant differences in the perceived importance of functional logistics skills across different years of work experience of humanitarian logisticians.

The work experience years were given in four groups (Group 1: 1-3 years; Group 2: 4-6 years; Group 3: 7-10 years, and group 4: ≥ 11 years). According to the descriptive statistics in Table 4.22, a change in the means is detected, which in return results in a difference in the perceived importance of functional logistics skills. The results reveal that humanitarian logisticians who have 11 years or more of work experience ($M = 40.754$, $SD = 4.736$) gave higher importance to functional logistics skills than the ones with work experience of 4-6 years ($M = 39.470$, $SD = 3.986$), and 1-3 years ($M = 39.080$, $SD = 5.589$). However, the ones who have work experience of 7-10 years ($M = 38.474$, $SD = 4.420$) were the least who evaluated functional logistics skills to be extremely important to their logistics performance.

Table 4.22. Descriptive Statistics of Work Experience within the Importance of Functional Logistics Skills

Functional_Logistics_Skills_Importance								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
≥ 11 years	57	40.754	4.736	.627	39.497	42.011	30.00	50.00
1-3 years	25	39.080	5.589	1.117	36.772	41.387	27.00	50.00
4-6 years	51	39.470	3.986	.558	38.349	40.591	30.00	49.00
7-10 years	97	38.474	4.420	.448	37.583	39.365	26.00	48.00
Total	230	39.326	4.609	.303	38.727	39.925	26.00	50.00

This hypothesis tests whether the perceived importance of functional logistics skills differs among different years of work experience. To test this hypothesis, a one-way ANOVA is conducted. The results of the one-way ANOVA are illustrated in Table 4.23 and Table 4.24. The test of homogeneity of variances in Table 4.23 shows that Levene's Statistic based on the mean is not significant (0.335). Thus, equal variances were assumed. So, according to the test of homogeneity of variances, there are no significant differences in the homogeneity of variances.

Table 4.23. Test of Homogeneity of Variances for Work Experience within the Importance of Functional Logistics Skills

		Levene			
		Statistic	df1	df2	Sig.
Functional_Logistics_Skills_Importance	Based on Mean	1.136	3	226	.335
	Based on Median	1.090	3	226	.354
	Based on Median and with adjusted df	1.090	3	213.140	.354
	Based on trimmed mean	1.133	3	226	.336

However, the results of ANOVA in Table 4.24 suggest that there are significant differences between the humanitarian logisticians' perceived importance of the functional logistics skills across different years of work experience ($F = 3.048$; $p = 0.030$). Hence, the hypothesis (H_{2c}) is supported. According to the significant differences in the perceived importance of the functional logistics skills across different work experience years, a post hoc test is required to examine where this significant difference is exactly placed. By using Hochberg's GT2, multiple comparisons among the groups are assessed.

According to the group differences in Table 4.25, the mean for humanitarian logisticians who have 11 years or more of work experience ($M = 40.754$, $SD = 4.736$) is significantly different from the ones with 7-10 years of work experience ($M = 38.474$, $SD = 4.420$). However, no significant differences were detected between the other groups of the years of work experience in terms of their perceived importance of functional logistics skills.

Table 4.24. ANOVA Results for Work Experience within the Importance of Functional Logistics Skills

Functional_Logistics_Skills_Importance					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	189.251	3	63.084	3.048	.030
Within Groups	4677.293	226	20.696		
Total	4866.543	229			

Table 4.25. Multiple Comparison Hochberg's GT2 Test among the groups of Work Experience

Dependent Variable: Functional_Logistics_Skills_Importance

Hochberg

(I) Work_experience	(J) Work_experience	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
≥ 11 years	1-3 years	1.674	1.091	.553	-1.221	4.569
	4-6 years	1.283	.876	.605	-1.042	3.610
	7-10 years	2.280*	.759	.018	.265	4.294
1-3 years	≥ 11 years	-1.674	1.091	.553	-4.569	1.221
	4-6 years	-.390	1.110	1.000	-3.337	2.556
	7-10 years	.605	1.020	.992	-2.101	3.313
4-6 years	≥ 11 years	-1.283	.876	.605	-3.610	1.042
	1-3 years	.390	1.110	1.000	-2.556	3.337
	7-10 years	.996	.786	.748	-1.091	3.084
7-10 years	≥ 11 years	-2.280*	.759	.018	-4.294	-.265
	1-3 years	-.605	1.020	.992	-3.313	2.101
	4-6 years	-.996	.786	.748	-3.084	1.091

*. The mean difference is significant at the 0.05 level.

