Reconstruction of logistical processes and identification of related challenges during the refugee crisis in Austria in 2015

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Abstract: The Syria refugee crisis caused substantial logistical challenges to European destination and transit countries in 2015. Only little research has been done on the logistical processes and related challenges of refugee crisis, especially in the context of Austria. This study focuses on the logistics of further transportation to Germany and the provision of emergency shelters during the refugee crisis in Austria for the time period of August to December 2015. It reconstructs and describes the transportation process, the ad hoc implementation of emergency shelters as part of the further transportation process and analyzes the communication, cooperation and coordination aspects for transportation and shelter logistics individually. The ultimate aim was to identify the key challenges and propose practical implications for future crises.

For this purpose, a qualitative, exploratory study based on in-depth, semi-structured interviews was conducted. Seven people which were directly involved in the further transportation, the set up of emergency shelters or both were questioned about their experiences and the challenges which needed to be overcome in order to provide a safe passage through Austria to Germany. Comparisons to past crises were drawn and common challenges during humanitarian operations were identified.

Results indicate that lack of preparation, re-establishment of processes from scratch, excessive lead time for certain procedures as well as lack of cooperation and effective communication with other affected European countries and organizations within Austria severely contributed to the aggravated implementation of an efficient flow of refugees through the country. Furthermore, this study emphasizes the crucial role of volunteers throughout the management of the crisis and the substantial use of social media and informal networks, which ultimately contributed to an effective disaster management.

Keywords: refugee, crisis, Austria, humanitarian logistics, emergency shelters, supply chain, transportation, evacuation
# TABLE OF CONTENTS

1 **Introduction** .......................................................................................................................... 5  
1.1 Research problem ...................................................................................................................... 6  
1.2 Aim of study ............................................................................................................................... 7  
1.3 Delimitations ............................................................................................................................. 8  
1.4 Definitions ................................................................................................................................. 9  
1.5 Structure of the thesis ............................................................................................................... 11  

2 **Theoretical framework** ........................................................................................................... 12  
2.1 Humanitarian logistics ............................................................................................................. 12  
2.1.1 Characteristics of humanitarian logistics .......................................................................... 12  
2.1.1.1 Definition of humanitarian logistics ........................................................................... 14  
2.1.2 Challenges in humanitarian logistics .................................................................................. 15  
2.1.3 Evacuation logistics ........................................................................................................... 17  
2.1.4 Provision of shelters .......................................................................................................... 20  
2.1.4.1 Shelters in evacuation context ................................................................................. 20  
2.1.4.2 Shelters in humanitarian context .............................................................................. 21  
2.2 Refugee crises ......................................................................................................................... 22  
2.2.1 What is a refugee crisis? ...................................................................................................... 22  
2.2.2 Humanitarian aid in the context of refugee crises ........................................................... 23  
2.2.3 Past refugee crises in Austria ............................................................................................ 24  
2.2.4 Common logistical challenges ............................................................................................ 29  
2.2.5 Lessons learned from past crises ....................................................................................... 31  

3 **Methodology** ......................................................................................................................... 33  
3.1 Research design ....................................................................................................................... 33  
3.2 Data collection ......................................................................................................................... 33  
3.2.1 Data sample ......................................................................................................................... 34  
3.2.2 Interview ............................................................................................................................. 34  
3.2.2.1 Transcription ................................................................................................................ 37  
3.2.2.2 Translation ..................................................................................................................... 37  
3.2.2.3 Triangulation of data ................................................................................................. 38  
3.2.3 Ethical concerns .................................................................................................................. 38  
3.2.4 Trustworthiness of data ...................................................................................................... 38  
3.3 Data analysis ............................................................................................................................ 39  

4 **Case description: The Syria refugee crisis in Austria in 2015** ............................................. 44  
4.1.1 The refugee situation in Europe ......................................................................................... 44  
4.1.2 The flight route to Austria ................................................................................................... 45
4.1.3 The beginning of the crisis ......................................................... 46

5 Empirical Findings .................................................................. 49

5.1 Further transportation .............................................................. 51
  5.1.1 Description of transportation process ................................... 51
  5.1.2 Coordination and responsibility allocation ............................ 55
    5.1.2.1 Central Transportation Management (ZTM) ...................... 55
  5.1.3 Cooperation during transportation process .............................. 59
  5.1.4 Communication and access to information .............................. 61

5.2 Emergency shelters ................................................................. 63
  5.2.1 Requirements for emergency shelters ................................. 64
  5.2.2 Coordination and distribution ............................................. 66
  5.2.3 Cooperation and support .................................................... 68
    5.2.3.1 The role of volunteers ............................................... 71
  5.2.4 Information flow and the role of social media ...................... 73
  5.2.5 Use of evacuation capacities ............................................. 74

5.3 Comparison to past crises ....................................................... 75

5.4 Suggestions for improvement ................................................ 76

6 Discussion .............................................................................. 79

6.1 Reference from past crises and preparation level ....................... 79
  6.2 Informal communication networks and short-term thinking ......... 80
  6.3 The impact of volunteers and social media .............................. 81
  6.4 Analysis of most important challenges ................................... 83
  6.5 International crisis management on a national level .................. 85

7 Conclusion ............................................................................. 86

7.1 Theoretical implications ......................................................... 86
  7.2 Practical implications .......................................................... 87
  7.3 Impact on society ............................................................... 88
  7.4 Limitations of research ....................................................... 89
  7.5 Suggestions for future research ............................................. 89

REFERENCES ................................................................................ 91

APPENDICES

APPENDIX 1 Interview guide ......................................................... 100
APPENDIX 2 Categorization, abstraction and aggregate dimensioning .... 103
TABLES

Table 1  Categorization of disasters (adapted from Van Wassenhove, 2006) ........... 13
Table 2  Overview of all interviewees (based on data sample, 2019) .................................................................... 35
Table 3  Topics covered during the interviews................................................................................................. 36
Table 4  Structure of findings ............................................................................................................................ 50
Table 5  Responsibility allocation within ZTM (based on findings) .......................................................... 56
Table 6  Description of shelters (based in findings) ......................................................................................... 66
Table 7  Interviewees’ experience in shelter logistics (based on findings) ........................................................... 69
Table 8  Types of volunteers (based on findings) .................................................................................. 71
Table 9  Most mentioned logistical challenges (based on findings) ................................................................. 83

FIGURES

Figure 1  Evacuation stages (adapted from Stepanov and Smith, 2009) ............................................ 18
Figure 2  Evacuation stages (adapted from AIDR, 2017) ........................................................................ 18
Figure 3  Transition of types of shelter (adapted from Kreimer, 1979) ................................................ 21
Figure 4  Number of refugees in transit ....................................................................................................... 28
Figure 5  Overview of analysis and interpretation (adapted from Spiggle, 1994) ............................ 40
Figure 6  Example for analysis (adapted from Spiggle, 1994 and Gioia et al., 2013) .......................... 42
Figure 7  Border crossing vs asylum applications (axis labels as thousands) ....................................... 45
Figure 8  Shift of Balkan routes (adapted from ARC, 2016) ................................................................. 46
Figure 9  Geographical route of “March of Hope” (Google Maps, 2019) ............................................. 48
Figure 10 Routes and entry points in Austria (Google Earth Pro, 2019) ............................................. 52
Figure 11 Illustration of bottleneck (Google Maps, 2019) .................................................................. 53
Figure 12 Examples of social media entries (Ferry Initiative, 2019) ..................................................... 73
LIST OF ABBREVIATIONS

ARC = Austrian Red Cross

BAMF = “Bundesamt für Migration und Flüchtlinge”; Federal Office for Migration and Refugees in Germany

BMI = “Bundesministerium für Inneres”; Ministry of Interior Austria

IDP or DP = (internally) displaced people

IFRC = International Federation of Red Cross and Red Crescent Societies

NGO = Non-governmental organization

ÖBB = “Österreichische Bundesbahnen”; Austrian Federal Railways

SKKM = “Staatliches Krisen- und Katastrophenschutzmanagement”; National Crisis and Disaster Protection Management

SOP = Standard Operating Procedure

UNHCR = United Nations High Commissioner for Refugees; or simply UN Refugee Agency

ZTM = “Zentrales Transportmanagement”; Central Transportation Management
1 INTRODUCTION

With over 70 million refugees worldwide, 2018 marks the year with the highest global displacement since the Second World War (UNHCR, 2019). It is safe to assume that vast refugee movements will become more and more prevalent on a global scale throughout the next decades (Burrows and Kinney, 2016). The reasons for this can be multifaceted ranging from drastic repercussions caused by climate change that potentially turn extended areas into uninhabitable territories to people fleeing from armed conflicts and political persecution as it was the case during the refugee crisis in 2015. During this significant refugee movement approximately one million people, mainly from Syria, Afghanistan and Iraq, fled to Europe in order to seek shelter and protection in 2015. 650,000 of these crossed Austria on their way to their desired destination countries. Austria hereby acted as an important transit country and was consequently faced with severe logistical challenges while intending to provide a safe passage for the incoming refugees to Germany. Humanitarian operations as these are generally critical as relief assistance encompasses providing “the right goods, at the right place, at the right time (before it is too late) for those who need it most” (Tomasini and Van Wassenhove, 2009, p. 549f). Naturally, Austria has a long history in regards to refugee crises and has not only acted as a transit country but also as a destination country as well as country of origin. One would therefore assume that since Austria has been confronted with the same kind of humanitarian disaster multiple times that broad insight and extensive preparation mechanisms might be in place in order to efficiently handle these situations. The question here is to what extent this was confirmed in practice. How was the refugee crisis handled in 2015? Who was responsible and who coordinated these processes? Which were the most important challenges that needed to be overcome and how much was aggravated by lack of preparation? Surprisingly little research has been conducted in this area, not only for the refugee crisis in 2015 but also for previous refugee crises that occurred in or affected Austria within the last 60 years. As the problematic nature of refugee crisis is not likely to subside in the near future, it is essential to study this topic in order to increase preparedness and effective management when a similar crisis were to happen again.

For this purpose, this study will collect and present the experiences and data from important logistical actors during the refugee crisis in Austria with focus on the first year 2015. It will describe and highlight the actions and adapted solutions that were implemented in order to provide the necessary logistics to transport the refugees
throughout Austria to the German border. For this, a qualitative study in the form of in-depth interviews has been done in order to reconstruct the logistical processes and identify the related challenges. At the end of this paper, practical and theoretical implications for more improvement if a similar crisis were to hit Austria again will be presented.

This first chapter explains the research problem, justifies the research gap and the need to study this topic further, describes the overall aim of this thesis, sets delimitations that needed to be implemented due to the extensive scope and provides the most important definitions in order to avoid potential misconceptions related to frequently used terminology.

1.1 Research problem

The organizations and institutions that were responsible for the successful further transportation and temporary sheltering of a vast amount of refugees in Austria during the second half of 2015 were faced with various kinds of challenges that aggravated the logistical processes. Only little research has been done in the context of logistical problems that occurred in the first phases of the refugee crisis in 2015. This study will establish the major challenges that different organizations and actors needed to overcome, discuss how the impact of these obstacles could have been reduced as well as how future operations can consider these from the start in order to avoid redundant handicaps for similar processes in order to enhance preparedness and efficient reactions to comparable events.

The fundamental research questions (RQ) in this context are therefore the following:

RQ 1: Logistics mapping - what did the flow of refugees in Austria from border to border look like and how was transportation conducted during the early phases of the crisis?

RQ 2: What were the main challenges that hindered logistical operations for the set up of emergency shelters and the further transportation of refugees?

RQ 3: What are the main lessons learned that need to be considered for future crises?

An extensive literature review of the relevant literature connected to this topic was conducted in order to establish the main principles and related logistical processes that
can be applied to the refugee crisis in Austria in 2015. For this purpose, the literature review will not only discuss common issues in a humanitarian context, challenges during past refugee crises that took place in Austria and how these compare to the refugee crisis in 2015 but also look at logistical processes connected to mass evacuation and refugee crises in general. Therefore, one focus point will also be on evacuation logistics as these are primarily concerned with transporting a vast amount of people to a certain destination within a timely manner and thus, can also be partly applied to the further transportation processes that took place in Austria in 2015. It stands to reason that similar channels and techniques were possibly used in order to approach the refugee crisis in order to “evacuate” the people from one Austrian border to the next one on the opposite side while providing the basic necessities and shelters throughout the process. Consequently, emergency shelters in an evacuation and humanitarian context will also be discussed.

Literature regarding the logistical challenges during the refugee crisis in Austria is scarce to non-existing so it can be said that this topic represents a relevant research gap that should be explored further in order to conclude important and valuable lessons for the future, not only for a future refugee crisis in Austria but any crisis that takes place in a comparable context.

1.2 Aim of study

This thesis aims to map the logistical flow of refugees in Austria between August and December 2015 and how a functioning logistical network was established under significant time pressure and lack of resources in order to transport the refugees from their entry points in Austria throughout the country to the German border in the West of Austria. The study will aim to illustrate the circumstances for the set up of emergency shelters for the arriving refugees as part of further transportation as well as the process of transportation throughout the country. This study will describe how the further transportation was organized and implemented in order to establish a constant movement of refugees throughout the country and how new logistical channels had to be created within a short period of time under a certain degree of urgency. This description and analysis of the logistical processes will use the qualitative input of some of the main organizations, which were involved during these processes, their contribution and tasks regarding the logistical operations and how coordination, cooperation and communication were handled throughout the first phases of the crisis in 2015. The ultimate aim for this study is to identify the main challenges and severe
weaknesses in the logistics chain that hindered and unnecessarily slowed down the processes causing additional complications. From these, suggestions will be made how the approach could be potentially modified in case another refugee crisis of this extent were to happen again in order to minimize the possible obstacles for all stakeholders involved.

1.3 Delimitations

This study will merely focus on the geographical area of Austria. Other countries that functioned as major actors in terms of managing the refugee crisis in 2015 and onwards will not be included and discussed. The study will include aspects from the neighboring countries to the extent necessary in order to provide a better understanding for the processes within Austria. Also, the countries of origins of this refugee crisis will not be part of this study.

Furthermore, the qualitative study will merely focus on the onward transportation from the point of entry at the Austrian border to the point of exit at the German border. Occurrences after entering Germany or before entering Austria will only be discussed if direct impact on the logistics in Austria is visible. The topic of shelters will only include those that formed a direct component of the further transportation, therefore, long-term shelters will not be part of this study. In this aspect, this will also merely concern the detection of adequate shelters and the time frame within they needed to be established. The sources and origins of any aid supplies that were required in those shelters lies outside the scope of this thesis.

Another point of importance is that this research will merely consider the time frame from August until December 2015 with a special focus on the first weeks until mid-October when Austria was faced with the most severe logistical challenges in the context of this refugee crisis. The main point of interest here is how logistics were established from scratch with insufficient preparation, unclear distribution of responsibility, severe lack of information and ad hoc shelter implementation.

Ultimately, the focus lies only on the primary flight routes as well as entry and exit points in Austria. Small-scale routes and less frequently used entry and exit points will not be discussed. These delimitations were deployed due to the extensive scope of the topic.
1.4 Definitions

This subchapter lists the most important definitions and clarifications for this study in order to avoid any misconceptions or ambiguous meanings in regards to terminology and discussed concepts.

**Asylum seeker**: “individual who is seeking international protection. In countries with individualised procedures, an asylum seeker is someone whose claim has not yet been finally decided on by the country in which he or she has submitted it. Not every asylum seeker will ultimately be recognised as a refugee, but every refugee is initially an asylum seeker” (Amnesty International, 2019).

**Crisis management**: for this thesis, the translated Austrian definition for “catastrophe management” (“Katastrophenmanagement”) according to the BMI (n.d.) will be used: “the entirety of all well-matched measures in the fields of disaster prevention, disaster preparedness, disaster overcoming and recovery after disasters, including a continuous evaluation of the measures taken in those areas”.

**Displaced people/displacement**: Displacement of people is defined as “forced movement of people from their locality or environment and occupational activities. It is a form of social change caused by a number of factors, the most common being armed conflict. Natural disasters, famine, development and economic changes may also be a cause of displacement” (UNESCO, 2017).

**Internally displaced people (IDP)**: “persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized state border” (UN Guiding Principles on Internal Displacement, 2004, p.1).

**Humanitarian logistics**: “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, customs and clearance” (Thomas and Kopczak, 2005, p. 2).
**Humanitarian crisis/disaster:** “when the human, physical, economic or environmental damage from an event, or series of events, overwhelms a community’s capacity to cope” (World Vision International, 2019).

**Humanitarian operation:** in this thesis, the definition for “humanitarian action” will be used, namely, “provides life-saving services and facilitates the return to normalcy for people and communities affected by natural and man-made disasters. It also seeks to lessen the destructive impact of disasters and complex emergencies. Humanitarian response is guided by the principles of humanity, impartiality, neutrality and independence, which provide a common framework for organizations involved in humanitarian action” (Peace Operations Training Institute, 2017, p. 15).

**Initial reception:** for this term, the definition of “first-line reception” will be used throughout this thesis: “Initial stage of reception (hosting, identification, medical screening) of newly arrived refugees and migrants” (Asylum Information Database (AIDA), 2016, p. 5).

**Migrant:** “someone who changes his or her country of usual residence, irrespective of the reason for migration or legal status“ (United Nations, 2019).

**Refugee:** “someone who is unable or unwilling to return to their country of origin owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion“ (UNHCR, 2011). For reasons of simplicity, in this thesis the term “refugee” will refer to all people entering Austria in the contemplated time period of 2015 who claimed to be refugees independent of their factual qualification as a refugee.

**Refugee crisis:** In this thesis, the term “refugee crisis”, if not further specified, refers to the early stages of the refugee crisis that took place during the period of August to December 2015 in Austria.

**Stateless person:** someone “who is not considered as a national by any State under operation of its law“ (UN General Assembly, 1954, p. 136).

**Vulnerability:** “diminished capacity of an individual or group to anticipate, cope with, resist and recover from the impact of a natural or man-made hazard” (IFRC, 2019).
1.5 Structure of the thesis

The thesis is structured as follows:

First, the topic is introduced, the research gap and research problems are explained and justified. The aim of the study is illustrated as well as the necessary delimitations that were deployed in order to narrow the scope. The first chapter ends with a provision of the most important definitions for specific terms that will be used throughout this paper.

The second chapter constitutes the theoretical framework and provides insight into characteristics and challenges in humanitarian operations and the related logistical challenges with a special focus on evacuation logistics and shelters. It further describes specifics in regards to refugee crisis and gives an insight into the past refugee crisis Austria has been confronted with.

The third chapter describes the methods that were implemented for data collection and data analysis. It further describes any ethical concerns and the trustworthiness of the research findings.

The fourth chapter provides an overview of the refugee crisis from 2015, the overall refugee situation in Europe during the studied time period, the chronological processes on how the refugee crisis developed and the routes that were taken in order to arrive in Austria for transit.

The fifth chapter presents the results that were obtained during the data collection. The results will be presented in two main categories, namely further transportation and shelter logistics. For each category, the topics of communication, cooperation and coordination will be illustrated. The chapter finishes with a brief comparison to past refugee crisis in Austria and a short list of suggestions for improvement of logistical processes as proposed by the interviewees.

Chapter six discusses the findings obtained and compares these to the information provided within the theoretical framework for this topic in order to identify the contribution to academic literature.

The last chapter, chapter seven, summarizes the most important findings and gives theoretical and practical implications. Suggestions for future research are provided and the impact on society and the environment are illustrated.
2 THEORETICAL FRAMEWORK

The following literature review will first give an overview of the characteristics of humanitarian logistics, the differences to other kinds of supply chains as well as describe the related challenges during a humanitarian operation. Thereafter, the topic of evacuation logistics will be illustrated. Subsequently, the topic of shelter logistics in a humanitarian and evacuation context will be discussed. As the further transportation in the form of mass transportation can be said to have important parallels to evacuation logistics, these insights will help to better understand the underlying problems and challenges connected to the logistical processes during the refugee crisis. In the further course of this chapter, refugee crises as well as the current refugee situation from a humanitarian perspective will be illustrated. Thereafter, a short description and overview of the past refugee crises that affected Austria since 1955 is given and put into comparison with the refugee crisis in 2015. Subsequently, the major challenges and lessons learned of these past crises and the 2015 crisis will be shortly discussed. This will later help compare whether the same obstacles and challenges emerged in the findings of this study and whether the involved actors took the past experiences into consideration during the decision-making and implementation processes for the 2015 crisis.

2.1 Humanitarian logistics

A refugee crisis is a humanitarian crisis that requires humanitarian logistics in order to provide relief and aid. The following section will therefore give an introduction into the specifics of the logistical processes that are implemented in the course of a humanitarian operation. The following paragraphs will provide information on what characterizes humanitarian logistics, a definition for this type of logistics, how it differs from common commercial and military supply chain systems and which major challenges humanitarian actors are usually faced with when implementing logistics in order to provide humanitarian assistance.

2.1.1 Characteristics of humanitarian logistics

The total amount as well as the magnitude of humanitarian disasters have steadily increased since the 1950s. As a result, an average of 235 million people per year were negatively affected by the impact of these calamities since the 1990s (Boonmee et al., 2017). Humanitarian logistics aim at alleviating the impact of the occurrence of such a
disaster. Crises put existing emergency systems to the test and challenge how well various organizations can cooperate together in order to provide disaster relief (Tomasini and Van Wassenhove, 2009). Most humanitarian crises are results of either natural disasters or conflicts (Margesson, 2013). Logistics forms a major part of any kind of humanitarian assistance in order to assist during a crisis (Zhang et al., 2013; Thomas and Kopzak, 2005). As it involves functions such as transportation and procurement it is also the most cost-intensive part of any humanitarian operation (Van Wassenhove, 2006). Goods such as food, water, medicine and other necessities need to be transported from storage to the operational area in a timely matter (Zhang et al, 2013). One major obstacle here is the adequate route selection in order to transport not only goods but also people, taking into consideration factors such as costs and time (Davidich & Köster, 2012; Heliövaara et al., 2012). Constrains in financial terms but also regarding available resources and processes further aggravate successful logistical implementation (Holguín-Veras et al., 2012; Van Wassenhove and Pedroza Martinez, 2012).

The implementation of humanitarian logistics requires different actors, such as the military forces, humanitarian organizations, the government and civilian population to closely cooperate and unite their capabilities as well as their resources over an uncertain period of time (Tomasini et al., 2009). Nevertheless, disaster relief is normally initiated by on-site systems which consist of local governmental authorities, locally based and represented NGOs and National Red Cross and Red Crescent Societies, military forces, fire departments, the police as well as civil authorities (according to Pedroza Martinez et al., 2009 as stated by Van Wassenhove and Petraza Martinez, 2012). Humanitarian crises can be categorized by the cause of the crisis, which can be natural or man-made as well as by the speed of occurrence, meaning there are slow on-set or sudden on-set crises (Van Wassenhove, 2006). The following table 1 gives a short overview of the different types of crises:

<table>
<thead>
<tr>
<th></th>
<th>Sudden-onset</th>
<th>Slow-onset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural cause</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hurricane</td>
<td></td>
<td>Famine</td>
</tr>
<tr>
<td>Tornadoes</td>
<td></td>
<td>Drought</td>
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<td>Earthquake</td>
<td></td>
<td>Poverty</td>
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<tr>
<td>Man-made cause</td>
<td></td>
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<tr>
<td>Chemical leak</td>
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<td>Political crisis</td>
</tr>
<tr>
<td>Coup d'Etat</td>
<td></td>
<td>Refugee crisis</td>
</tr>
<tr>
<td>Terrorist attack</td>
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</tbody>
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*Table 1 Categorization of disasters (adapted from Van Wassenhove, 2006)*
Sudden on-set disasters usually have severe negative effects on existing infrastructure which consequently impacts transportation, communication and electricity (Barbarosoğlu et al., 2002) and require more agile supply chains in order to reduce response time (Oloruntoba and Gray, 2006). Operations dealing with slow on-set disasters, on the other hand, enable a certain degree of forecasting and planning (Jahre and Heigh, 2008) and are more concerned with cost-effectiveness (Oloruntoba and Gray, 2006). As can be seen from table 1, according to Van Wassenhove (2006) a refugee crisis is classified as a man-made disaster with a slow-onset.

2.1.1.1 Definition of humanitarian logistics

Taking the above mentioned characteristics into account, humanitarian logistics can be defined as “the process of planning, implementing and controlling the flow and storage of goods and materials as well as related information, from point of origin to point of emergency, for the purpose of meeting the end beneficiary’s requirements” (Van der Laan et al., 2009, p. 365) with the main objective of alleviating “urgent needs of a population with a sustainable reduction of their vulnerability in the shortest amount of time and with the least amount of resources” (Van Wassenhove, 2006, p. 480). A more specific definition was provided by Thomas and Kopczak (2005, p. 2) with humanitarian logistics being “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, customs and clearance”. In comparison to the former definition, the latter one emphasizes the vulnerable context in which humanitarian organizations operate as humanitarian logistics are not merely implemented in order to “meet the end beneficiary’s requirements” but more specifically to mitigate “the suffering of vulnerable people”. Furthermore, it also highlights the need for efficiency and cost-effectiveness in order to quickly provide the urgent disaster relief. Nevertheless, it should be noted that even if financial constraints are a common challenge (partly due to an initially uncertain amount of donations during humanitarian operations) (Van der Laan et al., 2016; Tomasini and Van Wassenhove, 2009), high costs during the immediate response phase may be accepted in order to provide prompt relief (Tomasini and Van Wassenhove, 2009).
2.1.2 Challenges in humanitarian logistics

This section will shortly explain the major differences between humanitarian logistics compared to commercial and military logistics in order highlight the most important challenges that usually occur during disaster relief operations. The purpose is to provide a better understanding on why humanitarian supply chains are rather delicate in terms of implementation compared to their commercial counterparts. This will emphasize the aggravated circumstances compared to common supply chain management in which humanitarian actors, also the ones assisting during the refugee crisis in Austria in 2015, need to operate in. Due to the cooperation with the Austrian military forces during the refugee crisis, this subchapter will also shed some light on potential discrepancies in the way of operating between humanitarian organizations and the military.

Logistics in a humanitarian context strongly differentiates from commercial or military supply chains. In a humanitarian context, demand and supply are subject to dynamic changes and often uncertain due to lack of information (Van Wassenhove and Pedraza Martinez, 2012; Van Wassenhove, 2006). This uncertainty often requires apparent redundant actions, such as safety storage in different places for quick access or sending material through various routes (Van Wassenhove and Pedraza Martinez, 2012). Moreover, local government and civil society might not be in favor of the humanitarian operation which can lead to additional challenges while operating (Tomasini and Van Wassenhove, 2009). During natural disasters, inaccessibility or poor construction of infrastructure and transportation hubs as well as poorly skilled staff can further exacerbate disaster relief (Van Wassenhove and Pedraza Martinez, 2012; Zhang et al., 2013; Van Wassenhove, 2006).

One important distinction to military supply chains is the command and control structure. While these are rather strict and clearly defined for the military, humanitarian operations often deploy volunteer workers as well as other actors with each having their own motivation and objectives (Van Wassenhove and Pedraza Martinez, 2012). Especially the fundamental principles of humanitarian operations, namely, neutrality, humanity and impartiality might be threatened by having various actors with diverse backgrounds operating together in one crisis (Tomasini et al., 2009). Also, display of cultural indiscretion and lack of respect towards a population’s social structure are advisable to avoid, however, this might contradict usual ways of working of non-humanitarian organizations (Tomasini and Van Wassenhove, 2009).
The issue with human resources is also critical. Humanitarian operations often lack qualified staff that can be deployed and trained on short notice. The human resource aspect is commonly subject to significant staff turnover operating in uncoordinated and irregular circumstances (Van Wassenhove and Pedraza Martinez, 2012; Tomasini and Van Wassenhove, 2009; Van Wassenhove, 2006; Thomas and Kopczak, 2005). Consequently, due to high personnel rotation, acquired tacit knowledge and insight often go astray (Kovács and Spens, 2009).

The nature of the pursued targets of humanitarian logistics compared to commercial logistics is quite divergent (Holguín-Veras et al., 2012). For instance, in the previously stated definition provided by Thomas and Kopzak (2005), one important discrepancy compared to commercial supply chains is that the profit aspect is not mentioned. Instead of focusing on profit, humanitarian logistics are aimed at reaching an equilibrium between costs and velocity while providing the urgently needed goods and support in a timely and adequate manner (Tomasini and Van Wassenhove, 2009). The focus on the reduction of costs commonly gains in importance throughout the humanitarian operation after the basic logistics and allocation of tasks have been established. After this stage, the humanitarian and commercial supply chain are more aligned in their characteristics (ibid).

Accurate forecasting is considered crucial for successful operational management of commercial supply chains (Olivia and Watson, 2009). Demand prognosis with limited information in a humanitarian context is only possible to some degree, yet, due to the hazardous circumstances of a disaster and constraints in financial resources, accurate forecasting can be considered to be of even greater importance for humanitarian logistics than commercial logistics (Van der Laan et al., 2016). These financial constraints also often impede humanitarian organizations from preliminary positioning relief supplies in order to ensure availability (Van Wassenhove and Pedraza Martinez, 2012). In addition, the forecasting techniques need to display flexibility as circumstances in a humanitarian context are usually dynamic and subject to continuous change (ibid). On the other hand, long-term operations offer a possibility for improved and more accurate demand forecasting which in turn results in lower costs, decreased time investment and prevents severe fluctuations in inventory (Van der Laan et al., 2016).

Other challenges include, for instance, restricted access to technology and software tools (Van der Laan et al., 2009) and consequently retrieval, storage, distribution and
analysis of field data (Van Wassenhove and Pedraza Martinez, 2012) which would help to adapt and advance the supply chain throughout the operation as especially standard procedures and performance indicators are often not available (Thomas and Kopczak, 2005).

Needless to say, every disaster whether it is of natural or man-made cause is different and requires an adjusted approach to disaster relief. Implementing logistical processes strongly depends on the geographical area where a crisis takes place, whether the disaster occurs with a sudden or slow on-set, cultural factors, availability of local suppliers, etc (Dash et al., 2013). However, it is critical to identify any potential for standardized procedures in terms of type of goods, warehousing and transportation methods as far as possible and suitable. This would consequently lead to increased supply chain resilience (Merminod et al., 2014).

2.1.3 Evacuation logistics

Evacuation depicts the movement of people in case safety is potentially jeopardized (Na et al., 2012) and forms an essential component of crisis management (Cova and Johnson, 2003). As evacuation essentially deals with transporting a vast amount of people within a timely manner from A to B, it is comparable to the further transportation processes during the refugee crisis. Also, when institutions or organizations attempt to provide shelters or establish transportation channels for a vast amount of people, it stands to reason that for this issue existing facilities and logistics that are usually meant for evacuation could be utilized. Therefore, the following subchapter will give an overview of the most important aspects of evacuation logistics followed by the provision of shelters which forms an essential part in evacuation and humanitarian logistics.

Evacuation processes can range from small to large dimensions (Bish and Sherali, 2013). A small-scale evacuation is conducted on a building-level while a large-scale evacuation exceeds normal evacuation procedures of people from buildings and encompasses the volumes of cities or even countries (Wang and Sun, 2014; Kunwar et al., 2014). According to this, the refugee crisis in 2015 would therefore be comparable to a large-scale evacuation in terms of logistics as evacuation procedures involved transportation through Austria and the total amount of “evacuees” accumulated to the high amount of approximately 650,000 refugees (ARC, 2016). Similarly to this, evacuation can be viewed from two perspectives: the microscopic and the macroscopic.
The former considers the evacuation situation from the level of an individual person and the individual's conduct during the emergency process which permits a more detailed planning closer to real-life circumstances. Nevertheless, this point of view hinders the possibility for optimizing the processes. The macroscopic view, on the other hand, observes the evacuation from a broad approach with less attention to details which thus enables the use of simplified models in order to improve and optimize the procedure (Goerigk et al., 2014).

The evacuation can be initiated without prior warning (no-notice) requiring immediate evacuation or a warning shortly before evacuation (pre-warned) permitting some time to plan (Hsu and Peeta, 2012). Decision-making involves the date of evacuation, the destination and the related distance to it, choice of transportation mode, amount of required vehicles, route selection, assessment of infrastructure accessibility and choice of shelter. Furthermore, the duration and cost of evacuation need to be evaluated. In order to be able to estimate these aspects, the number of households or people that have to be evacuated must be ascertained (Lindell et al., 2011). The logistical factor of transportation is crucial for evacuation. Efficient evacuation relies on various aspects such as time between warning and response, distribution of information and directives, route selection as well as possible congestion (Pel et al., 2012).

The evacuation process consists of several phases. Stepanov and Smith (2009) separated these into detection of incident, issuing of evacuation order and delivering it to the public (warning), preparation for evacuation, movement through the network, arrival at safety shelters and verification (see figure 1). Similar to this, the Australian evacuation process model consists of the decision to evacuate, warning, withdrawal, shelter and return (Australian Institute for Disaster Resilience (AIDR), 2017) (figure 2).

![Figure 1](image1.png)  
**Figure 1** Evacuation stages (adapted from Stepanov and Smith, 2009)

![Figure 2](image2.png)  
**Figure 2** Evacuation stages (adapted from AIDR, 2017)

In figures 1 and 2 the stages have been put into comparison by marking the comparable steps with the same colors. The evacuation steps proposed by Stepanov and Smith (2009) shows a more detailed process compared to the Australian Institute for Disaster Resilience. However, as can be seen from the figures, the last step for both does not
constitute the same process as verification according to Stepanov and Smith (2009) refers to the confirmations that all evacuees have been transported to safety zones while the return stage according to AIDR (2017) indicates the step after the reason for evacuation has subsided and it is safe for the evacuees to return back home.

Successful evacuation can be aggravated as these disaster conditions tend to be chaotic, hard to control and communication together with instruction format can collapse. Apart from that, human conduct can be unpredictable (Lumbroso et al., 2008). In order to mitigate delays and damage it is vital to have adequate evacuation policies adjusted to the area exposed to risk in place for an emergency situation (Stepanov and Smith, 2009; Jafari, 2005). An elaborate preparation also considers role and responsibility allocation (Piatyszek and Katagiannis, 2012). By simulating possible evacuation scenarios depending on the emergency, evacuation plans can be re-evaluated and subsequently improved (Jafari, 2005). Additionally, proactive modeling and planning can uncover potential bottlenecks related to transportation and other unforeseeable incidents that have the potential to hamper evacuation (Lumbroso et al., 2008). However, the planning needs to consider all distributable resources and available infrastructure and must be realizable within the shortest possible time period (Piatyszek and Katagiannis, 2012). During evacuation, demand for means of transportation due to mass movement of people can quickly exceed availability of aforementioned (Hsu and Peeta, 2012).

Evacuation plans using buses as a main mean of transportation require certain pick-up points from which the evacuees then need to be collected and transported to their safe shelters. These buses are commonly operated on a continuous level as lack of resources is usually a problem. Consequently, this also requires to have efficient operational plans in place in order to use the scarce bus resource most effectively. Potential problems might arise in terms of time constraints caused, for instance, by divergent times when people present themselves at the pickup points, the transportation duration to the safe points as well as the geographical locations of these pickup points (Bolia, 2019). The topic of fleet management (in this context the management of buses) is particularly important for this study as buses became the main mean of transportation during the refugee crisis in 2015.
2.1.4 Provision of shelters

Shelters form a crucial part in evacuation logistics (Lindell and Prater, 2007) and during disaster management in a humanitarian context (Boonmee et al., 2017). As one major aspect of this research lies on the implementation of emergency shelters under time pressure, the topic of shelters in a humanitarian context needs to be discussed. Therefore, the provision of shelters will be shortly illustrated for evacuation and humanitarian logistics separately in this subchapter. In addition to that, challenges related to the rapid set up of emergency shelters will be highlighted. This will provide a basic understanding of the procedures which will later help comprehend the circumstances under which shelters needed to be provided as part of the further transportation during the refugee crisis in Austria.

2.1.4.1 Shelters in evacuation context

In evacuation logistics, the distance to the evacuated or risk area is important. In this sense, two types of shelters can be identified, namely, proximate and ultimate choices (Lindell and Prater, 2007). Shelters in proximate destinations are usually considered as preliminary (Lim et al., 2013) just outside the risk area with a location that is soonest (in timely matters), easiest (lowest costs) and nearest (geographically closest) to reach (according to Barret et al., 2000 as stated by Lindell and Prater, 2007). In contrast, ultimate destinations are commonly sought to escape from the evacuated area for an extended period of time (Lim et al., 2013).

As modeling studies imply, well-suited shelters can be found in the form of public buildings which provide sufficient space to hold a large number of people and which are well connected to infrastructure in order to provide humanitarian aid (Campos et al., 2012). For this purpose, especially buildings such as, e.g. sports halls, schools and universities as well as medical facilities are suitable shelters as they can accommodate a substantial amount of evacuees (Stepanov and Smith, 2009).

Important to mention here is that effective evacuation planning needs to consider aspects such as demand inflation and supply deflation. Demand inflation in this context refers to a sudden and unplanned rise in the total number of evacuees which potentially leads to insufficient shelter capacities and ultimately, turmoil as well as congested networks. Supply deflation, on the other hand, may be caused by overcrowded infrastructure, meaning that the supply, as it had been considered during the planning phase, is not available to the estimated extent (Ng and Waller, 2010). Further
challenges concern the efficient distribution among the available shelters for a large-scale evacuation (Lindell et al., 2011). Overcrowded shelters which had not been assigned a maximum number of people during the planning phase might eventually result in a secondary evacuation due to overload (Lim et al., 2013).

2.1.4.2 Shelters in humanitarian context

As has been discussed in a previous chapter, humanitarian disasters can be categorized by their speed of occurrence, namely, sudden and slow onset disasters (Van Wassenhove, 2006). Slow-onset disasters allow a certain degree of forecasting and planning (Jahre and Heigh, 2008) which also touches upon the set up and preparation of shelters.