4.3.4. Job Position and the Perceived Importance of Functional Logistics Skills

The problem is to investigate whether the perceived importance of functional logistics skills in terms of logistics performance differs with respect to the job position of humanitarian logisticians.

Hypothesis (H_{2a}): There is a significant difference in the perceived importance of functional logistics skills between humanitarian logisticians in the fieldwork and logistics managers in the headquarters.

Table 4.26. Group Statistics on Job Position within the Importance of Functional Logistics Skills

		N	Mean	Std. Deviation	Std. Error Mean
Functional_Logistics_ Skills_Importance	Logistician in the fieldwork	130	38.830	4.726	.414
	Logistics manager in the headquarters	100	39.970	4.393	.439

Table 4.27. Independent-Samples T-Test for Job Position within the Importance of Functional Logistics Skills

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Functional _Logistics _Skills_Importance	Equal variances assumed	.491	.484	- 1.868	228	.063	-1.139	.609	-2.340	.062
	Equal variances not assumed			- 1.886	219.959	.061	-1.139	.604	-2.329	.051

The hypothesis (H_{2d}) assumes that the perceived importance of functional logistics skills differs significantly with respect to the job position of humanitarian logisticians.

To test this hypothesis, an independent samples t-test is conducted. The results in Table 4.26 show that logistics managers in the headquarters ($M = 39.970$, $SD = 4.393$) perceive the functional logistics skills to be highly important more than the humanitarian logisticians in the fieldwork do ($M = 38.830$, $SD = 4.726$). According to the results of the independent samples t-test in Table 4.27, the difference in the means (-1.139) at 95% confidence interval (-2.340, 0.062) is not significant $t(228) = -1.868$, $p = 0.063$. Hence, the hypothesis (H_{2d}) is not supported, and we conclude that there is no significant difference in the perceived importance of the functional logistics skills based on the job position of humanitarian logisticians.

4.3.5. Organization and the Perceived Importance of Functional Logistics Skills

The problem is to investigate whether the perceived importance of functional logistics skills in terms of logistics performance differs across different humanitarian organizations in Türkiye.

Hypothesis (H_{2e}): There are significant differences in the perceived importance of functional logistics skills across different humanitarian organizations in Türkiye.

The survey reached six humanitarian organizations (Organization 1: The Republic of Türkiye Disaster and Emergency Management Presidency (Turkish: AFAD; Organization 2: The Cansuyu Charity and Solidarity Association; Organization 3: The Deniz Feneri Association; Organization 4: The IHH Humanitarian Relief Foundation; Organization 5: The Turkish Red Crescent; Organization 6: Türkiye Diyanet Foundation). According to the descriptive statistics in Table 4.28, a change in the means is detected, which in return results in a difference in the perceived importance of functional logistics skills. The results reveal that humanitarian logisticians working at AFAD, the Republic of Türkiye Disaster and Emergency Management Presidency ($M = 40.928$, $SD = 3.149$) gave higher importance to functional logistics skills than the ones working in the other humanitarian organizations.

This is followed by the Turkish Red Crescent, where the logisticians considered higher importance of functional logistics skills than their counterparts in the other organizations. According to the mean, ($M = 39.097$, $SD = 3.979$), ($M = 39.097$, $SD = 4.630$), both the Cansuyu Association and Türkiye Diyanet Foundation evaluated functional logistics skills at the same level of importance, respectively, indicating that there is no difference in the perceived importance of functional logistics skills by the humanitarian logisticians working at these two foundations. The Deniz Feneri Association ($M = 39.000$, $SD = 5.028$) evaluated the skills almost on the same level as the last mentioned organizations. However, the humanitarian logisticians working at the IHH Humanitarian Relief Foundation ($M = 38.819$, $SD = 3.779$) were the least ones who evaluated functional logistics skills to be important to their logistics performance.

Table 4.28. Descriptive Statistics of Organization within the Importance of Functional Logistics Skills

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
AFAD	14	40.928	3.149	.841	39.110	42.746	37.00	48.00
Cansuyu Association	41	39.097	3.979	.621	37.841	40.353	29.00	47.00
Deniz Feneri Association	32	39.000	5.028	.889	37.186	40.813	27.00	47.00
İHH Relief Foundation	61	38.819	3.779	.483	37.851	39.787	29.00	46.00
Turkish Red Crescent	41	40.243	6.147	.960	38.303	42.184	28.00	50.00
Türkiye Diyanet Foundation	41	39.097	4.630	.723	37.636	40.559	26.00	47.00
Total	230	39.326	4.609	.303	38.727	39.925	26.00	50.00

This hypothesis tests whether the perceived importance of functional logistics skills differs among different humanitarian organizations in Türkiye. To test this hypothesis, a one-way ANOVA is conducted. The results of the one-way ANOVA are illustrated in Table 4.29 and Table 4.30. The test of homogeneity of variances in Table 4.29 shows that Levene's Statistic based on the mean is significant (0.001). Thus, equal variances were not assumed, which concludes that there are significant differences in the homogeneity of variances.

Table 4.29. Test of Homogeneity of Variances for Organization within the Importance of Functional Logistics Skills

		Levene Statistic	df1	df2	Sig.
Functional_Logistics_Skills_Importance	Based on Mean	4.127	5	224	.001
	Based on Median	3.997	5	224	.002
	Based on Median and with adjusted df	3.997	5	209.637	.002
	Based on trimmed mean	4.175	5	224	.001

The results of ANOVA in Table 4.30 suggest that there are no significant differences between humanitarian logisticians in different humanitarian organizations in terms of their perceived importance of functional logistics skills ($F = 0.881$; $p = 0.495$). Hence, hypothesis H_{2e} is not supported. Since there are no significant differences between different organizations, a post hoc test is not required in this case.

Table 4.30. ANOVA Results for Organization within the Importance of Functional Logistics Skills

Functional_Logistics_Skills_Importance					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	93.818	5	18.764	.881	.495
Within Groups	4772.725	224	21.307		
Total	4866.543	229			

4.3.6. International Character of Duties and the Perceived Importance of Functional Logistics Skills

The problem is to investigate whether the perceived importance of functional logistics skills in terms of logistics performance differs with respect to the international character of duties.

Hypothesis (H_{2f}): There is a significant difference in the perceived importance of functional logistics skills between humanitarian logisticians who cover their activities at the international level and the humanitarian logisticians at the local level.

Table 4.31. Group Statistics on International Character of Duties within the Importance of Functional Logistics Skills

		N	Mean	Std. Deviation	Std. Error Mean
Functional_Logistics_Skills_Importance	International level	99	39.111	4.349	.437
	Local level	131	39.488	4.807	.420

Table 4.32. Independent-Samples T-Test for International Character of Duties within the Importance of Functional Logistics Skills

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Functional _Logistics_ Skills_Importance	Equal variances assumed	.271	.603	-.614	228	.540	-.377	.614	-1.588	.833
	Equal variances not assumed			-.623	220.692	.534	-.377	.606	-1.572	.817

This hypothesis assumes that the perceived importance of functional logistics skills differs significantly with respect to the international character of duties. To test this hypothesis, an independent samples t-test is conducted. The results in Table 4.31 show that humanitarian logisticians performing at the local level ($M = 39.488$, $SD = 4.807$) perceive functional logistics skills to be highly important more than the humanitarian logisticians performing at the international level do ($M = 39.111$, $SD = 4.349$). According to the results of the independent samples t-test in Table 4.32, the difference in the means (-0.377) at 95% confidence interval ($-1.588, 0.833$) is not significant $t(228) = -0.614$, $p = 0.540$. Hence, the hypothesis (H_{2f}) is not supported, and we conclude that there is no significant difference in the perceived importance of the functional logistics skills based on the international character of duties.

Table 4.33. Summary of the Hypotheses Testing Results

Hypothesis	Research Results
H_{1a} : There are significant differences in the perceived importance of general management skills across different age categories of humanitarian logisticians	Not Supported
H_{1b} : There is a significant difference in the perceived importance of general management skills between male and female humanitarian logisticians	Not Supported
H_{1c} : There are significant differences in the perceived importance of general management skills across different years of work experience of humanitarian logisticians.	Not Supported
H_{1d} : There is a significant difference in the perceived importance of general management skills between humanitarian logisticians in the fieldwork and logistics managers in the headquarters.	Supported
H_{1e} : There are significant differences in the perceived importance of general management skills across different types of humanitarian organizations	Not Supported
H_{1f} : There is a significant difference in the perceived importance of general management skills between humanitarian logisticians who cover their activities at the international level and the humanitarian logisticians at the local level	Supported

Table 4.33. (cont.)