Shelters can be classified according to the length of stay. From this, three categories evolve: emergency, temporary and permanent. After a major disaster has hit, emergency shelters are commonly set up for an urgent need over a very short period of time. The costs for these emergency shelters are strongly dependant on the country and the exact type of shelter that is being used. Temporary shelters are set up for a limited time period until the people accommodated in this kind of shelter have, for instance, received sufficient funds to relocate. Lastly, permanent shelters are established for a substantially longer period of time. This requires adherence to legal regulations (e.g. the right to occupy a piece of land), higher standards in terms of, for instance, sanitation, sufficient infrastructure as well as certain institutions and services such as schools and health care (Kreimer, 1979).

Figure 3 illustrates the movement from an initially permanent home to different kinds of shelters after a disaster. The degree of permanence rises with the length of stay in the shelter.

![Figure 3](image-url)
Similarly to evacuation shelters, shelters in a humanitarian context are often repurposed facilities, e.g. arenas, schools, gyms. The task and also the challenge lies in turning these buildings into shelters including the necessary resources and provision of humanitarian aid to enable certain standard for the disaster victims (Nappi and Souza, 2015). Tents have a long history in humanitarian operations in the form of shelters. However, in the past, tents were often unsuitable for emergency shelters due to logistical complications caused, for instance, by the substantial weight and rigid tent structure. If tents were used, humanitarian organizations would often only send the tarpaulin for facilitated transportation but this would be at the expense of e.g. the environment as trees needed to be chopped to support it. Due to these challenges, the design of tents has drastically evolved in technical and logistical aspects in order to properly function as emergency shelters (Fredriksen, 2014). Currently, the UNHCR is primarily responsible for the provision of large-scale tents in most crises. Additionally, UNICEF supplies tents in two sizes, namely, 24 m² and 72 m² (UNICEF, 2012). Approximately 900 tents were used by the Austrian Red Cross during the refugee crisis in 2015 onwards (ARC, 2016).

Decisions regarding location, choice of shelter, capacity and other vital aspects are ideally conducted during the pre-disaster planning phase (Nappi and Souza, 2015). Common challenges, apart from those which are characteristic for humanitarian operations, include the provision of certain standards and acceptable living conditions (Bashawri et al., 2014; Zetter und Deikun, 2011). This is particularly demanding when humanitarian actors see themselves faced with a vast number of affected people connected with dense distribution over an extended area (Zetter und Deikun, 2011). Currently, many DPs are affected by lack of housing or inadequate conditions (Bashawri et al., 2014; Zetter und Deikun, 2011).

2.2 Refugee crises

The following subchapter will give an insight to the current refugee situation as well as present attributes of a refugee crisis in order to enlighten the humanitarian context of refugee crises and logistical implications connected to it.

2.2.1 What is a refugee crisis?

According to the 1951 UNHCR Convention and Protocol Relating to the Status of Refugees, a “refugee” is defined as:
“someone who is unable or unwilling to return to their country of origin owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion” (UNHCR, 2011, p.3)

Refugees are considered a vulnerable group (Salehayn, 2019; Campion, 2018). In 2018, the UNHCR stated that the highest amount of globally displaced people since the Second World War (Hangartner et al., 2019) was reached, namely, 68.5 million which includes international refugees as well as IDP. This number includes 40 million IDP, 10 million stateless people and 3.1 million asylum seekers. 25.4 million are refugees with more than 50% of them being under age. Due to persecution or war, one person is forcibly displaced every two seconds. 57% of the worldwide refugees come from South Sudan, Afghanistan and Syria with the latest having the highest amount with 6.3 million refugees (UNHCR, 2018). Forced migration is considered a severe problem on a global scale. The immense flow of refugees globally effect international security, the economic system worldwide as well as politics in not only origin but also destination countries of the refugees (Salehyan, 2019).

The protection of refugees on an international level has a long history, yet the term “protection” itself has never been clearly defined. It has been more specified as e.g. legal or political protection. The UNHCR Statute refers to it as “international protection”. Apart from that, although the protection of refugees is supposed to be a non-political and merely humanitarian matter, problems can arise in the triangle consisting of mass movement of people, international solidarity and sense of obligation. While governments and organizations struggle with accurate responsiveness to the movements, appropriate decision-making, definition and implementation of strategic and tactical actions or the management of the whole process, the human rights perspective related to the mass movement is consequently losing importance. Ultimately, this leads to governments taking “defensive measures” in the name of security (Goodwin-Gill, 2001).

2.2.2 Humanitarian aid in the context of refugee crises

When a state sees itself confronted with the issue of providing aid and asylum to a vast amount of refugees, certain aspects that form part of the logistics process seem to pose a challenge when addressing and remedying the on-going plight. These problematic areas include but are not limited to poor organization of the logistics process, unclear
leadership responsibilities, lack of collaboration and unpredictability of the exact circumstances of the crisis (Goodwin-Gill, 2001).

During a refugee crisis certain humanitarian aspects need to be considered in order to deal with the consequences and to minimize its negative impacts during the relief operations. These factors include, for instance, what kind of humanitarian assistance is appropriate, the influence on regional stability caused by the nature of the conflict as well as the potentially vast flow of refugees, and the support of neighboring countries during the humanitarian operations. The severity of a refugee crisis can be scaled depending on the dimension of population movement, devastation of communities and social networks, the extent of human rights abuse, and endangerment of civilians (Margesson, 2013).

The responsibilities in regards to providing humanitarian aid and logistics during a crisis like this are usually split between various organizations. A single organization having the full responsibility would lead to a monopole from which corruptive behavior, denial of liability and oblivion to peoples’ demands might originate (Goodwin-Gill, 2001).

2.2.3 Past refugee crises in Austria

Reprocessing of contemporary history and Austrian security policy especially after 1955 (the year when Austria declared neutrality and independence) remains inchoate (Schmidl und Engelke, 2003). Past events in Austria’s history have shown Austria to be not only a country of emigration but especially a country of immigration and a transit country. Throughout history, Austria has acted as country of origin as well as country of destination for economically motivated migration and refugees fleeing from war and prosecution (Bauböck and Perchinig, 2003; Bauböck, 1996). In order to categorize and compare the magnitude of the 2015 crisis, it is essential to put it into perspective with the previous refugee crises. This chapter will therefore illustrate the past refugee crisis that Austria had been faced with prior to the 2015 crisis and discuss common challenges of these crises. Lastly, the current state of lessons learned will be presented at the end of this chapter.

After 1945, Austria became an important transit country for refugees, in particular for those coming from the East providing mostly merely short-term protection (Stacher, 2000). Between 1945 and 1990, approximately 650,000 refugees travelled via Austria.
to the West (Bauer, 2008). Four major groups of refugees from the East fled to or via Austria to the West between 1955 and 1989, namely, Hungarians, Czechoslovakians, Polish and Jewish from the Soviet Union (Bauböck, 1996). The individual refugee crises are characterized by phases of rejection of refugees, forwarding, temporary admission and permanent integration. All of these crises were dealt with differently and Austria’s approach, tools and interests varied from crisis to crisis (ibid). It should be noted here that the exact circumstances of how these crisis were caused in their respective countries or areas are not being discussed as this would exceed the scope of this thesis. Consequently, the topic of interest in this aspect will merely be the refugee movements and the atmosphere under which these were received by the Austrian population.

**The Hungary crisis in 1956/1957:**

The revolution and occupation by the Soviets caused the Hungarian crisis in 1956. On November 4th, 1956 the Soviet intervention and counterinsurgency caused the first significant refugee movement after Austria’s declaration of independence in 1955 (Schmidl und Engelke, 2003). This refugee crisis constitutes the biggest performance test and proof of loyalty towards the West for the newly independent Austrian republic in the eyes of the world (Bauböck and Perchinig, 2003; Bauböck, 1996). A vast amount of refugees crossed the borders to Austria on foot within a short period of time and the atmosphere was mostly welcoming and obliging (Bauböck, 1996). However, it should also be noted that the welcoming receptiveness was strongly tied to the expectation of the refugees returning to Hungary once the upheaval had subsided. In total, 180,000 refugees from Hungary had fled to Austria (mostly for transit) (Bauer, 2008; Stacher, 2000; Bauböck, 1996; Jäger, 1993) and most of them within a short period of time (Bauböck, 1996). A mere ten per cent (18,000) stayed permanently (ÖIF, 2015; according to Zierer, 1995 as cited by Bauböck, 1996).

**The Czechoslovakia crisis in 1968**

The “Prague Spring” depicts a migration movement which was caused by the march-in of the troops of the Warsaw pact into Czechoslovakia on 21st of August, 1968. The borders were closed in October 1969 (Bauböck, 1996). Within this one year, a total of 162,000 Czechoslovakian refugees had entered Austria between 21st of August and 23rd of October 1968 (Bauer, 2008; IOfM, 2003; Stacher, 2000; Bauböck, 1996) but in relation to that only a minority (4,176 applications in 1968 and 6,529 in 1969) had applied for asylum (according to Vales, 1995 as cited by Bauböck, 1996). Approximately
129,000 refugees returned home and the majority of the rest continued to other countries (IOfM, 2003). In total, only 12,000 stayed in Austria permanently (Bauer, 2008; Jäger, 1993). The low number of applications can be explained as, on the one hand, the Czechoslovakian refugees often decided to wait out further events before applying for asylum. On the other hand, they constituted welcomed workforce even without a valid asylum status (Bauböck, 1996).

**The Poland crisis 1981/1982**

The declaration of martial law in Poland on 13\textsuperscript{th} of December, 1981 caused a migration movement of Polish people to countries such as Austria although it is noteworthy to say that the highest inrush of Polish occurred even before this specific event. Many Polish had left their relatives behind in order to keep the option of an early return open or to have them follow to Austria at a later date (Bauböck, 1996).

Approximately, 120,000 (Bauer, 2008) to 150,000 (Stacher, 2000) Polish people had fled to Austria at the turn of the year between 1981 and 1982 (Bauböck, 1996). In contrast to the labor situation the Czechoslovakian refugees had encountered, the percentage of foreign workforce was being gradually reduced between 1981 and 1984 which aggravated the circumstances for the Polish people compared to the Czechoslovakians (Bauer, 2008). Consequently, a higher percentage (represented by a total of 33,000 Polish refugees) compared to the Czechoslovakia crisis ultimately applied for asylum (Stacher, 2000; Jäger, 1993; according to Faßmann and Heinz, 1995 as cited by Bauböck, 1996). By 1983, only 4,000 Polish people remained in Austria (IOfM, 2003) as Austria had again functioned mainly as a transit country. The majority of the refugees that passed through Austria mostly continued further to the U.S., Canada or Australia (Bauer, 2008).

Interestingly, the respective refugee movements during the Czechoslovakia and Poland crisis each extended over a substantial period of time. Due to this, they can be described more as cumulative movement of individuals than a collective mass movement of a vast amount of refugees as it was the case during the Hungary crisis (Bauböck, 1996).

Throughout the years of the Czechoslovakia and Poland crisis, the refugees coming to Austria were perceived less and less as victims of suppressed Stalinism and persecuted freedom fighters in the eyes of the Austrian public which consequently caused the
willingness to help and support to decrease substantially over time (Bauböck, 1996). By the time Romanians fled to Austria at the turn of the year of 1989 to 1990, the welcoming receptiveness had shifted to overt disapproval (Bauer, 2008; Bauböck, 1996; Jäger, 1993).

**The Yugoslavia wars 1992-1999**

The collapse of Yugoslavia and the subsequent shooting wars in Croatia, Bosnia-Herzegovina and Kosovo caused the biggest refugee movements in Europe after the Second World War at that time (Bauer, 2008). Simultaneously, Austria implemented more restrictive asylum laws in order to make itself be perceived as less attractive for asylum applications (Bauböck and Perchinig, 2003).

During the Bosnia crisis, Austria’s original role of being a transit country shifted dramatically to becoming a host country for refugees (Stacher, 2000). Between April and July 1992, the Bosnia-Herzegovina wars caused roughly 700,000 refugees to seek shelter in Europe (IOfM, 2003). About 95% of these refugees sought refuge in only six countries in Europe, namely, Austria, Germany, Denmark, Netherlands, Sweden and Switzerland. The inadequate distribution of refugees across Europe uncovered lack of solidarity and unity (Stacher, 2000) similarly to the 2015 refugee crisis (Schneider, 2016). In 1992, the refugee influx peaked when about 50,000 refugees had fled to Austria (Stacher, 2000). Until 1995, 90,000 (95,000 according to Stacher, 2000) were granted a temporary protection and preliminary right of residence in Austria, yet this right was not fully compliant with the refugee status proposed by the Geneva Convention of Refugees (“de-facto Flüchtlinge” or “de facto refugees”, p.7) (Bauer, 2008). About 10,000 of these resettled to different countries and another 10,000 returned to Bosnia-Herzegovina (Stacher, 2000).

In March 1998, the Southern region of Serbia, Kosovo, experienced conflicts between the Albanian majority population and the Serbians which caused 350,000 people to flee their homes (IOfM, 2003). In 1998 and 1999 about 13,000 Yugoslavians (mainly Kosovars) applied for asylum in Austria (Bauer, 2008).

As this thesis intends to compare the 2015 crisis with past refugee crises, it appears valuable to put the 2015 crisis into perspective together with the past crises where Austria had also functioned as a transit country in order to gain an impression on how to categorize the magnitude of the 2015 refugee crisis in Austria (see figure 4).
general, it is challenging to present comparable numbers as the duration of the refugee crisis, its respective peak and the related distribution of the refugee inflow across a specific time period play a crucial role in terms of logistical challenges.

Figure 4 displays the amounts of the total number of refugees that entered Austria primarily as a transit country (for this reason, the Yugoslavia wars are not presented here as Austria was more of a destination country during those) as well as the amount of asylum applications. The numbers come from the information given above. In order to provide comparability, only the peaks of the crises are being displayed in this graph (as far as concrete numbers were available).

The axis of ordinate (y) indicates the number of refugees; the axis of abscissas (x) indicates the individual refugee crisis. The crises have been labeled with the following abbreviations: HNG...Hungary crisis; CSR...Czechoslovakia crisis; POL...Poland crisis and SYR...Syria crisis.

**Figure 4 Number of refugees in transit**

HNG: the amount of refugee entries and asylum applications refer to the total amount for the years 1956 and 1957.

CSR: the amount of refugee entries refers to the amount that entered Austria within a time period of two months in summer 1968 and the amount of asylum applications is only for the year 1968.
POL: the amount of refugee entries as well as the asylum applications refer to the amount that entered Austria during the turn of the year in 1981 to 1982.

SYR: the amount of refugee entries refers to the number that entered Austria (mostly for transit) between August and December 2015 (roughly 650,000 according to ARC, 2016); the asylum applications (51,000 applications according to BMI, 2015) represent the total amount for the same time period (here it should be noted that these concern mainly but are not limited to applications from Afghans, Syrians and Iraqis).

As can be seen in this figure, the applications for asylum are generally quite low compared to the amount of refugees that entered Austria. This would imply that in all refugee crises Austria has either been mostly a transit country or that an asylum application became redundant (either for lack of need or an early return). Furthermore, the amount of refugees entering Austria merely for transit was substantially higher compared to previous crises.

2.2.4 Common logistical challenges

The following subchapter will present and discuss the major logistical challenges that occurred during these refugee crises in Austria, not only the previous ones but also the challenges for the 2015 refugee crisis. However, it should be mentioned that as literature regarding logistical challenges during the last refugee crisis in 2015 is scarce, the following challenges do not represent a comprehensive picture but rather gives an impression of the critical situation during these refugee crises.

Unclear responsibilities and lack of coordination

Responsibilities, decisive powers and contact people were not clearly allocated and communicated in 2015. The consequence from this was visible especially at the beginning of the crisis when the size and complexity was still unknown. This caused urgently needed logistics to take significantly longer to be established and slowed down the whole process. The question of responsibility was often also related to how the crisis was perceived (if the nature of the crisis is approached in terms of security policy or socio-political) but also depending on characteristics, such as size or duration, the responsible authorities would change. Many actors on federal level but also various NGOs were involved in the logistics processes during the refugee crisis in 2015. Due to lack of coordination and political agreement, disaster management was significantly impaired (Maduz and Roth, 2017).
Cooperation with military forces

The military had three main tasks regarding the provision of humanitarian assistance during the Kosovo crisis, namely, advance security, assist in humanitarian actions and giving direct support to the population. From the humanitarian perspective, one major issue was caused by the flawed interaction of the international humanitarian organizations with the military, which consisted of allocation of responsibilities and tasks, discrepancies in organizational mentalities and the political influence on humanitarian work (Minear et al., 2000).

Political pressure paired with lack of willingness to help

Compared to a natural disaster, the Kosovo crisis caused immense political pressure. Dennis McNamara, who was the Deputy Special Representative of the UN Secretary General for Humanitarian Affairs and Special Envoy of the UNHCR has explained the political influence as following “When you declare a war, NATO’s first in Europe, to be primarily a humanitarian war with the main objective the return of refugees, you raise the political temperature enormously and that inevitably affects the collaboration between military and humanitarian actors.” (Minear et al., 2000, p. 9). Interpreting from this, not only does this kind of humanitarian work further hamper the already complicated relation between humanitarian organizations and the military (as was mentioned before), but this might also lead to substantial complications regarding humanitarian actions as a whole due to the political pressure in the background. Similarly, the 2015 crisis was also marked with high political pressure. Public negative perception of the crisis led to political divisiveness. The result was lack of willingness to provide shelters. Access to properties had strongly varied on regional and local levels. Especially in highly affected areas solidarity was often lacking and this complicated shelter logistics (Maduz and Roth, 2017).

Vast flow of refugees and lack of information

According to Minear et al. (2000) the UN was inadequately prepared for the vast amount of refugees during the Kosovo crisis. This was partly due to insufficient contingency plans that represented an accurate number of displaced people. During the 2015 crisis, this circumstance was further aggravated by lack of trustworthy information regarding the current status quo, the routes and destination.
Consequently, this led to miscalculations and inefficient transportation methods partly caused by lack of effective communication (Maduz and Roth, 2017).

**Non-use of existing structures**

Certain crisis management were in place prior to the crisis in 2015, however, these were not sufficiently used. Local authorities quickly found themselves overwhelmed with the crisis, yet official structures on a Federal level were only faintly involved or consulted. This led to stressful ad hoc solutions and unused expertise on crisis management (Maduz and Roth, 2017).

**Financing**

Maduz and Roth (2017) emphasize that if the remuneration and financial aspects are not covered early enough, the allocation of tasks can cause uncertainty and is therefore, exacerbated. Financing was recognized to be one important challenge during the refugee crisis in 2015.