H_{2a}: There are significant differences in the perceived importance of functional logistics skills across different age categories of humanitarian logisticians	Not Supported
H_{2b}: There is a significant difference in the perceived importance of functional logistics skills between male and female humanitarian logisticians	Not Supported
H_{2c}: There are significant differences in the perceived importance of functional logistics skills across different years of work experience of humanitarian logisticians	Supported
H_{2d}: There is a significant difference in the perceived importance of functional logistics skills between humanitarian logisticians in the fieldwork and logistics managers in the headquarters	Not Supported
H_{2e}: There are significant differences in the perceived importance of functional logistics skills across different types of humanitarian organizations	Not Supported
H_{2f}: There is a significant difference in the perceived importance of functional logistics skills between humanitarian logisticians who cover their activities at the international level and the humanitarian logisticians at the local level	Not Supported

CHAPTER V

CONCLUSIONS

Humanitarian logistics is a relatively new term in the literature which gains much attention from researchers. This study aims to reveal if there is a relationship between the perceived importance of the general management and functional logistics skills and demographic variables such as the logistician's age, gender, work experience, job position, organization, and international character of duties.

A self-administered questionnaire consisting of logistics skills is adopted from the T-shaped logistics skills model of Tatham & Kovács (2010). The survey is distributed online to humanitarian logisticians who are engaged in disaster relief operations in different humanitarian organizations in Türkiye. The respondents were asked to evaluate the importance of some sets of logistics skills to logistics performance on a 5-point Likert scale from 1: Not important at all to 5: Extremely important. A sample of 230 responses was collected, and the data analysis was conducted by SPSS 25. Hypotheses were tested to predict the relationship between the perceived importance of the skills and demographic variables.

5.1. General Management Skills and Demographic Variables

The perceived importance of general management skills differs across different categories of age, organizations, years of work experience, and gender. However, no significant differences among these variables were detected.

By examining the relationship between the perceived importance of general management skills and different job positions, the results state that the hypothesis (H_{1d}) is supported. The results indicate that the importance of general management skills perceived by humanitarian logisticians working in disaster relief operations in several humanitarian organizations in Türkiye varies significantly across different job

positions. Humanitarian logistics managers in the headquarters consider general management skills highly important in terms of their logistics performance, unlike humanitarian logisticians in the fieldwork. Logistics managers in the headquarters rated general management skills as more important in terms of their performance than functional logistics skills. This finding, in the humanitarian context, supports the views of Mangan et al. (2001) and Murphy and Poist (2007) in business logistics which stress that logisticians perceive themselves as managers first and logisticians second.

The relationship between the perceived importance of general management skills and the international character of duties was tested. The results revealed that the hypothesis (H_{1f}) is supported. The results indicate that the importance of general management skills perceived by humanitarian logisticians working in disaster relief operations in several humanitarian organizations in Türkiye varies significantly at the international and national levels. Humanitarian logistics who cover their activities at the local level perceive the general management skills to be important for their logistics performance more than logisticians working at the international level do. General management skills gained more importance for logistics performance than functional logistics skills by humanitarian logisticians who cover their activities at the local level.

Among different categories of age, humanitarian logisticians older than 45 are the most who evaluated the general management skills to be highly important to their logistics performance, unlike the ones aged between 20-24 years. Male humanitarian logisticians rated the general management skills as important to their logistics performance more than female humanitarian logisticians did. The comparisons indicate that male humanitarian logisticians engaged in disaster relief in Türkiye consider general management skills more relevant to their logistics performance than functional logistics skills.

Across several organizations, humanitarian logisticians working at the Republic of Türkiye Disaster and Emergency Management Presidency, AFAD, and the ones working at the Turkish Red Crescent evaluated the general management skills to be highly important to their logistics performance at a rate higher than their counterparts in the other humanitarian organizations.

According to the results of the humanitarian logisticians working at AFAD and the Turkish Red Crescent, functional logistics skills and general management skills both weigh equal importance in terms of logistics performance. This suggests that there has to be a combination of technical skills related to logistics and managerial skills. This finding goes in line with what Kovács et al. (2012) state that both soft and hard skills are indeed substantial in the area of logistics.

However, humanitarian logisticians working at the Cansuyu Association referred to general management skills as important at a rate lower than the one that other logisticians in the other humanitarian organizations rated.

5.2. Functional Logistics Skills and Demographic Variables

By examining the relationship between the perceived importance of functional logistics skills and different years of work experience, the results state that the hypothesis (H_{2c}) is supported. The results indicate that the importance of the functional logistics skills perceived by humanitarian logisticians working in disaster relief operations in several humanitarian organizations in Türkiye varies significantly across years of work experience. Humanitarian logisticians with long working experience of 11 years or more consider functional logistics skills highly important in terms of their logistics performance, unlike humanitarian logisticians with less work experience. The perceived importance of the functional logistics skills differs across different age categories, organizations, job positions, the international character of duties, and gender. However, no significant differences among these variables were detected.

Considering age as an independent variable, humanitarian logisticians aged between 36-45 years are the most who evaluated the functional logistics skills to be highly important to their logistics performance, unlike the ones aged between 20-24 years. Male humanitarian logisticians rated functional logistics skills as important to their logistics performance more than female humanitarian logisticians did. Surprisingly, logistics managers in the headquarters rated the functional logistics skills as important to their performance more than the logisticians in the fieldwork did.

According to the findings, humanitarian logisticians working at the Republic of Türkiye Disaster and Emergency Management Presidency, AFAD, and the ones working at the Turkish Red Crescent evaluated the functional logistics skills to be highly important to their logistics performance at an importance rate higher than their counterparts in the other humanitarian organizations. However, humanitarian logisticians working at the IHH Humanitarian Relief Foundation referred to the functional logistics skills as important at a rate lower than the one that other logisticians in the other humanitarian organizations rated. Additionally, the findings show that humanitarian logisticians working at the local level evaluated the functional logistics skills to be important slightly more than the logisticians working at the international level did.

5.3. Limitations

It was hard for the researcher to reach these types of organizations working in the humanitarian field, especially in the area of disaster relief. The researcher has expanded the sample size to cover other organizations' types in the study; however, few respondents were willing to participate in the questionnaire. The reason behind this can be related to the nature of their work, which requires them to be always on standby delivering what is urgently demanded pre-, during, and post-disaster. Additionally, facing the challenges in a world of the unknown and working in a field of unpredictability like the field of humanitarian logistics, the lack of time, and the intensive schedule of humanitarian logisticians have prevented many from taking part in the survey. This, in return, might affect the generalizability of the results.

During the data collection process, after the researcher made visits to the headquarters of the targeted humanitarian organizations, it was noticed that some of the employees were not familiar with “humanitarian logistics” as a theoretical term in literature and were having inquiries about the area which made some hesitant to submit responses. This limited the number of responses received and slowed down the process.

5.4. Recommendations for Future Studies

Recommendations in the framework of this study can be highlighted for organizations engaged in humanitarian aid and for researchers working on future studies in the area.

For future studies in the area, it is recommended to involve other demographic variables in the study, such as the disaster phase. The perceived importance of specific skills sets for logistics performance might be influenced by different stages of disasters. Thus, to reach more accurate answers, the researcher can ask the respondents to specify which disaster phase they work in and/or evaluate which skills weigh the highest importance in terms of logistics performance during different disaster phases, including disaster preparedness, and disaster response, and reconstruction and rehabilitation.

To gain more in-depth information regarding the difference that occurs in the perceived importance of the skills with respect to the independent variables, a mixed-method approach of interviews and surveys is suggested to give a free space for the respondents to illustrate the importance of each skill for their logistics performance and determine what other skills that might be relevant to their performance.

It is intended that the findings are taken as a reference for the participating humanitarian organizations when establishing their training program by studying the provided results and considering the perceptions of their logisticians. They will understand which skills are most highly important to the overall logistics performance. As a result, humanitarian organizations will be aware of which skills their employees consider the most so that training programs are organized accordingly. The findings can also be recommended for other humanitarian organizations in the recruitment process. By reviewing the results, organizations will understand which skills are perceived important to logistics performance from the perspective of humanitarian logisticians who have been working in the field for 11 years or more in different job positions and international character of the duties.