**Violation of human rights**

One issue that repeatedly emerged during the 2015 refugee crisis was the non-adherence to certain human rights standards. Amnesty international has criticized Turkey for deporting Afghan and Syrian refugees (according to Mützel, 2016 as cited by Schneider, 2016) as this would consequently cause them to search for new, more dangerous routes of entering Europe (according to Rudolf, 2016 as cited by Schneider, 2016). This would merely result in shifted problems regarding logistics and humanitarian organization. Lack of an adequate legal framework on how to handle such situations further contributed to mistreatment. Particularly, critical was the treatment and accommodation of unaccompanied minors (Maduz and Roth, 2017).

**2.2.5 Lessons learned from past crises**

Minear et al. (2000) conducted a study during which they investigated whether international organizations that were actively involved in the provision of humanitarian aid during the Kosovo crisis had implemented lessons learned from previous, similar crises, as, for instance, crises in Iraq, Bosnia or Somalia. The results indicated that only little had been actively implemented and that the lessons learned from previous crises did not clearly show in the organizations’ actions during the Kosovo crisis. In this context, the Bosnia crisis was often referred to as being countenancing the military
forces to neglect fundamental human rights during the Kosovo conflict. Another crisis, that was numerously mentioned, was the one in Northern Iraq during which humanitarian assistance for refugees was aggravated by neighboring countries not granting sufficient asylum as well as the overwhelming population displacement. The study further suggests that the reports, that had analyzed the disasters after, had no evident influence on the institutional actions taken during the Kosovo crisis. The reasons for not taking previous experience into account can be multilayered. Yet, the non-consideration of previous experience consequently causes humanitarian actors to having to develop previously established procedures again with every new crisis. (Minear et al., 2000)
3 METHODOLOGY

This section illustrates how the qualitative research for this thesis was conducted. First, the research design will be explained and justified, then the data collection process in the form of semi-structured interviews will be highlighted. Details to the data sample and interview will be illustrated. Potential concerns regarding ethics or translation will be shortly explained. A concise insight into validity and reliability will be given and lastly, the conduction of the analysis of the findings will be explained.

3.1 Research design

A qualitative study following an exploratory case study design was conducted to answer the proposed research questions. A research design based on case studies is a useful tool to examine a certain phenomenon especially when there is only scarce previous research to base one’s own research on (Sachan and Datta, 2005). Similarly to this, an exploratory approach is also well-suited for topics where only little research has been done yet, according to Patton (2002). Especially in the field of humanitarian logistics and supply chain management, an exploratory approach has become prevalent (Vega, 2018). The logistical challenges of the Syrian refugee crisis in Austria and its implications for future crises have received very little attention so far, therefore a combination of a case study design with an exploratory approach seems to be an adequate choice. The case study is based on the time period of August to December 2015 in Austria and includes only the processes of further transportation and the related set up of emergency shelters. For this research, seven individuals which were directly involved in either the implementation process of the further transportation, the ad hoc set up of emergency shelters or both have been questioned using a semi-structured interview method about the processes and their experiences in order to gain a fundamental understanding of the logistical aspect during the refugee crisis. In the analysis phase, the findings have been categorized and abstracted into groups according to Spiggle (1994) with a supplement analysis aspect of Gioia et al. (2013). The findings have then been presented and discussed in the respective groups and topics that were established during the analysis phase.

3.2 Data collection

The data collection happened in the form of in-depth semi-structured interviews with actors that were actively involved in the planning and implementation of logistical
processes, either regarding transportation of refugees, setting up emergency shelters, or both, during the time period of August to December in 2015 in Austria. Patton (2002) stresses that these half-structured interview manner and data collection should follow a clear thread, yet stay conversational in order to gain the most important and interesting insights. Due to the exploratory nature of this research, this semi-structured questionings approach also allows diverse data to be collected as interviews are not constrained by too narrow questions and can be actively diverted into the area of interest by the interviewer (Anderson, 2010). Possible minor knowledge gaps, usually only related to exact numbers or explicit information that was not directly accessible during the interview, were filled via written communication afterwards.

### 3.2.1 Data sample

The interviewees for the qualitative research were carefully selected in order to have strong qualitative input for the case study (Patton, 2002). In order to be qualified, the potential candidates needed to have had responsibility and practical insight into logistical aspects related to the further transportation or emergency shelters during the refugee crisis. Furthermore, as the research scope is limited to the time period of August to December 2015, it is crucial that the interviewees were actively involved in the logistical processes for a substantial amount of time during this period.

Apart form that, in order to give a good overview and in-depth insights on the events and challenges, it is beneficial and crucial for the research to collect data from different institutions and organizations in order to obtain multifarious and broad perspective on the occurrences and actions taken during the refugee crisis in 2015. Rich description of events will lay good grounds for analysis and reporting of the findings (Patton, 2002).

An overview of the interviewees including their organization and their tasks during the crisis can be found in table 2 in the following subchapter.

### 3.2.2 Interview

The duration for each of the seven interviews was between 48 and 57 minutes. At the beginning of each interview, the interviewees were again reminded of the topic, the scope and time frame of the research in order for them to adapt their answer accordingly. The interviews were following a loose interview guide in order to cover all topics of interests with the questions slightly adapted to the interviewee’s function during the refugee crisis. A set of carefully chosen questions were asked in all
interviews. These specific questions concerned topics such as cooperation with other organizations, description of the major challenges, propositions for improvement and references to past refugee crises. The main goal with the interviews was to obtain a clear image of the logistical processes, including transportation but also setting up emergency shelters, and illustrate the circumstances under which these had to be implemented.

The following table 2 gives a short overview of all interviewees. It identifies the type of organization the interviewees were active in, the code to match the statements in the presentation of the findings chapter with the interviewee, a short task description during the crisis, the duration of the interview, the location where the interview was conducted (face-to-face or virtually) and the date of the interview:

<table>
<thead>
<tr>
<th>Interviewee</th>
<th>Type of organization</th>
<th>Code</th>
<th>Task description during crisis</th>
<th>Location</th>
<th>Date</th>
<th>Duration (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviewee 1</td>
<td>Humanitarian organization (Austrian Red Cross)</td>
<td>RC1</td>
<td>Further transportation and provision of emergency shelters, first aid and medical treatment</td>
<td>Vienna; face-to-face</td>
<td>27.03.2019</td>
<td>0:52</td>
</tr>
<tr>
<td>Interviewee 2</td>
<td>Humanitarian organization (Austrian Red Cross)</td>
<td>RC2</td>
<td>Procurement and provision of relief supplies, logistics partner for BMI, first aid and medical treatment</td>
<td>Skype call</td>
<td>28.05.2019</td>
<td>0:53</td>
</tr>
<tr>
<td>Interviewee 3</td>
<td>Aid organization (“shelter organization 1”)</td>
<td>SO1</td>
<td>Provision of emergency and permanent shelters, initial reception, support at railway stations, distribution of donations, translators, support and source of information for refugees</td>
<td>Skype call</td>
<td>02.04.2019</td>
<td>0:52</td>
</tr>
<tr>
<td>Interviewee 4</td>
<td>Charitable organization (“shelter organization 2”)</td>
<td>SO2</td>
<td>Provision of emergency and long-term shelters, initial reception</td>
<td>Vienna; face-to-face</td>
<td>06.05.2019</td>
<td>0:57</td>
</tr>
<tr>
<td>Interviewee 5</td>
<td>Aid organization (“shelter organization 3”)</td>
<td>SO3</td>
<td>Provision of emergency and long-term shelters, initial reception</td>
<td>Whatsapp call</td>
<td>30.05.2019</td>
<td>0:55</td>
</tr>
<tr>
<td>Interviewee 6</td>
<td>Volunteer for shelter organization 3</td>
<td>SOV</td>
<td>Volunteer work at shelter organization 3, administration of social media channel</td>
<td>Skype call</td>
<td>20.06.2019</td>
<td>0:48</td>
</tr>
<tr>
<td>Interviewee 7</td>
<td>Governmental department (Ministry of Interior Austria)</td>
<td>MIA</td>
<td>Consultant and advisor, planning and implementation of emergency shelters, initial reception</td>
<td>Skype call</td>
<td>24.05.2019</td>
<td>0:48</td>
</tr>
</tbody>
</table>

Total duration of interviews: 6:05

Table 2 Overview of all interviewees (based on data sample, 2019)
The interviews were then conducted following, for most parts and to the extent applicable, a set of topics. An overview of the main topics discussed is given in table 3. It should be noted that the topics 4 to 10 were not covered in the same order throughout every interview but rather discussed when suitable depending on the flow of the interview.

<table>
<thead>
<tr>
<th>Interview topics/guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Short recollection of the research topic</td>
</tr>
<tr>
<td>2. The interviewee's background in the organization/institution and tasks</td>
</tr>
<tr>
<td>3. Description of the organization's/institutions role during the refugee crisis</td>
</tr>
<tr>
<td>4. Description of transportation logistics <em>(if implemented)</em></td>
</tr>
<tr>
<td>5. Description of shelter logistics</td>
</tr>
<tr>
<td>6. Geographical area in Austria</td>
</tr>
<tr>
<td>7. Use of existing evacuation plans</td>
</tr>
<tr>
<td>8. Adapted learning from previous crises</td>
</tr>
<tr>
<td>9. Major challenges related to logistics</td>
</tr>
<tr>
<td>10. Recommendations for future crises</td>
</tr>
<tr>
<td>11. Anything else worth mentioning</td>
</tr>
</tbody>
</table>

Table 3 Topics covered during the interviews

First, a short recollection to remind the interviewees of the scope of the topic was given. Then, in order to be able to understand how much expertise each interviewee has in this area, some questions regarding the backgrounds were asked. In order to be able to understand the exact function of the organization during the crisis (which often differed from their usual function), some insight was gained by inquiring about this. In this context it was also important to investigate whether the organization was drifting from their usual core business which allows conclusions on their level of experience. Thereafter, information about the further transportation and shelter logistics were collected as these were important for the first RQ. This also included the geographical area. Use of existing evacuation logistics were also one aspect of importance so the interviewees were inquired about this as well. Lessons learned and comparisons to past crises as well as recommendations for future crises were essential for the overall learning process during disasters. Challenges were usually discussed throughout the whole interview. Nevertheless, at the end, the interviewees were asked again to name the most important logistical challenges in their opinion. In order to avoid to leave
anything important uncovered, the interviewees were inquired whether something relevant was not discussed at the very end of interview.

The original interview guide and the translated version can be found in the appendices. It is worth mentioning that the questions asked were strongly dependant on the organization’s responsibility during the crisis. For instance, if an organization provided shelter but no transportation logistics, then the questions were adapted to that accordingly.

All interviews were recorded with two devices and later transcribed to ensure that no relevant information and experience was lost, as suggested by Patton 2002. All interviews were conducted in German and either face-to-face or via Skype or Whatsapp call.

3.2.2.1 *Transcription*

All interviews were transcribed in order to provide comprehensibility of the extracted data and facilitated presentation and analysis of the results. The transcriptions were verbatim according to the recordings in order to provide the necessary and crucial raw data as a foundation for the analysis meaning that sentence structure and exact wording was kept during the transcription process (Patton, 2002). Austrian vocabulary was transcribed to the extent possible and only replaced by a standard German word if needed for clarification.

3.2.2.2 *Translation*

Translation issues can constitute a threat to the credibility of cross-cultural research. Linguistic equivalence of the meanings of the data in the original language and its translations are therefore essential (Peña, 2007). All interviews were conducted in the same language (German). Six out of seven interviewees as well as the researcher were native German speakers, one interviewee displayed a language level comparable to a native speaker. Because of this, it is safe to assume that the potential for linguistic misunderstandings and misconceptions of vocabulary during the data collection process can be significantly reduced. However, the obtained data was later translated to English during the analysis and writing of this research paper. For this particular study, the research and translation have been conducted by the same person as the researcher possesses the necessary language skills and knowledge of the research topic itself to credibly be capable to translate the findings from German to English.
One important criteria is the epistemological position of the researcher, which stresses the required level of objectivity needed throughout the study (Peña, 2007; Temple and Young, 2004). In this context, this means not to potentially compromise the trustworthiness of the data by causing bias due to inaccurate translation. Also, it is worth mentioning that the conditions under which a study is conducted can significantly influence the language used due to hierarchy and language power (Temple and Young, 2004). However, as the validity of this research is less depending on subjective behavior and choice of words of the interviewees but rather on objective facts provided and listing of experiences, certain language-specific issues, such as hierarchy and problems related to language power, can be mostly ruled out.

In case, a direct translation was not possible or sufficient due to specific expressions, the original term or phrase used during the data collection is provided in brackets in order to avoid semantic loss.

### 3.2.2.3 Triangulation of data

In qualitative research, triangulation of data refers to the contemplation of data from at least two perspectives, often as a method of validation of data (Flick, 2004). For this research, this meant validating collected data by trustworthy sources during the presentation of results. Conflicting data, e.g. numbers that an interviewee might remember incorrectly, would then be further researched in order to validate the answer that is most likely to be correct.

### 3.2.3 Ethical concerns

No refugees were interviewed for this research. This research only considered experts and individuals that were actively involved in the transportation and/or shelter logistics during the set time period as potential interview candidates. In this sense, ethical concerns were not relevant for this study. The interviewees were promised confidentiality with the collected data so their names will be anonymous (Patton, 2002).

### 3.2.4 Trustworthiness of data

The following subchapter provides a brief description regarding the trustworthiness in terms of reliability, validity and transferability of the collected data.
Trustworthiness of data might potentially be affected by the time period that lies between the occurrences of the events in fall 2015 and the time of research in spring 2019. Some details might have faded in-between and the perception of challenges partly relies on subjective opinions, which are generally critical in objective research.

**Reliability**: Reliability refers to the precise replicability of results and how the data was collected (Leung, 2015). This means especially to be consistent in terms of data collection, yet the issue with reliability is not completely straightforward for research with a qualitative nature. Iteration, as described by Spiggle (1994), was still prevalent after the first step of data collection where a slight adaption to the interview guide occurred as the data collection method was semi-structured interviews. Reliability in the form of consistent data collection method was then primarily aimed for after refutation steps were done.

**Validity**: Validity describes whether the methodology and the tools to collect data were appropriate for the research aim (Leung, 2015). In this sense, it can be said as the study was exploratory, it was necessary to implement a method that allows flexibility in data collection. For this purpose, semi-structured interviews seemed the most appropriate method. As the scope of this topic is rather broad, it might also benefit from a combination of tools or even methods in order to collect as much multifaceted data as possible.

**Transferability**: Transferability of the results can be said to be partly possible. Many challenges have proven to be well-known issues in humanitarian operations, so it can be assumed that generalizability of findings is given to some extent. However, some might be specific for the Austrian context as they potentially stem from the idiosyncratic disaster management systems or the Austrian mentality and/or political environment.

### 3.3 Data analysis

In order to recreate the events during the refugee crisis in Austria in 2015, primary and secondary data in the form of newspaper articles, academic literature and organizations’ websites have been collected and summarized in the case description (chapter 4). Primary data in the form of interviews in conjunction with the case description were analyzed and thereafter, the findings and contributions to literature
were summarized in the discussion chapter. This subchapter will give insight to how the analysis of the raw data was conducted.

There is no uniform method to analyze the collected data when conducting a qualitative study using interviews (Spiggle, 1994). In order to obtain accurate reflection of the data in the study the method suggested by Spiggle (1994) with a supplement of Gioia et al. (2013) was implemented. The analysis functions to manipulate and separate the mass of data into its components in order to facilitate interpretation. The purpose of interpretation is then to derive the meanings of the findings (Spiggle, 1994). This allows comparison within and across interviews, the establishment of connections, correlations, common themes and descriptions. Spiggle (1994) proposes certain processes for the analysis procedure, namely, categorization, abstraction, comparison, dimensionalization, integration, iteration and refutation. Spiggle (1994) mentions that these are neither independent steps towards analysis nor do they need to be applied in a specific order. This process is implemented to make sense of the data and to connect the final findings of this thesis to the raw data. The obtained inferences emerge from the analysis and interpretation processes. Subsequently, this helps detect patterns, meanings, themes, relations and theories and conclusions in the data. The methods of analysis and interpretation are not strictly described nor predetermined. Therefore, they can be implemented in a linear or circular manner, separately or jointly, more or less systematic and with one of them being more stressed throughout the process (Spiggle, 1994). The method for analysis was partly supplemented by the proposed analysis framework of Gioia et al. (2013) for reasons of more-detailed categorization of available data.

![Overview of analysis and interpretation](adapted from Spiggle, 1994)
In figure 5 the individual stages according to Spiggle (1994) are visually illustrated. Furthermore, the figure shows that during this research the interpretation part was conducted throughout the whole analysis process.

Each of the individual steps as presented in figure 5 will be shortly described according to Spiggle (1994) and explained how these tools were implemented during this research. This helps gain an understanding on how the mass of data was sorted, divided and classified as well as how the interpretation and assumptions were derived.

**Categorization**

During this process, the raw data is being coded and units of data are being labeled. This step aims at identifying patterns and themes. The retrieved categories from this process are preliminary so that further flexible interpretation is not impeded (Spiggle, 1994). For this purpose, essential keywords were collected while carefully reading the transcripts and later assembled into groups in order to draw up more general themes of interest. It was essential to focus only on the crucial data which was relevant for the objectives of this research. Constant comparison, as proposed by Spiggle (1994), was conducted throughout this first step. The outcome of this first procedure yielded a total of 118 keywords that could be identified in the raw data.

**Abstraction**

The abstraction builds up on categorization and establishes more conceptual and abstract categories. This includes integrating specific categories into more general one as a single unit of data can be an empirical implication of a higher-level concept. The thus created abstracts are characterized by certain common themes, attributes and its interrelation to other abstracts (Spiggle, 1994). After establishing the provisional categories during the categorization process, the groups were then arranged into more conceptual themes whilst comparing in order to recognize similarities and differences among the vast amount of data. In total, nine abstracts representing nine topics could be identified.

**Comparison**

This tool aims at identifying similarities and differences by comparing the collected data. Comparison is part of the early stages of the analysis and is being implemented during the categorization and abstraction phase. When recognizing similarities among
the data, it is then labeled and categorized into one group which then represents one empirical aspect or theme. The procedure of comparison can initially often be described as rather unsystematic and intuitively. Nevertheless, while analysis evolves and progresses, the approach of comparison and organizing the data might become more structured and methodical by comparing the units of data not to other units but more whether they fit into a specific, previously established category (Spiggle, 1994).

**Aggregate dimensioning**

As soon as the other categories and abstracts have been established, aggregate dimensions are implemented to further divide the concepts into higher-level dimensions. This leads to the construct of a data structure (Gioia et al., 2013). This analysis approach was used to supplement the method suggested by Spiggle (1994) in order to further establish more holistic categories.

![Diagram showing the process of categorization, abstraction, and aggregate dimensioning](image)

**Figure 6**  
Example for analysis (adapted from Spiggle, 1994 and Gioia et al., 2013)

Figure 6 illustrates one example for the categorization and abstraction step supported by comparison and the identification of an aggregate dimension according to Gioia et., 2013. During the categorization, keywords were collected. By means of constant comparison and rearrangement, the abstract of “communication” could be established. With the supplement analysis method proposed by Gioia et al., 2013, this abstract was further recognized as part of a higher level of “organization”.
**Dimensionalization**

This step involves defining a scope for a certain category in order to study its dimensions (Spiggle, 1994). This was not done during this research as it seemed unsuitable for the data and will therefore not be explained in further detail.

**Integration**

Integration considers the relationship and correlation between the categories (Spiggle, 1994). The relationships between the different factors and topics were essential to be identified and comprehended. This step involves selective coding which aims at understanding these relations compared to axial coding which targets to uncover similarities between concepts (Spiggle, 1994).

**Iteration**

This step occurs already during data collection, as it was also the case for this research, and fundamentally describes how newly gained information during previous interviews slightly models the interview approach for the upcoming ones (Spiggle, 1994). As this study is exploratory, there are no clear expectations for the nature of the results. For this reason, concepts and ideas which were not initially involved might become valuable during data collection and therefore shaped the interview guide to some extent after the first phase of data collection.

**Refutation**

Refutation describes the step of exposing one's data to an empirical test in order to challenge themes and concepts from the emerging analysis (Spiggle, 1994). For this study, purposive sampling, which is described as the deliberate selection of different and divergent groups or samples for the purpose of comparison (Spiggle, 1994), was conducted before data collection. The goal of this is to ensure multifarious input by questioning interviewees from different organizations and positions.
4 CASE DESCRIPTION: THE SYRIA REFUGEE CRISIS IN AUSTRIA IN 2015

The following description will give an introduction and overview of the case. It will explain the course of the crisis, shortly illustrate how it started, how the refugees arrived in the EU and give a short insight into the refugee situation during that time.

In 2015, roughly 60 million people were forcibly displaced globally of which more than one million came to Europe (ÖIF, 2015). From an European perspective, the refugee crisis in 2015/2016 not only posted a logistical challenge to the admission countries, that actively took in refugees and asylum seekers, but also to the transit countries, which were merely passed through in order to get to the desired destination country (Roth, 2017). Austria has functioned as both types (Bučar, 2017). Nevertheless, from a logistics point of view, organizations involved and responsible actors were often confronted with similar obstacles, regardless of being an admission or transit country. One the one hand, political-strategic decision within a timely manner, whose consequences were wide-ranging, had to be made (Roth, 2017). On the other hand, national structures and processes on an operational level were heavily strained, as the capacities for registration and shelter had to be substantially increased or created from scratch within a short period of time. Due to the size of the crisis and the lack of information, decision making and planning was tough and often had to be done ad hoc (ibid).

4.1.1 The refugee situation in Europe

In total, more than 2.3 million illegal border crossings were registered in Europe in 2015 (European Parliament, 2019). The Federal Office for Migration and Refugees in Germany calculated 476,649 asylum applications in 2015 (BAMF, 2016). The number of refugees that have crossed German borders is estimated to be approximately 1.1 million, so almost twice the amount of applications. 650,000 of these had transited Austria before (ARC, 2019). In 2015, roughly 1,257 million first-time asylum seekers (compared to 563,000 in 2014) were registered in Europe (Eurostat, 2019). The overall increase of new refugee registrations in Europe stood at 123% in 2015 compared to 2014. For Germany, this number had climbed to 155% while Austria recorded a rise of 233%. The specific numbers for Austria amounted to 25,675 refugees in 2014 compared to 85,505 in 2015 (Eurostat, 2016). In 2015, most asylum seekers came from Syria, Iraq and Afghanistan (ÖIF, 2015). In conjunction with Eritrea, refugees from these
countries required the most protection (Schneider, 2016). It is noteworthy to mention that registration and calculation of the exact numbers of refugees is problematic as some were not registered at all while others were subject to double-registration. The overall situation was somewhat unclear at that time (Zeit Online, 2015).

Figure 7 illustrates the number of border crossings compared to the number of asylum applications from a European, German and Austrian perspective. The amounts stem from the information provided in the previous paragraph.

![Figure 7: Border crossings vs asylum applications (axis labels as thousands)](image)

These numbers emphasize the aggravating circumstances for providing the urgently needed humanitarian assistance and the challenging conditions under which sufficient logistics had to be established. As it becomes visible from this figure, the number of mere transit through Austria is substantially higher compared to the asylum applications. As a result, it can be assumed that most logistical challenges arose in the area of mass transportation and a mass accommodation in emergency shelters.

### 4.1.2 The flight route to Austria

The refugees entered Europe in 2015 using both land routes and seaways, with the latter being taken by approximately one million (Schneider, 2016). Most refugees (972,500) fled via the Mediterranean (Zeit Online, 2015) and the majority entered into Europe in Greece (Schneider, 2016). The rest used the land route via Turkey (34,000)
(Zeit Online, 2015). Similarly to past refugee crises, Austria has again acted as a transit country rather than destination country (Tagesspiegel, 2015) (which also becomes visible in figure 7). The main flight and transit route towards Europe was through the Balkans and subsequently Germany for most refugees (ORF, 2019). In September 2015, Hungary closed its borders towards Serbia, Croatia and Slovenia which caused the Balkan route to shift to the West (ORF, 2019; ARC, 2016). Consequently, the entry points to Austria had changed from originally Nickelsdorf in the West to Spielfeld in the South by mid-October 2015 (Train of Hope, n.d.). In the further course of the crisis in March 2016, other states along the Balkan routes closed their borders. In conjunction with the EU-refugee agreement with Turkey (which became effective on 20.03.2016) (ProAsyl, 2018) this led to less refugees entering Greece via Turkey steadily decreased the influx of refugees via this route (Focus, 2017).

In figure 8 the shift of the Balkan route to the West is illustrated. The orange route represents the original Balkan route via Hungary and subsequently continued to Austria with Nickelsdorf being the most important entry point in the beginning of the crisis in August/September 2015. The blue line illustrates the new route beginning in October 2015 via Slovenia to Austria with the entry point being Spielfeld after Hungary closed the borders to Serbia.

4.1.3 The beginning of the crisis

The Dublin regulation (or Dublin III Regulation which became effective in 2013) governs which state is responsible for the processing of an application for asylum. The objective with this is to guarantee that each application for asylum is only being
processed once within the European Union (DerStandard, 2018; UNHCR, 2017). According to this regulation, a refugee needs to apply for asylum in the EU-country that he or she first enters which is mainly the case at the outer border of the EU (in this case, Italy, Greece and Hungary). The result of this was that those countries located at the outer borders were quickly overwhelmed with the amount of refugees which, from a logistical point of view, led to unacceptable and degrading circumstances in emergency shelters (Spiegel Online, 2015). On August 25th, 2015, the BAMF announced that the Dublin regulation will be mostly factually invalid (“weitesgehend faktisch außer Kraft”) for Syrian refugees in order to relieve EU countries located at the Mediterranean (DW, 2019; ARC, 2016) (however, it was later reinstated on 10th of November, 2015 according to ARC, 2016). On the 31st of August, 2015 the chancellor of Germany, Angela Merkel, proclaimed the widely known line “Wir schaffen das!” (“We can do it!”). At this time, Austria and Hungary had already been deploying extra trains in order to transport the incoming refugees further to Germany (DW, 2019; ARC, 2016).

At the beginning of September 2015, Hungarian authorities had started to refuse to further transport the refugees via trains to Austria. The only trains leaving from Budapest-Keleti railway station brought the refugees to camps instead of the Austrian border as they had prior to departure been misinformed about. This deception quickly spread among the remaining refugees still persevering at the railway station which caused the situation to became more and more uncontrollable. After days of being stalled, the rest of the refugees then decided to walk to Austria and subsequently to Germany on foot which was later referred to as the “March of Hope” (ORF, 2019; Train of Hope, n.d.). Shortly after, volunteers (organized via social media) rushed to the railway stations (Westbahnhof and Hauptbahnhof) in Vienna in order to provide support, relief supplies and provisory sleeping opportunities for arriving refugees. This project was later referred to as “Train of Hope” (Train of Hope, n.d.).

In figure 9, the “March of Hope” is illustrated. It should be noted that this is no realistic replication of the march which started at the Budapest-Keleti railways terminal in Hungary towards Austria and, for most refugees, subsequently towards Germany but rather gives a visual impression of the route the refugees were planning on taking on foot.
Due to this movement, on Friday the 4th of September, 2015, Hungary’s prime minister Viktor Orbán called into Austria’s Ministry of Foreign Affairs stating that thousands of refugees were on their way towards Austria (ORF, 2019; DW, 2019). Simultaneously, Hungary’s Minister of Prime Minister’s Office János Lázár announced that Hungary will prompt a hundred buses of refugees to be brought to the Austrian border the same night independently of whether Austria would accept them or not (ORF, 2019). Angela Merkel and Werner Faymann, who was then the chancellor of Austria, decided that Germany would officially open their borders for the refugees coming to Austria (DW, 2019) without any scrutiny or registration in order to avoid potential panic and violence (ORF, 2019). The decision included an agreement on a 1:10 distribution meaning for every refugee staying in Austria ten would subsequently go to Germany. The first buses arrived at the Hungarian border to Austria at around 3 am the same night where the refugees then crossed the Austrian border via Nickelsdorf on foot (ORF, 2019). On this weekend, approximately 15,000 refugees crossed the Austrian border (ORF, 2019) and roughly 20,000 refugees arrived at the railway station in Munich, Germany (DW, 2019). In the consecutive days, Austria was faced with an influx of 6,000 refugees per day that needed to be (for most part) further transported to Germany (ORF, 2019). The highest number of refugees crossing the Austrian border within one day was recorded on 14th of September with approximately 20,000 refugees. Border controls were again implemented on the 13th of September, 2015 and the 15th of September, 2015 for Germany and Austria (in Nickelsdorf), respectively. On the 19th of December, 2015, a border fence in Spielfeld (another entry point to Austria, see figure 10) was installed (ARC, 2016).
In this section, the findings of the study will be presented. The main focus here was firstly, to gain an insight in how the further mass transportation and implementation of emergency shelters were conducted during the most critical time period of the crisis as most processes had to be established from the ground up. Secondly, one important aspect of interest is the identification of the major challenges that impeded the humanitarian logistics processes and therefore needed to be overcome while operating under a certain degree of urgency with limited resources.

First, the transportation process according to the data collected during the interviews will be illustrated. Subsequently, the organizational aspects, as they were recognized during the data analysis (see Appendix 2) will be presented. It consists of the following categories: coordination, cooperation and communication. These subcategories aim at facilitating adequate structure of the results. They will be individually and to the extent necessary integrated and presented in the further transportation. Thereafter, the logistics regarding emergency shelters will be presented. For this, the same subcategories (coordination, cooperation and communication) will be used. Additionally, it will also cover evacuation logistics and the role of the volunteers and social media. Throughout the presentation of the findings, the related challenges, as they were mentioned during the interviews will be illustrated as the following example:

- Challenges will be introduced with these listing points

Furthermore, it should be pointed out that some challenges cannot be clearly matched with either transportation or shelter logistics as some were prevalent in both processes to some extent (e.g. lack of information). If beneficial to the overall understanding, these challenges will then be discussed for shelter and transportation part individually.

Similarly to the literature review, this chapter will also include a short insight into the past crises and how the interviewees have perceived this crisis compared to past refugee crisis in Austria and whether any learnings were considered. Lastly, some suggestions for improvement if a similar crisis were to occur again as proposed by the interviewees is being presented at the end of this chapter.

Interview quotes translated into English to the extent possible will be presented when suitable in order to highlight the findings.
Table 4 gives an overview of the structure for the findings. First, the processes will be described for both further transportation and emergency shelters. Then, the subcategories coordination, cooperation and communication will be presented for transportation and shelters individually. Any related challenges will be pointed out and explained. Towards the end, statements and findings regarding comparison to past crises will be presented. The chapter ends with suggestion for future crises as proposed by the interviewees.

<table>
<thead>
<tr>
<th>Further transportation</th>
<th>Emergency shelters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of process</td>
<td>Description of process</td>
</tr>
<tr>
<td>Coordination</td>
<td>Cooperation</td>
</tr>
<tr>
<td>Identified challenges</td>
<td>Identified challenges</td>
</tr>
</tbody>
</table>

Comparison to past crises

Suggestions for future crises

Table 4 Structure of findings

Before the transportation and emergency shelter procedures are being presented, it is valuable to inform about the how disaster management is generally organized in Austria. This topic will only be shortly discussed during this research as this would otherwise exceed the scope of this thesis. Yet, in order to facilitate understanding for the upcoming logistical process, it will be shortly mentioned.

**National Crisis and Disaster Protection Management (SKKM)**

Generally, disaster and crisis management are handled on a state-level in Austria. Therefore, if a crisis hits which stretches across several (in total nine) states in Austria there used to be no legal regulation in place to adequately allocate administration and responsibility across states (RC1; BMI, n.d.). As a result, the National Crisis and Disaster Protection Management ("Staatliches Krisen- und Katastrophenschutzmanagement"; SKKM) was introduced by the Federal government in 1986 and as of 2003 the coordination of the SKKM and International Disaster Management reside with the Ministry of Interior Austria (BMI). The SKKM incorporates the competent authorities on a Federal level, the disaster management agencies on a state level as well as aid and rescue organizations in order to enable cooperation and organization across local and regional borders (BMI, n.d.). The Austrian Red Cross (ARC) acts as a representative for humanitarian organizations (RC1).
5.1 Further transportation

In order to comprehend the challenges that occurred, it is crucial to understand the general procedure of how transportation was conducted. Therefore, in this first subchapter, the logistical process, in this research limited to the further transportation from the Austrian border to Germany, will be shortly described. Thereafter, other aspects of importance, such as coordination, communication and cooperation will be highlighted with the information and data provided during the interviews. In each section, the relevant challenges will be illustrated.

5.1.1 Description of transportation process

The Austrian Red Cross was largely involved in the planning of means of transportation together with the Austrian military and the Austrian Federal Railways (ÖBB). Generally, the respective main area of operation moved along the refugee route in Austria throughout the crisis. This was due to refugees crossing the Austrian border in the East via Hungary and entering Austria via Nickelsdorf, Burgenland. Therefore, the refugee route can be described as an East-West-route (“Ost-West-Achse”) as the refugees, that pursued further transportation to Germany, would subsequently leave Austria in the West (RC1). Consequently, the majority of the available resources was concentrated on this area (RC1, RC2).

Especially in the beginning, during the immediate first phase [of the crisis], the main entry point was the border crossing in Burgenland [East Austria] in Nickelsdorf. This means the flight route was de facto an East-West axis. (RC1)

In the further course of the crisis, the route shifted more towards Heiligenkreuz, Burgenland, as this had become a new point of entry to Austria (due to the closure of Hungary’s borders). Subsequently, the next crucial border crossing point was then located in Spielfeld, Styria in the South-East of Austria. This caused the refugee route to develop to a South-Northwest-route (“Süd-Nordwest-Achse”). The available transportation logistics was required to move along the shifting of the refugee route throughout Austria (RC1).

As already mentioned, in the beginning of the crisis, the majority of the refugees entered Austria in the East via Nickelsdorf, approximately 70 kilometers from Vienna. During this first phase, the primary mode of transportation were trains provided by the ÖBB and coordinated by the Austrian military (RC1, RC2). The optimal train connection between Vienna and Salzburg, which is closely located to the German
border (which was also recognized by the refugees and therefore a preferred way of travelling) was therefore initially used to transport the refugees. This led to the East-West-route between the major point of entry in the East close to the exit point at the German border in the West (RC1). The trains offered a capacity of roughly 300-350 people per train (depending on the model) and were therefore well-suited to transport a significant amount of people at once (RC1, SO1). However, the ÖBB did not dispose of sufficient spare capacity to keep up the transportation of refugees while simultaneously satisfying the regular demand. In addition to that, the restoring of the trains for the next usage consumed disproportionate effort which caused the responsible parties to seek alternatives. With the shifting of the routes towards the South-East of Austria after September 2015, buses which were coordinated by the military became the prevalent mode of transportation (RC1). One bus could hold around 50 people and this was strongly considered during planning and implementation in order to make full use of the available capacity (RC1, SO1). The buses were initially provided by public bus companies (RC1) and later on also by private ones (RC1, RC2), the military (RC2) and on a more local level in the Viennese area by the Wiener Linien, which is the Vienna Public Transportation company (SO1).

The route and entry points are illustrated in figure 10. The blue route represents the East-West route via transportation by train, starting from the initial crucial point of entry Nickelsdorf while the orange route displays the result of the shift throughout the course of the crisis to a South-Northwest route from two entry points, Spielfeld and Heiligenkreuz, via transportation by bus after this had become the more prevalent mean of transportation.

Figure 10  Routes and entry points in Austria (Google Earth Pro, 2019)
It should be mentioned that there were other irregular and minor border crossings in Tyrol (West Austria) and Carinthia (South Austria) but these were not located on one of the main routes through Austria (RC1) and will therefore not be discussed in further detail as this is outside the scope of this research.

- Bottleneck

One important challenge that occurred during one of the earlier phase of the crisis was a bottleneck between Nickelsdorf and Vienna. There were no means of transporting the refugees from the border crossing to the railway stations (Hauptbahnhof and Westbahnhof) in Vienna in order to further transport them via train towards Germany (RC1).

The bottleneck was illustrated on the map of Vienna in figure 11 with a red circle. The distance was estimated from the point of entry (Nickelsdorf) to one railway station (Westbahnhof). The further transportation to Salzburg (and subsequently to Germany) was then managed using trains.

Interestingly, the bottleneck was unintentionally resolved by the local market as cab companies offered their services to transport the refugees from the border to Vienna (RC 1, SO1). This was due to the potential lucrative possibilities as demand was high so the price for transportation could be freely set. In further consequence of the crisis, a uniform taxi tariff for this route was officially enacted by authorities (RC1).
Other bottlenecks then occurred at the German border when the number of border crossings was extremely limited for that day and thus the refugees could not be transmitted (RC1).

- Lack of resources

Lack of resources posed a critical challenge throughout the whole disaster management not only in terms of transportation but also for the emergency shelters.

Again, at the beginning of the crisis, trains were the preferred way of transportation. The ÖBB provided spare trains while keeping up the daily business and therefore operating at the limit of available capacities. At the same time, the ÖBB’s capacities are construed for the daily operations. Due to this, the amount of spare capacity in the form of extra trains was restricted and therefore not ideal for the transportation volume needed during the refugee crisis (RC1). Later in the course of the crisis, when buses became the major mean of transportation provided by public bus companies, a similar problem as with the ÖBB, occurred as transportation of refugees was not in the bus companies’ responsibility nor their core business. The lack of buses was then compensated by private bus companies stepping in and offering their buses as means of transportation (RC1).

Lack of resources also became evident regarding finding adequate personnel. These included qualified helpers (SO1) but also translators (RC1). In the middle of the crisis, these were often longer available (SO1, RC2).