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APPENDIXES

APPENDIX A

The Survey Questions

SECTION I: Demographic Variables

Q1: Age (Yaş)

- < 20
- 20-24
- 25-35
- 36-45
- 45+

Q2: Gender (Cinsiyet)

- Female (Kadın)
- Male (Erkek)

Q3: Which organization are you working at? / Hangi organizasyon için çalışıyorsunuz?

- AFAD
- İHH
- Turkish Red Crescent
- Türkiye Diyanet Foundation
- Deniz Feneri Association
- Cansuyu Association

Q4: Which one does describe your duty in your organization at best? / Kuruluşunuzdaki görevinizi hangisi daha iyi tanımlamaktadır?

- Logistician in the fieldwork / Saha çalışmasında lojistikçi olarak
- Logistics manager in the headquarters / Merkezde lojistik direktörü olarak

Q5: At which level of your organization do you work? Organizasyonel faaliyetlerinizi hangi düzeyde gerçekleştiriyorsunuz?

- International level / Uluslararası düzey
- Local level / Yerel düzey

Q6: Work experience (İş deneyimi)

- () less than 1 year (1 yıldan az)
- () 1-3 years (1-3 yıl arası)
- () 4-6 years (4-6 yıl arası)
- () 7-10 years (7-10 yıl arası)
- () 11 or more years (11 yıl veya daha fazla)

SECTION II: Evaluating the importance of the general management and functional logistics skills in terms of logistics performance

Q1: How important are the following skills for job performance in Humanitarian Aid operations? / İnsani Yardım alanında iş performansı için aşağıdaki beceriler ne kadar önemlidir?

Part 1 (General Management Skills)

Bölüm 1 (Genel Yönetim Becerileri)

- Finance and accounting (Finans ve muhasebe)
- Information technology management (Bilgi Teknolojileri Yönetimi)
- Change management (Değişim yönetimi)
- Marketing (Pazarlama)
- Project management (Proje yönetimi)
- Strategic management (Stratejik yönetim)
- Customer relationship management (Müşteri ilişkileri yönetimi)
- Supplier relationship management (Tedarikçi ilişkileri yönetimi)
- Risk management (Risk yönetimi)
- Human resource management (İnsan kaynakları yönetimi)

Part 2 (Functional Logistics Skills)

Bölüm 2 (Fonksiyonel Lojistik Becerileri)

- Legal skills (Yasal beceriler)
- Customs, import, and export (Gümrük, ithalat ve ihracat)
- Transportation management (Nakliye yönetimi)
- Inventory and asset management (Envanter ve varlık yönetimi)
- Warehousing (Depolama)

- Purchasing and procurement (Satın alma ve tedarik)
- Forecasting (Öngörüleme)
- Reverse logistics (Tersine lojistik)
- Port / airport management (Liman / havalimanı yönetimi)
- Logistics information systems (Lojistik bilgi sistemleri)



APPENDIX B

Table B.1. The Average Importance Scores of the Tested Skills in Terms of Performance

The Skill	How much this skill is perceived to be “Extremely important” for logistics performance	How much this skill is perceived to be “important” for logistics performance	How much this skill is perceived to be “Not important at all” for logistics performance
Finance and Accounting	54.5%	42.4%	3.0%
Information technology management	57.6%	36.4%	3.0%
Change management	21.2%	51.5%	5.1%
Marketing	33.3%	48.5%	9.1%
Project management	69.7%	24.2%	4.1%
Strategic management	66.7%	30.3%	3.0%
Customer relationship management	45.5%	39.4%	3.0%
Supplier relationship management	39.4%	39.4%	4.2%
Risk management	72.7%	21.2%	3.0%
Human resource management	50.5%	39.4%	6.3%
Legal skills	54.6%	27.3%	5.3%
Customs, import, and export	36.4%	33.3%	12.1%
Transportation management	51.5%	36.4%	6.1%

Inventory and asset management	58.6%	30.3%	4.3%
Warehousing	60.6%	36.4%	3.0%
Purchasing and procurement	54.5%	30.3%	5.7%
Forecasting	57.6%	24.2%	7.1%
Reverse logistics	27.3%	30.3%	3.0%
Port/airport management	21.1%	30.3%	3.0%
Logistics information systems	42.4%	45.5%	2.8%

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