- Vast flow of refugees

The lack of resources became evident as the actors during the crisis were simultaneously confronted with a high inflow of refugees while at the same time being resource-poor (RC1). One interviewee stated the following regarding the amount of refugees:

So we knew that these people were coming to Austria and then continue towards Germany or wherever or stay in Austria. However, I believe every one of us was surprised by the amount and within this short period of time. (RC2)

The whole situation was extremely volatile, especially within the first two weeks (SO1) (approximately around end of August/beginning of September 2015).
Uncertainty regarding border passings to Germany

Similarly to this, the inflow of refugees on one side of Austria was often not sufficiently compensated by the outflow on the other side to Germany. It can be assumed that Germany was struggling with similar problems, therefore, the possible intake of new refugees often quickly surpassed available capacities. Thus, the German government often needed to restrict new refugee intakes due to lack of capacities (RC1, SO1). After the borders had been officially opened on 4th of September 2015, the organizations involved could transport the refugees directly to Germany (SO1).

I remember when I was at Westbahnhof on the Monday after [the borders had been opened] after three hours of dispatching extra trains for the further transportation. That would not have been legal three days before. I could have been reported for people smuggling. (SO1)

According to SO1, the situation has been volatile in many directions. However, this improved throughout the course of the crisis. The volatility regarding the border passings to Germany was resolved as soon as it became evident that people entering Austria would also apply for asylum there.

5.1.2 Coordination and responsibility allocation

The coordination of buses, trains, trams and such was handled differently depending on whether it was state or Federal level. For this research, both, the state level from the perspective of Vienna as well as the Federal level, meaning all of Austria were investigated.

5.1.2.1 Central Transportation Management (ZTM)

The Central Transportation Management, originally “Zentrales Transportmanagement” (ZTM) was the focal point where the transportation of refugees using mainly buses and trains was coordinated. It consisted of the Austrian Red Cross (ARC), the Ministry of Interior Austria (BMI), the Federal Ministry of Defence (from now on referred to as Austrian military) and the ÖBB (Austrian Federal Railways) (RC1, RC2). The ZTM was located in the traffic control center of the ÖBB in the signal box of Matzleinsdorf (Vienna) (RC1, RC2). It functioned as the central coordination intersection for the whole of Austria and was established within two days at the beginning of the crisis (RC2). Starting from September 16th, 2015, the military in joined efforts with the ÖBB were coordinating means of transportation on a federal level for the whole of Austria in order to manage the refugee crisis (APA-OTS, 2015). During this process, the ARC was responsible for the accommodation of the refugees along the route throughout Austria.
as well as supported the Austrian military in terms of transportation logistics (RC1, RC2). Substantial decisions were made in joined effort between the military and ARC. If aspects of security were involved then the BMI also formed part of the decision making process (RC1). A short overview of the responsibility allocation within the ZTM can be found in table 5:

<table>
<thead>
<tr>
<th>Organization/institution</th>
<th>Main responsibility/task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austrian Federal Railways (ÖBB)</td>
<td>Transportation via trains</td>
</tr>
<tr>
<td>Austrian military</td>
<td>Coordination of buses</td>
</tr>
<tr>
<td>Ministry of Interior Austria (BMI)</td>
<td>Security posture</td>
</tr>
<tr>
<td>Austrian Red Cross</td>
<td>Placement in shelters</td>
</tr>
</tbody>
</table>

**Table 5 Responsibility allocation within ZTM (based on findings)**

However, as the following quote illustrates, exact responsibility allocation was often not practical nor possible.

> In fact, it was so that within this management process [Führungsverfahren] it was not always 100% clear who made which decision as the decisions are made by a council of people. However, at the end of the day somebody will always have to take responsibility for it. (RC1)

Another task of this ZTM was to not only transport the refugees safely through Austria but take the possible border crossings into consideration in order to avoid similar consequences caused by the bullwhip effect. In practice this meant that the refugees crossing the border to Austria had to fit the number of refugees exiting Austria on the other side (RC1).

- Lack of preparation

Lack of preparation is a topic that was mentioned several times during the interviews. One interviewee put the lack of preparation as the following:

> How come I, who is working in this field on a local basis, have known since 2013 that these people were coming. They [the refugees] can’t swim to America. So it was logical, they [Austrian authorities, responsible actors] should have prepared much sooner. (SO2)

Another interviewee (SO3) mentions that awareness was there to some extent but preparation was insufficient.

> I think people were aware that something is coming but it was not entirely clear when. Everybody was somehow waiting for it as in “ok something is happening there”. So they were partly prepared but not enough. (SO3)
That same interviewee (SO3) mentioned in this context that one major issue here in Austria is that the responsible authorities are not used to deal with crises and thus, lack preparation.

The question about preparation was discussed to some extent in every interview. Another interviewee (MIA) stated to have been part of a European project which is called “MaSC” (European Union Mass Shelter Capability) that deals with crisis management. The conclusion from engaging in this project was that there is only little preparation on a European level for any kind of crisis. The consequence from this is that the procedures need to be reinvented every time a crisis hits a country. The following quote highlights the interviewee’s opinion on this:

We basically need to reinvent the wheel every time a crisis happens. Even the Italians that experience many earthquakes have no SOPs (Standard Operating Procedures) (...) and this is really worrisome when you then see that preparation in Austria was basically zero. (MIA)

Related to this, as one interview pointed out, is the lack of reprocessing of these events (SO3). It can be assumed that this would only contribute to having to develop these processes again from scratch if another crisis were to hit Austria in the future.

However, in contrast to the previously mentioned quotes, the following was stated by another interviewee who claims that preparation for a crisis like this is not feasible:

You cannot be prepared for a crisis like this, not even as a state. At peak times, if I remember correctly, we had 15,000-20,000 border crossings. In Austria this would equal to a middle-sized city which suddenly needed to be transported. In Austria it would probably be possible to evacuate a middle-sized city with 20,000 inhabitants. (...) but the challenge here was not to accommodate stationarily but to provide them with a safe passage. (RC1)

Whether you can prepare for this in the form of “I have a concrete plan for this” – I doubt that. At the end of the day, the problem was solved because we were prepared with the SKKM. (RC1)

The explanation for the latter quote is that if the SKKM had not existed, then there would have been no crisis committee (“Krisenstab”) to manage this crisis on a Federal level and consequently also no responsible emergency response organizations nor the ZTM (RC1).

Interestingly, one interviewee (SO1) criticizes the crisis committee:

It requires a crisis committee that can actually process these things and which also has the organizational rights (“innerorganisatorisches Mandat”) to change things (...) I need to have a structure prepared for this even though you can’t perfectly prepare. (SO1)

Adding to this, another interviewee (MIA) who has extensive knowledge in e.g. setting up emergency shelters, mentioned the following regarding lack of preparation:
All of Austria pretended they never had to deal with any newcomers in this country and it was actually quite fascinating to see how little structure for coordination was created during the crisis. The first thing, we would need to be better prepared for such a crisis and it is kind of frightening if you think that an earthquake could also happen in Austria and what then? What's the plan? (MIA)

Contradicting to what has been stated before, the other interviewee from the ARC stated that 70% during a catastrophe are schedulable and the remaining 30% depend on the course of the crisis. Additionally, requirements constantly change throughout a crisis (RC2) although it should be mentioned here that the interviewee mentioned this in the context of relief supplies. It was no explicitly mentioned that this would also apply for transportation and emergency shelters.

Although the first phases of the crisis were rather chaotic (RC1, RC2), processes and structures were quickly established even though preparation was scarce:

Naturally, the longer the operation lasted, the better the processes worked out. That's the case with every operation. Also, you learn during every operation and the procedures became a standard in certain areas. Until December 2015 everything was running smoothly, also in the neighboring countries. (RC2)

- Question of well-engineered coordination systems

Interestingly, one interviewee (MIA) commented on the overall coordination process and, according to that interviewee, related lack of a central coordination committee in the following manner:

So person x would call person y in the BMI and that person would call person z and that was coordination in Austria. And then you would have a coordination meeting at some point where you’d meet for two hours but there was no operational coordination committee. (MIA)

The follow up question to this statement then concerned whether this interviewee is of the opinion that nobody in Austria had a clear overview of the situation. The answer shows that this interviewee does not believe so:

Everybody claimed they had an overview but they didn’t. There was no “there is 1,000 people there and 500 people there” in real time. This was not the case and I think this was a major weakness. (MIA)

Similarly to this, one interviewee (SOV) mentioned the following:

I actually had the feeling that there was nobody who really had an overview and I find that very worrisome (...) A lot of information was simply not available and I don’t think the problems lied at the operational command but rather in the higher organizational levels. (SOV)

The last quote implies that organizational problems were mainly at the governmental level which is in line with another interviewee’s (SO2) opinion.
5.1.3 Cooperation during transportation process

In this subchapter, the aspect of cooperation and the challenges that occurred in regards to the transportation process will be presented.

The main collaboration in regards to the further transportation processes happened between the organizations mentioned in table 5 that formed part of the ZTM together with shelter organizations (RC1). Other partners included neighboring countries where communication happened on a Federal level via the BMI and the involved NGOs, fire department and emergency response organizations (RC2).

- Divergent organizational cultures and objectives

During this crisis, various organizations and institutions needed to cooperate in order to manage the ongoing crisis. As for that matter, divergent organizational objectives had to be aligned. For instance, the ARC had the humanitarian aspect as a number one goal while the BMI was more focused on the security aspect of the crisis. For this reasons, it was crucial that major decisions were made collectively, so that these different objectives could be harmonized to the extent possible (RC1).

- Long-lasting operation and different planning horizons

Continuing from the last point, another important aspect was the unpredictable, yet long-lasting duration of the humanitarian operation (RC1).

There was always this big hope that it would end the next day. So long-term thinking was not there, it was not on the radar. (RC1)

Particularly problematic in this context were the deviant planning horizons of the organizations involved. Those organizations incorporated in the ZTM had all been active on a Federal level before and thus followed a long-term planning horizon. However, organizations that were active on a state or city level would not plan as much ahead (RC1).

Another consequence from this is that personnel, which mainly consisted of volunteers, became less and less available throughout the course of the crisis as the requirements (e.g. operating day and night) remained high over an extended period of time. This became especially visible after 1,5 months into the crisis (assumably in the second half of September 2015) (RC2).
Political complications

It can be said that the political environment during this crisis had a strong influence on some of the logistical processes. The manner in which Hungarian authorities treated refugees affected the logistical processes to some extent (see next challenge “lack of trust”). One interviewee commented on the political circumstances as the following:

It was a political way of operating of our neighboring countries that many things were artificially impounded (“künstlich aufgestaut”) so that suddenly we would be confronted with 10,000 to 15,000 people at the border without any prior information from the neighboring countries. (RC2)

Alleged political actions, as described above, would consequently also negatively contribute to the previously discussed challenge of “vast flow of refugees” as refugees would be sent in big crowds to the Austrian borders (as was shortly discussed in the case description) where consequently existing transportation capacities would be overstrained.

Political complications were also visible in the context of opening up a shelter as this required the permit provided by the mayor (MIA, RC1). One interviewee commented on these legal problems as the following:

It is unbelievable that in this country politics cannot be put aside for five minutes in order to manage a situation like this and that we say “ok, we accommodate 4,000 people here. We all agree that this is not a solution but this is what we are going to do for now” (MIA)

More regarding this in “legal constraints for opening up a shelter” in chapter 5.2.3.

Lack of trust

One problem that exacerbated efficient transportation were trust issues of the refugees towards the organizations at the Austrian borders to Hungary. One interviewee mentioned that the support which the refugees received along the route to Austria “did not correspond to the ARC’s ideas” (RC1). Another interviewee mentioned that violence, misguidance and misinformation in Hungary caused the refugees to be extremely cautious at the border.

Almost all of them said that Hungary was the worst they had to experience and how they were treated there. So they were afraid when it came to the means of transportation that were organized for them. Buses were ready but they refused to enter them because of their experiences in Hungary. (SO3)

According to this interviewee (SO3) and the information presented in the case description, the Hungarian authorities and organizations had placed the people in
buses with the promise of taking them to the Austrian border. Instead they were often brought to camps and shelters under terrible conditions. Due to this, two interviewees (RC1, SO3) have stated that the previous experience caused delays and problems in regards to transportation as it was challenging to persuade the refugees that this time they will in fact be taken to the German border. The following quote illustrates how the trust issues were further reinforced by the impression and possible threat of authoritative figures:

I’m fleeing into a supposedly safe country after a long and exhaustive route and then I’m approached by somebody who most likely wears a uniform. That would be somebody from an executive authority, the military or the Red Cross – as they also wear uniforms in Austria – and that person then tells me “you have to get on that bus”. It is difficult to establish a bond of trust here and it is very hard to verbally communicate to that person that this is meant as a relief so they would not have to continue on foot anymore. (RC1)

This problem was further aggravated by the fact that language barriers and connected communication issues (see next chapter for more details) were a common problem at the border to Austria. When the refugees could not be directly transported to the German border this needed to be communicated. As communication was difficult due to these language barriers, trust issues were possibly further reinforced when the refugees had entered the bus and where then transported to a shelter instead of the German border as they had expected (RC1).

One interesting example in this context was mentioned by one interviewee (SO2) that emphasized the importance of not raising any potential suspicion among the refugees:

It often happened that they had a full bus and then wouldn’t know where to bring those people so they just kept driving through Austria for hours with the instructions of not taking the same routes and not going in circles. Instead they should drive as if they had a clear destination so that the people don’t realize they are going in circles for five hours because they simply don’t know where to bring them. (SO2)

This would then continue until the bus drivers received clear instruction on where an emergency shelter is available that they can transport the refugees to (SO2).

How much these trust problems actually impacted the transportation logistics is difficult to say at this point. Undoubtedly, it would form part of the more minor challenges during this crisis. Nevertheless, as these were mentioned by two interviewees it would be incomplete to not list it here.

5.1.4 Communication and access to information

This subchapter will cover the findings in terms of communication. This not only involves the communication between the actors responsible for transportation of the
refugees but also the communication between the logistical actors and the refugees to that extent as it affects transportation.

Communication was conducted via various channels. One crucial channel was the Red Cross networks across country borders where current information was transmitted. Some information was provided by the BMI from other Federal governments and from the Austrian military that received data via secret service channels (RC2). So information was often transmitted via kindred institutions. However, access to real-time information in order to be able to plan accordingly represented a serious challenge especially in the beginning when networks still needed to be developed (RC1) as the next paragraph illustrates:

- No real time information

Access to concrete and current numbers of how many refugees to expect was critical. The UNHCR constantly gathered static information regarding the flow of refugees but these were not real time data, which would have been required in order to adequately plan and predict the transportation processes (RC1).

From a logistical perspective, I was extremely surprised that they [responsible authorities along the route] didn’t manage to reasonably streamline information [regarding the refugee flows in states prior located to Austria]. I was expecting that we would quickly receive information from the other states along the flight route after it had become apparent that they were also faced with the same challenges. However, this simply didn’t work (RC1).

It can be assumed that if this information had been available throughout and before the crisis then preparation and planning would have been more needs-based and feasible.

Consequently, the necessary information needed to be collected through other channels which then led to the establishment of informal networks in order to transfer the latest available data (RC1, RC2). These informal networks consisted of e.g. ARC actors connecting with old colleagues which were located in countries along the flight route to Austria. Real time information was then simply passed on via phone call (RC1) as the following quote illustrates:

The network coordinator remembered he had once taken a course with a Hungarian colleague working for the Federal railways I think and he then simply called him and that Hungarian colleague told him the numbers on the phone in the form of “on the next train will be so and so many refugees.” (RC1)

These informal networks helped establish an information chain for the first time. However, access to information across borders was generally hard to gain (RC1, MIA)
and communication with neighboring countries was of informal and unstructured nature (MIA).

One positive aspect in this context was the good bilateral relations with Bavaria. The border crossings to Germany were “principally open but with restrictions” (RC1).

- Language barriers

Related to the previously mentioned problems about “lack of trust” (can be found in chapter 5.1.3) are language barriers. Translators were mainly needed in languages such as Farsi and Arabic, (SOV; RC1, SO2) yet not available in sufficient amounts and not at all times (RC1). As an example, one interviewee stated if 1,000 refugees need to be prepared for transportation, meaning the needed explanation where the bus is going (border or shelter) and how they will be divided in order to not disrupt family constellations. These 1,000 people equal to 20 buses à 50 people per bus and especially during the night when people were commonly transported to shelters instead of the German border, even more explanation was needed (RC1). Furthermore, the speed of the transportation process was significantly enhanced if people were divided into groups of 50 in advance. However, for this, translators were crucial especially if a family was reassigned to another bus because the remaining capacity on the previous bus could not fit the whole family and separating them was not an option (RC1).

5.2 Emergency shelters

Generally, two types of shelters were important during the crisis: firstly, emergency shelters which were meant for a short stay (meaning a few days) in order to recover and subsequently continue towards Germany and other destination countries and secondly, permanent shelters for those refugees that sought to stay and apply for asylum in Austria and were waiting to be incorporated into the Austrian asylum system.

Although this research focuses merely on the first type, distinction can at times be critical as some shelters, which were originally destined to be preliminary ones evolved into permanent shelters during the course of the crisis. One example for this is the refugee shelter in Traiskirchen which was initially destined to be a transit shelter (MIA) However, this will be discussed in more detail later.

For this research, all participants were directly or indirectly involved in the establishment and administration of shelters. Private initiatives to establish emergency
shelters came from two aid organizations and one charitable organization (all of them are referred to as shelter organization 1-3).

Similarly to the further transportation chapter, this chapter will focus on the coordination, communication and collaboration aspects in regards to shelter logistics. Furthermore, requirements for emergency shelters, as stated by the interviewees, will be given. Later on, the role of social media and volunteers will be illustrated as this emerged to be a critical aspect throughout the crisis. Evacuation logistics was mostly relevant in terms of accommodation, therefore, this will also be presented in the following subchapters.

### 5.2.1 Requirements for emergency shelters

This subchapter will shortly present the qualifications that potential shelters needed to fulfill in order to be a suitable and acceptable accommodation.

Generally, emergency shelters were only intended for an intermediate stop when further transportation to the German border was not possible, either because of the late arrival of refugees at night or when the capacities for border crossings had been filled for that day (RC1, RC2). Ideally, refugees were then accommodated along the route (RC1) or close to the border (RC2). During the first phase of the crisis, shelters of all kinds and sizes were used in order to provide the refugees a place to temporarily stay and rest (RC1, SO1). However, throughout the course of the crisis, the focus was shifted to shelters that offered sufficient space to accommodate a minimum of 100 people (small-scale shelters often resigned from offering due to irregular demand) and ideally, a total capacity that represents a multiple of 50. The minimum capacity of 100 is easily explained as the logistical effort to deliver and further transport on a frequent basis to many small-scale shelters became disproportionate (RC1). As buses became the main mean of transportation in the course of the crisis (RC1) and as has been explained before, a normal-sized bus can hold approximately 50 people (RC1, SO1), delivering to shelters that offered a capacity of a minimum of 100 people (which equals to two buses) and a multiple of 50 were generally preferred, as the following quote further emphasizes:

*An emergency shelter with a capacity of 120 was good but could not be filled because it makes no sense to send a third bus there when later on the people on the bus have to be split up. (RC1)*
Other requirements included sufficient sanitation facilities (RC1, RC2, SO1, SO3), exit and evacuation possibilities (RC1), food distribution centers (RC1), hygiene standards (RC1), space (RC1, SO1, SO3), electricity (RC2), water (RC2) and heating (RC2).

Partly in contrast to the statements of interviewee RC1 regarding the minimum capacity of the shelter of at least 100 people, another interviewee (RC2) stated that any size of shelters were accommodated as long as the basic requirements were fulfilled. If necessary, shelters that almost fulfilled the criteria where then merely supplemented with the missing requirement (e.g. lack of sanitation was amended with shower containers) (RC2). However, it might be possible that the any size of shelters were only used in the very beginning of the crisis when shelters were still a scarce resource.

- **Unclear capacities**

Some problems arose as the available capacity was usually not a fixed number but strongly dependant on the amount of time people would approximately stay in the shelter (SO1).

The following quotes relate to when organizations were called in order to ask whether they still have some spare capacity for more refugees:

> There we would usually inquire “for what time period?”, meaning that if they stayed for three days then of course we can accommodate more people because the dynamics that result from this are different compared to when somebody says that those people are moving in now and they will stay for the next three months because then I need more room and privacy which I don’t need to that extent for only three days. (SO1)

> Sometimes they would call us and tell us “we have two buses here, if you don’t take these people in then the consequence is that they have to sleep either on the street or on the bus. Do you still have room? Yes or no?” and then we often said there’s enough room for two nights but dynamics in this house won’t sustain longer than that. (SO1)

Table 6 describes and compares some shelters that were discussed in more detail during the interviews. It should be noted that “capacity” does not refer to the maximum amount of people that could have potentially be accommodated but the amount the shelter was prepared for at the opening.

As can be seen from the table, most shelters were opened in the middle of September. Preparation often needed to happen within a matter of hours and one shelter was opened and closed several times.
<table>
<thead>
<tr>
<th>Shelter</th>
<th>Date of opening</th>
<th>Time for set up</th>
<th>Capacity (people)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports hall</td>
<td>Three dates of opening that required entire adaptation to be repeated</td>
<td>Several hours</td>
<td>600</td>
<td>public enragedness (demanded facility back)</td>
</tr>
<tr>
<td>Bus garage</td>
<td>September 15th, 2015</td>
<td>6-7 hours</td>
<td>150</td>
<td>no heating</td>
</tr>
<tr>
<td>Storage room in gardening shop</td>
<td>September 19th, 2015</td>
<td>24 hours</td>
<td>500</td>
<td>lack of sanitary facilities</td>
</tr>
<tr>
<td>Open space office (2.000-3.000 m²)</td>
<td>Second week in September 2015</td>
<td>same day</td>
<td>160-170</td>
<td>lack of sanitary facilities (showers)</td>
</tr>
</tbody>
</table>

Table 6 Description of shelters (based in findings)

Generally, the length of stay of the refugees at an emergency shelter was intended to be very short. Time periods varied from one day up to two weeks (RC2), a few hours (SO3, SOV) or often two nights (SOV).

It should be mentioned that this list is exemplary and not exhaustive. It is meant to give an impression of the available shelter types and its characteristics but does not display a full description.

5.2.2 Coordination and distribution

Each state in Austria was assigned a number of refugees that it was required to take in (RC1, RC2). Problems occurred as some states then refused to accept more as soon as their number was fulfilled (RC1). Allocation to the individual shelters was conducted by the BMI and the Red Cross on a Federal level depending on whether the refugees sought asylum in Austria or requested to be further transported to Germany (RC2). For the allocation process, common IT programs for humanitarian operations were used for which the individual districts and states needed to register their available shelters including important information (e.g. access to water). The military, the ÖBB, the ARC and the BMI had access to this IT program (RC2, SO3). These programs offered an overview of the capacity utilization on a Federal level. In contrast to this, one interviewee (MIA) emphasized that there was no central coordination system which provided an overview of the current situation and available capacities of Austria. This is especially interesting as this interviewee was working closely together with the BMI and had substantial previous knowledge in humanitarian logistics and operations.

With this amount of people you would usually install an operations center and this was not the case in Austria. They would have needed to (...) combine their powers, so all institutions that were involved should have worked together in such a center and from there they would have coordinated all actions, with an information system, with logistical coordination and so on.

(MIA)
Evidently, this would go beyond the mere coordination of emergency shelters but also concern the overall coordination of all logistical processes, meaning, as it can be assumed, that it would also involve the ZTM. However, this statement was mentioned in the context of emergency shelters.

On a more local level in Vienna, a crisis committee in which all relevant organizations such as police (for security), Wiener Linien (Vienna public transportation company; responsible for transportation within Vienna), the military (further transportation and supply of food), hospitals, rescue organizations as well as other smaller organizations and in joint effort with a refugee coordinator, Christian Konrad, were responsible for the coordination and distribution of the refugees in that area. Shelter organization 1 later was also included into this crisis committee (SO1).

Logged crisis meetings were conducted on a daily basis during the peak of the crisis (SO1, SO3). Shelters located in the Viennese area were registered at the city administration including information such as location, capacity, preferred group constellations (e.g. families) and in case of demand authorities would then call the organizations and inquire about available capacities (SO1, SO3). Several interviewees have stated that the coordination and organization on a local level in Vienna was conducted in an efficient and successful manner (SO2; SO3) as opposed to the Federal level (SO2).

Transportation to the individual shelters was then conducted by bus (SO1, SO2, SO3, RC2) or trains (RC2).

- Unsteady demand for shelters

The volatile flow of refugees led to an irregular demand for shelters (RC1, SO1). This was especially challenging for the small-scale shelters as they often had to be repeatedly closed and later on reopened due to a new wave of refugees (see table 6) until some completely resigned from offering shelters as this ad hoc reopening scheme became too troublesome.

We had no regular demand and this was neither planable nor predictable. So we usually had to decide at short-notice with a lead time of two to three hours which shelter we will run-up and which stays closed for the night. (RC1)

One interviewee (SOV) was closely involved in this problem:
On the weekend, our shelter was fully occupied for the first time and then we were told they no longer needed this shelter. Everything was closed and three days later they called us whether we would be willing to reopen and ready to help. (SOV)

These redundancies of having to set up a shelter, dismantle it due to lack of demand and then re-open it a few days later caused additional stress and unnecessary effort.

- False information

Partly related to the previous challenges was a problem that one interviewee (SOV) brought up, namely, that every now and then a certain number (e.g. 300 as it was mentioned during the interview) of refugees would be announced which would then not be delivered to that shelter without prior cancellation. This was especially troublesome as people would prepare accordingly and, as it was the case in 2015, many of these were volunteers. Issues like this would contribute negatively to voluntary participation in the future. Similarly, sometimes (seven buses of) refugees were transported to the shelters without prior announcement which would then lead to a serious lack of personnel (SOV).

- Misused shelter

One interviewee (MIA) was working in close collaboration with the people responsible for the shelter in Traiskirchen (located approximately 33 km from Vienna and 75 km from Nickelsdorf by car). Traiskirchen was planned to be a center for the initial reception and designed for a short stay. However, during the crisis, the shelter in Traiskirchen developed more and more into a temporary instead of an emergency shelter. At the same time, it was not well-suited for it. Substantial problems were also caused by the lack of legal approval to set up additional shelter capacities in the form of containers or tents (MIA) (more regarding this in the challenge “legal restraints for opening a shelter” in the next subchapter).

5.2.3 Cooperation and support

Generally, the types of organizations, apart from the ARC, that provided emergency shelters was multifaceted (RC1). Initially, the ARC and blue light organizations, such as the fire department, were responsible for setting up emergency shelters (RC2). As the crisis progressed and the amount of refugees started to exceed available capacities, other organizations were required to step in (SO2) which also explains that the shelters listed in table 6 opened around the same time. Interviewee SO2 emphasized that the Austrian government was simply incapable of handling the crisis appropriately which
made it necessary for these private organizations and NGOs to contribute to the crisis management via providing e.g. emergency shelters (SO2). Table 7 gives an overview of the type of buildings and spaces which were used for emergency shelters and the level of experience in the logistical area for each interviewee/organization.

<table>
<thead>
<tr>
<th>Code</th>
<th>Type of organization</th>
<th>Previous experience</th>
<th>Types of shelter</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC1</td>
<td>humanitarian</td>
<td>considerable</td>
<td>tents</td>
<td>along routes; Austria</td>
</tr>
<tr>
<td>RC2</td>
<td>humanitarian</td>
<td>considerable</td>
<td>tents, schools, town halls, cultural halls</td>
<td>Austria</td>
</tr>
<tr>
<td>SO1</td>
<td>aid</td>
<td>little</td>
<td>open space offices, rectories</td>
<td>Vienna</td>
</tr>
<tr>
<td>SO2</td>
<td>charitable</td>
<td>only permanent shelters</td>
<td>bus garage, storage room of gardening shop</td>
<td>Vienna</td>
</tr>
<tr>
<td>SO3</td>
<td>aid</td>
<td>partly* and permanent shelters</td>
<td>sports halls, pavilions in hospital</td>
<td>Vienna</td>
</tr>
<tr>
<td>SOV</td>
<td>volunteer</td>
<td>social work</td>
<td>sports halls</td>
<td>Vienna</td>
</tr>
<tr>
<td>MIA</td>
<td>governmental</td>
<td>considerable</td>
<td>tents, containers</td>
<td>mainly Traiskirchen</td>
</tr>
</tbody>
</table>

*interviewee had no previous experience in logistical area, yet some departments in organization did

**Table 7 Interviewees' experience in shelter logistics (based on findings)**

It is worth pointing out that the list for “types of shelters” is not exhaustive but exemplary for the kinds of shelters that were discussed during the interviews.

- **Legal restraints for opening a shelter**

Before one was allowed to repurpose a facility into a shelter or set up a tent, the permission of the mayor of the respective city or village was required. Due to this, many suitable potential shelters remained unused because the approval from the city government failed (RC1, MIA). In Vienna, this problem was generally not existing (SO1, SO2, SO3) but in Traiskirchen this had caused serious lack of shelter for a high amount of refugees (MIA).

- **Lack of emergency shelters**

Generally, finding a location for a shelter when it came to refuctioning existing buildings and facilities was not the problem (SO1, SO2, SO3, RC2). However, one interviewee (MIA) stated that when mobile shelters, such as containers and tents
needed to be used, the supply would soon be exhausted. Only after significant time had passed, MIA pointed out that Austria was of the UNO and therefore privileged to be provided with spare material (such as emergency shelters) from the global stocks if urgently needed. However, the process of organizing these emergency shelters was complicated and lead time before delivery was substantial. Delivery took place at the beginning of 2016 after a total of two months of waiting (MIA).

Ad hoc implementation

One major problem which is most likely also strongly connected to lack of communication and which four (SO1, SO2, SO3, SOV) out of seven interviewees pointed out to have been the main challenge was the short-notice request to set up an emergency shelter (also see table 6 for how much time they had and table 7 for their level of experience). One interviewee who had no previous experience with setting up emergency shelters under time pressure described the process as following:

They called us at 4 pm as - we were all ready to go home - that we needed to come to the 11th district [of Vienna], they told us the address. There we were provided with a garage where they usually washed the buses and which had been recently emptied. Then we needed to turn this into an emergency shelter by nighttime [within 6-7 hours]. (SO2)

With one emergency shelter we were told to take a look and in the best case, open it the same day. The other one was similar, we took it over on Wednesday, asked for a week of lead time and on Friday they asked us to open it that same Friday evening (SO1)

This partly relates back to the previously discussed point of “lack of preparation” in chapter 5.1.2.1.

Lack of current numbers of refugees also caused the shelters to receive short notice information.

It can’t be that someone coming from Greece is faster than us receiving information that we need to prepare a shelter for them. (SO2)

So the lack of real-time information was not only problematic for the further transportation but also for the shelters as it impeded appropriate planning.

Unaccompanied minors

According to two interviewees (MIA, SO3), unaccompanied minors posted a challenge as the states of Austria refused to take on responsibility for them. Simultaneously, many refugees without identification would claim to be minor as chances for asylum were generally better (MIA).
5.2.3.1 The role of volunteers

Volunteers played a crucial role during the refugee crisis. Especially for the establishment and administration of shelters, volunteer workers became indispensable (RC1, SO1, MIA, SO3, SOV). Four out of seven interviewees stated that the overcoming and management of the crisis would not have been possible without volunteers (SO1, RC1, RC2, MIA). Of the 70,000 people working for the ARC, approximately 60,000 were volunteers (RC2).

The following quote further highlights the extreme importance of them:

The whole system in Austria rests upon a voluntary basis whether it's the fire department, the mountain rescue, the Caritas or us, the Red Cross. If we hadn't had those volunteers then the situation would have been fatal because this would not have been manageable with only full-time agents. (RC2)

One interviewee even attributes the major role in terms of logistics to have been contributed by volunteers (MIA).

From the collected data, three types of volunteers could be established which are illustrated in the table 8 below. The information presented comes from interviewees SO1, RC2, SOV, SO3 and MIA and was summarized to establish these divergent types. The table provides a description for each type and their impact in practice during the crisis.

<table>
<thead>
<tr>
<th>Type</th>
<th>Label</th>
<th>Description</th>
<th>Practical influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>Professional volunteers</td>
<td>previous experience in working with humanitarian organizations such as IRFC</td>
<td>supported ARC, fire department and other organizations throughout transportation process and shelter set up; substantial prior experience in humanitarian context</td>
</tr>
<tr>
<td>Type 2</td>
<td>Organized volunteers</td>
<td>volunteers with no specific experience in an humanitarian context; organized via a platform or social media</td>
<td>very useful; often worked as e.g. translator, organizers and coordinators in shelters, in administration; depending on the their previous experience</td>
</tr>
<tr>
<td>Type 3</td>
<td>Unorganized volunteers</td>
<td>unregistered and unexpected; show up unannounced at shelters or border to help or deliver goods</td>
<td>chaotic; often caused extra work (e.g. removal of useless donations)</td>
</tr>
</tbody>
</table>

Table 8 Types of volunteers (based on findings)

However, it should be noted that the organization of the volunteer also posed some minor challenges to the logistical processes. This also strongly depended on the type of volunteer. Some could be organized via a platform called “Team Österreich” (“Team Austria”) provided by the Red Cross where interested people had the possibility to sign up and were subsequently allocated where needed (RC2) (referred to as type 2 in table
8). In contrast to this, type 3 volunteers which would approach the crisis hubs announced often posed additional problems to the logistical processes in the form of unnecessary donations which then needed to be removed and disposed off (RC2, MIA).

For this purpose, clear structures and processes needed to be established within these shelters in order to enable efficient shelter maintenance. In practice, this meant that these general procedures could be followed independently of the person currently working (RC1, MIA). These temporary structures were developed flexibly throughout the processes (MIA).

- Unpredictable end of crisis

Related to the challenge with the long-lasting operation was the unpredictable end of the crisis. Due to lack of real-time information it was difficult to estimate the future flows and demands (RC1). This also had a strong influence on the volunteer workers. One interviewee (SOV) who volunteered during the beginning of the crisis stated the following regarding this problem:

   In the first three months, it was mainly volunteers working there [at an emergency shelter] and they also did night shifts. That might still be fun for the first three weeks when you’re still on summer break from university but at some point it’s not so much fun anymore. And that became visible and the atmosphere suddenly changed. (SOV)

The unpredictability of the end of the crisis relates back to the long-lasting operation. It can be assumed that the long duration in conjunction with the unpredictable time of ending caused a serious problem not only for transportation but also for shelter logistics.

- Difficult access to information

Similarly to the current flow of refugees in their way to Austria, lack of information also posed a serious problem when it comes to shelter logistics. In this context, one interviewee (SO1) mentioned the importance of learning to anticipate certain problems throughout the course of the crisis:

   At some point you basically just back away from getting this information because we realized how dynamic the overall situation was. Unfortunately, we had to learn how to deal with this that you can’t always get the information you need. We needed to anticipate certain challenges and prepare accordingly. (SO1)

The next subchapter will illustrate the information flow in more detail from the perspective of the volunteers.
5.2.4 Information flow and the role of social media

One crucial tool for effective communication flow among the volunteers were different social media platforms. The following subchapter provides an example for social media and describes how it was used to satisfy any upcoming needs.

Social media has helped substantially to quickly collect and receive help and support for various purposes (SO3, SOV, MIA). The main channels were Facebook, Twitter and Whatsapp (SOV). These ranged from donations, to support and coordination at the railway stations to volunteers helping set up and administrating emergency shelters (MIA, SO3, SOV). These flexible structures often emerged and developed within a short period of time, were not following a clear setup and developed independently from formal structure (MIA, SOV).

One interviewee (MIA) described it as the following:

I think that this [crisis] is a nice example for how mobilization and basically also how structures can develop in a very agile way. So the structures of the future are no rigid ones or big institutions but rather small capacities that you bring together and without these volunteers, this would have been a disaster. (MIA)

Figure 12 illustrates two examples of how social media (in this case Facebook) was used in order to gather volunteers, relief supplies or any other kind of help needed.

![Figure 12 Examples of social media entries (Ferry Initiative, 2019)](image)

The entry on the left explains that a stadium had been opened as an emergency shelter on short-notice and that helpers and translators are urgently needed. The entry on the right is in fact the first entry to be published on the Facebook page “Ferry Initiative” on 15th of September, 2015. It states the exact time and announces that “several hundred refugees” had arrived and that more and more buses are coming. Consequently, the purpose is to ask for donations of blankets and to state that there has been no organized communication to two other initiatives, namely, “Train of Hope” and “Wir helfen” (“we help”, an association founded in 2010; Wir helfen e.V., 2016). As “Train of Hope” (which has been briefly discussed in the case description) was also initiated and
organized by volunteers, this example further emphasizes the crucial role of volunteers in order to manage the vast influx of refugees during the most critical months in 2015.

Also important in terms of access to latest information was Twitter. With this social medium, hashtags (#) played a crucial role, the most important ones being e.g. #hauptbahnhof or #refugeeswelcome. These were used to estimate the approximate number of refugees that were at a certain railway station in Vienna (Hauptbahnhof and Westbahnhof) or how many had just arrived in Nickelsdorf. With this information, planning whether a shelter would potentially have to re-open or expect a new wave of refugees was facilitated (SOV).

The people from the Train of Hope took daily pictures of the numbers of how many people were at Hauptbahnhof and these were then published. At some point it was clear that when 8,000 people arrived in one day that we would have to expect some at our shelter. On days when it was only 2,000 then they could maybe deal without us. (SOV)

This quote further illustrates how these informal networks were organized via social media and coordinated, mostly by volunteers, functioned and managed part of the crisis during the peak.

5.2.5 Use of evacuation capacities

The question of evacuation logistics was raised in six out of seven interviews (except for SOV, the volunteer). No detailed information in regards to possible transportation channels or means of transportation meant for the event of an evacuation were mentioned (RC1, SO1 SO2, SO3, MIA).

As far as I am aware, there is no evacuation concept for a bigger area in Austria. I could imagine that some exist but I don’t know them. In further consequence, this would also mean that we had no previous model along which we could have developed the ZTM, meaning that the ZTM was developed throughout the ongoing operation in an uncontrolled manner (“im freien Fall”). (RC1)

One interviewee (RC2) merely pointed out that SOPs are available within the ARC and that the IT programs which were used for shelter allocation and transportation logistics could easily be adapted to an evacuation scenario in Austria. However, designated evacuation shelters were used during the refugee crisis, according to RC2. In case of an evacuation, tents are the last resort in terms of emergency shelters as the following quote explains:

If people in Austria need to be evacuated due to floods, avalanches or similar then the last resort is to accommodate them in tents. Instead, we try to take them to solid shelters. So we have evacuation plans in every district, in every state where, for instance, schools, town halls or event halls can be used. (SO2)
These designated facilities can be turned into emergency shelters within a matter of hours as each district is also provided with a certain amount of necessities, such as camp beds. One major advantage of these facilities compared to tents are available electricity, sewage systems and access to water (SO2).

- Question of unused shelters

Two interviewees mentioned that they knew of shelters which would be qualified and equipped for the purpose of providing shelter to the arriving refugees but which remained unused even after inquiry.

The military seemed to have often mentioned that they cannot become active and get involved as long as no clear order had been given. Also, the military barracks were well equipped in order to function as shelters. However, they would not be used as such (SO3).

Before I invest money in an empty office space to turn it into an emergency shelter, why would I not just use the barracks for this? This was one question that we kept asking ourselves as the barracks would have been big enough. (SO3)

Similarly to this, one interviewee (SO2) pointed out that there was a well-equipped refugee hostel in Vienna which was established during the Bosnia crisis and meant for crisis situations that remained closed during the entire crisis. After inquiring multiple times via phone, the answer provided would always be “it is meant for something different”.

The exact reasons why these potential capacities remained unused could not be identified during the interviews. However, it gives rise to questions why these equipped shelters were not used.

5.3 Comparison to past crises

The crisis in 2015 was the fourth major refugee crisis in Austria since 1955 (beginning of the Second Republic). To what extent this crisis differs from previous crises was discussed in all interviews except for the one with the volunteer for shelter organization 3.

They have never done this in that manner. What they did during the Hungary crisis is that they did receive them at the borders but it was not the same amount nor the same operation duration. (RC1)
Other differences to past crises were rather mentioned in the area of legal asylum status that affected more the usual quick transition from emergency shelters to temporary or even permanent ones as access to the job market was easily possible (SO1, SO2).

One interviewee mentioned that the processes for the crisis in 2015 were completely reinvented and no reference was taken from past crises (RC2). Two interviewees (RC1, SO2) mentioned that this refugee crisis is not comparable to the past refugee crises in terms of volume as these was substantially higher during 2015. Also, proximity to the reasons of the crisis and familiarity with the people and/or country of origin has led to increased willingness to help (according to SO2) in the past compared to the Syria crisis in 2015.

It’s different when you see pictures from the former Yugoslavia where I have been on vacation to and those pictures and faces look familiar to me as if I would know these people personally. (SO2)

Another point of interest that was emphasized during one interview was the importance of smartphones. One interviewee claims that organization in such volumes that led to the vast flow of refugees, as it was the case in 2015, was only feasible because the refugees were able to organize themselves via their smartphones (SO2).

5.4 Suggestions for improvement

In this section, an overview of potential opportunities for improvement which could be used for similar future crises as suggested by the interviewees will be presented. Two interviewees (SO1, RC2) mentioned that better preparation and management of a similar future crisis would be given, as the people who are now experienced in this area would be more aware of how to approach a situation like the one in 2015.

It was a big learning process also for Vienna, how this might be handled differently in the future if something like this were to happen again. (SO3)

The idea can therefore be said to rely on tacit knowledge of the actors that were involved in the last crisis.

Access to information for better planning

Access to real time information was critical for the successful planning and implementation not only for transportation but also to prepare the shelter organizations accordingly. However, access to exact numbers of refugees coming from Hungary via the railway station Hegyeshalom (located approximately 7 km on foot to
Nickelsdorf) was restricted. Covering this distance on foot gave the Austrian organizations approximately an hour of lead time. One suggestion here was the installation of an IP camera at the railways station in Hegyeshalom in order to collect real-time data. However, implementing these ideas turned out to be extremely troublesome (RC1).

In addition to that, one interviewee mentioned that it is crucial to connect sooner with other affected states. Those located earlier on the route to access and obtain valuable information to plan ahead and prepare transportation logistics as well as shelters and those located after in order to plan the possible amount of border crossings (RC1).

**Communication and establishment of trust with refugees**

Another crucial point of improvement would be to effectively distribute information among the refugees without the constant presence of translators. This could have happened in the form of providing access to internet and putting up QR codes that only need to be scanned in order to receive updates on the current status quo. These could then be provided in several languages at once. In addition to that, pictograms and videos could have been provided for illiterate refugees (RC1).

**Create additional personnel resources**

As has been explained before, volunteers formed a major part of the people that were actively involved in the management of the crisis. However, as the operation went across a substantial time period, the available resources in terms of personnel became scarce due to exertion. Thus, one interviewee pointed out that more personnel needs to be available if a similar crisis were to hit Austria again (RC2).

**Integration of long-term perspective into coordination**

As has been explained before, the long-lasting duration of the crisis posed a significant challenge on the logistical processes. Therefore, one interviewee mentioned the importance of the crisis committee on a Federal level that acts within a long-term planning horizon and has legal power that induce changes. Especially important here would be to have better prepared processes on a Federal level that can be activated within a short period of time (SO1).
Better evacuation plans

One interviewee pointed out that preparation for disasters needs to be better planned in the future. In this sense, this interviewee was mainly concerned with available shelters and facilities that could be refunctioned. Also clearer coordination structures and responsibility allocation were named as areas for potential improvement (SO3). Related to this would also be increased awareness and early admission that this kind of crisis is happening and might potentially affect Austria. Therefore, preparation is crucial (SO2).
6 DISCUSSION

The following chapter will discuss the empirical findings and compare these to literature provided in the theoretical framework. The aim of this is to establish the differences and similarities of this study in light of existing knowledge and identify the contribution to academic literature in regards to logistical challenges during refugee crises in general and especially for the crisis in Austria in 2015.

The discussion chapter will primarily pay attention to the most important challenges that occurred during the refugee crisis in 2015. Explanations on why these are problematic, how they compare to past refugee crisis and current literature as well as implications for future crises are given. The role of volunteers and social media will be discussed in a subchapter as these emerged to be of particular importance during this research. At the end of this discussion, a quick overview and discussion of the less important and yet relevant challenges, which are also worth mentioning, is given.

6.1 Reference from past crises and preparation level

One important aspect that formed a substantial part of this study was whether those logistical actors that were active during the 2015 refugee crisis in Austria took any reference from past crises. Literature, according to Minear et al. (2000) had indicated that during the past Kosovo crisis, no reference from previous crises was taken. This research further confirms that no precise knowledge or experience from past crises has been implemented or adapted during the 2015 refugee crisis. Naturally, it could be said that some existing mechanisms, such as the SKKM, which were created post-crisis in order to be better prepared for any kind of crisis (whether it is man-made such as the refugee crisis or natural), are potential evidence that Austrian authorities realized the lack of preparation and coordination of resources as soon as a crisis would hit.

Nevertheless, as one interviewee had mentioned, refugee crisis are not a new phenomenon in Austria so it is interesting that lessons from past experiences were completely neglected and ignored or perhaps simply never documented. Consequently, this would only further contribute to having to develop and deploy the necessary processes again, or “reinvent the wheel” as some interviewees referred to. Although the common opinion among the interviewees was that after October 2015, these processes and procedures worked well, it could still be argued that some issues and challenges in the first months (with special focus on August and September 2015) could have been prevented or at least reduced if preparation had been more elaborate. As the refugee
crisis in 2015 can be categorized as a slow on-set disaster, a certain degree of preparation would be possible, according to Jahre and Heigh (2008). The topic of preparation was highly discussed during the interviews. However, the different views varied from some claiming that preparation is not possible nor planable, some stating preparation was insufficient to some suggesting that preparation was done to the extent possible. Of course, every crisis, even every refugee crisis is different which leads to the consequence that there cannot be a universal plan in order to be prepared for every possible crisis situation. Dash et al. (2019) emphasized the different and unique circumstances under which a crisis occurs and which consequently aggravates appropriate planning and implementation of SOPs. Furthermore, as was stated by one interviewee and confirmed in literature (Van Wassenhove and Pedraza Martinez, 2012), the circumstances are dynamic and constantly change. Evidently, this would also have to be reflected in the planning and forecasting methods. Nevertheless, as some interviewees pointed out, this lack of preparation is worrisome to this extent, as Austrian authorities seem unprepared for the case that a disaster were to happen within Austria that would require effective and fast evacuation. In line with this, Mermino et al. (2014) suggested that certain degree of standardized procedures would enhance supply chain resilience.

6.2 Informal communication networks and short-term thinking

When questioned about how to handle a similar crisis in the future, many interviewees referred to the logistical actors now having gained the expertise on how to manage such a situation and that they now have their informal communication networks, which were established during the crisis, in place. However, for future references, this would require to have the same people to act in the same positions as during this crisis in 2015. None of the interviewees was logistically involved in the last refugee crisis which took place during the Yugoslavia wars until 1999. As was discussed in the previous subchapter, this can be assumed to be one major reason why no reference was taken from this crisis as none of the interviewees was active during it. Consequently, this would then also lead to the assumption that there is a good possibility that none of these actors from the 2015 crisis will be involved in the next one. This would have several severe implications. One aspect is that tacit knowledge and expertise would be lost. As was mentioned in literature by Kovács and Spens (2009) this is one crucial consequence from high rotation of personnel and it is safe to assume that this would be most likely also the case for the next crisis if a significant amount of time passes. With
the insight and knowledge that was gained during the 2015 crisis, relying on such informal and unofficial factors can be said to be evidence of serious short-term thinking which follows the assumption that the same personnel resources will be available during the next crisis. It is questionable, whether official, formal disaster management mechanisms were adapted and improved after this crisis. At least none of the interviewees mentioned anything regarding this, which implies that supposedly the same institutions with the same coordination structure and possibly same related weaknesses would become active during the next crisis.

Apart from this, these informal information and communication networks can be said to aggravate comprehensibility and efficiency of communication. It is safe to assume that some information might potentially be lost during these processes and that far-ranging distributions of information clearly lacks efficiency and efficacy. Effective distribution of information has also been recognized to be crucial during evacuations by Pet et al. (2012). Access to (current) information which would have helped adapt and improve the transportation and shelter logistics is a well-known issue in humanitarian operations, as stated by Van Wassenhove and Pedraza Martinez (2012) and Van Wassenhove (2006). Current literature regarding humanitarian operations often discusses the lack of information but only little regarding when the information would be available, yet is not distributed correctly. The findings suggest that a substantial amount of information was available but captured in the informality of the networks where it was enclosed from a broader audience which also could have potentially benefitted from it. This implication was particularly emphasized by one interviewee stating that real-time information regarding current capacity utilization and upcoming capacity demand was available at all times while those, that relied on this information, namely, shelter organizations that needed to plan accordingly, were mostly unaware of this. This suggests that information transfer was somewhere lost along the way and therefore, caused additional stress and strain for the already exhausted personnel resources.

6.3 The impact of volunteers and social media

Several interviewees have stated that the crisis would not have been manageable without volunteers. This group of volunteers ranged far beyond the described type 1 (professional volunteers) and included also many volunteer workers with little to no experience. Volunteers are mentioned to be an important source of support to manage a disaster in literature by Van Wassenhove and Pedraza Martinez (2012). However, it is
safe to assume that efficient crisis management should not rely on a source which is
this critical to account for or anticipate in the event of a crisis. The level of volunteer
work during the refugee crisis in 2015 can be said to be extraordinary, according to the
findings of this study. However, in the event of a similar crisis, the same amount of
volunteers cannot be expected. Literature regarding similar crisis, as stated by Bauer
(2008), Bauböck (1996) and Jäger (1993) have implied that the degree of willingness to
help strongly depends on the crisis and that even though helpfulness is strongly present
during one crisis, this might not be the case during the next, as the Romanian refugee
crisis has shown. Interestingly and partly contradicting, lack of willingness to help was
ruled to be one essential challenge during the 2015 crisis, according to Maduz and Roth
(2017), yet the findings of this research in the context of shelter logistics prove
otherwise. However, as has been stated by multiple interviewees, lack of willingness to
help was given in terms of political constraints (e.g. when a mayor refused to give
permission to use a certain facility with the explanation that the population would not
approve). The 2015 crisis could therefore be an example, which illustrates strong
helpfulness in some areas (e.g. volunteer work) and severe resistance in others (e.g.
public resistance).

Apart from that, another point of interest is the aspect of social media. Social media
played a crucial role during the management of the crisis. It was used to gain and
collect information regarding the current flow of refugees in order to facilitate planning
but also to acquire new personnel (in the form of volunteers) and donations. Messages
could be quickly distributed among everybody concerned. Yet, as the results imply,
social media was merely used by volunteers. It helped create a network by volunteers
for volunteers which developed and operated independently from the official networks
and organizational structures, as was stated by multiple interviewees. As the study on
this crisis implies, the aspect and importance of social media can have a crucial impact
on the overall outcome and success for the whole operation. It is surprising, however,
that social media in the context of humanitarian operations seems to be a topic that has
received little attention so far. Social media can be said to be the tool that paved the
way for volunteers to organize themselves on such a big scale as it was the case during
the 2015 crisis. This also forms an important distinction to the past refugee crises with
the last taking place in Austria in 1999 during which the topic of social media was not
relevant.
6.4 Analysis of most important challenges

The major logistical challenges related to further transportation and set up of emergency shelters as stated by the interviewees are summarized in the following table 9.

This table displays those deviances that were most frequently mentioned throughout the interviews. It is worth mentioning that this table does not mention all challenges that were presented during the presentation of empirical findings but merely focuses on those that were considered the most important challenges by the interviewees in regards to either transportation, shelter logistics or both.

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Area</th>
<th>Interviewee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to latest information</td>
<td>Transportation and shelter</td>
<td>RC1, SO1, SOV</td>
</tr>
<tr>
<td>Adapt and prepare shelters/ad hoc implementation</td>
<td>Shelter</td>
<td>SO1, SO2, SO3</td>
</tr>
<tr>
<td>Finding (adequate) personnel</td>
<td>Transportation and shelter</td>
<td>SO1, RC2, SOV</td>
</tr>
<tr>
<td>Bottleneck at German border</td>
<td>Transportation and shelter</td>
<td>RC1, SO1, SO3</td>
</tr>
<tr>
<td>Long-lasting duration of operation</td>
<td>Transportation and shelter</td>
<td>RC1, RC2, SOV</td>
</tr>
<tr>
<td>Vast flow of refugees</td>
<td>Transportation</td>
<td>RC1, SO1</td>
</tr>
<tr>
<td>Keep shelters open due to unsteady amount</td>
<td>Shelter</td>
<td>RC1, SOV</td>
</tr>
<tr>
<td>Continuously changing requirements</td>
<td>Transportation</td>
<td>RC2</td>
</tr>
<tr>
<td>Lack of resources (e.g. vehicles)</td>
<td>Transportation</td>
<td>RC1</td>
</tr>
<tr>
<td>Constant uncertainty of situation</td>
<td>Shelter</td>
<td>SOV</td>
</tr>
</tbody>
</table>

Table 9 Most mentioned logistical challenges (based on findings)

The most important challenges have already been discussed during this chapter, therefore, this subchapter will only touch upon the rest of these challenges. Most of these challenges are common in humanitarian logistics. The topic of access to information has already been discussed previously. However, one important aspect that is yet to be discussed is the lengthy lead time for implementation of certain processes in regards to access to information. As Van Wassenhove and Pedraza Martinez (2012) propose, information for accurate planning is essential. Therefore, one would assume that these channels in order to obtain this valuable information would be implemented at earliest convenience. However, as the findings imply, this was not the case. For instance, as one interviewee mentioned, the number of refugees could have been estimated by installing an IP camera at the Hungarian railway station in order to be able to anticipate an approximate amount of people. Evidently, these people arrived
roughly an hour later at the Austrian border so time for adequate planning was not given. Nevertheless, this tool which would have facilitated the preparation process required a substantial amount of time to be implemented. This consequently aggravated the operation conditions and the efficiency of the overall crisis management.

The difficulty regarding the adaption of facilities to become suitable shelters under time pressure (ad hoc implementation) was also mentioned by Nappi and Souza (2015). Therefore, findings from this research are in line with existing literature although it should be mentioned that this urgently needed adaption was ruled to be one of the most difficult challenge in regards to emergency shelters (besides especially lack of personnel and information).

The challenge regarding the long-lasting operation can be said to be partly connected to lack of information. It might not have been possible to say how many weeks the operation will continue but adequate communication with other institutions and neighboring countries would have facilitated the anticipation for the next few days.

The bottleneck at the German border supposedly lies beyond circle of influence for the Austrian authorities. However, in this case improved communication would have positively contributed to more efficient planning. Bottlenecks also occurred in other places, such as the bottleneck between Nickelsdorf and Vienna which was then filled by taxis offering their transportation service. However, as evacuation literature (Lumbroso et al., 2008) suggested, accurate planning would potentially uncover these bottlenecks before they occur.

Lack of resources was a common challenge that affected multiple areas such as personnel, transportation vehicles, accommodation facilities etc. Interestingly, financial constraints, as has been noted as a significant challenge during humanitarian crises by Van der Laan et al. (2016), Tomasini and Van Wassenhove (2009), Holguín-Veras et al. (2012) and Van Wassenhove and Pedraza Martinez (2012), were not even once mentioned during the interviews. The reasons for this can be multilayered and evidently, non-notion of financial constraints does not automatically imply that these posed no challenge at all. However, it is an important insight that such a typical challenge apparently had no critical importance during the 2015 crisis.
Another aspect which, according to these research findings, seemed to not be of particular importance was discrepancies in organizational cultures, as it was described in literature by Van Wassenhove and Pedraza Martinez (2012), Tomasini et al. (2009) and Tomasini and Van Wassenhove (2009). The divergent objectives were shortly presented, yet the main problem during the 2015 crisis in terms of different cultures lay in distinct planning horizons. However, this only became an issue as the operation lasted for an uncertain, yet substantial amount of time.

6.5 International crisis management on a national level

Ultimately, one important aspect which has not been covered yet was common in this crisis as well as the past refugee crises that affected not only Austria but also Europe: lack of solidarity and lack of cooperation on an international level. Lack of solidarity has previously been mentioned in literature by Stacher (2000) for the past refugee crisis. The role of the EU was not explicitly covered neither during the interviews nor in the presentation of the findings. The reason for this was that this competence lies beyond the capabilities of the national authorities in Austria and can therefore not be directly affected. However, it is still an important aspect, which can be said to have majorly influenced the course and outcome of the refugee crisis on a European level. It can be said, that a crises of this magnitude should not be the sole responsibility of only few countries. In some aspects that lack of cooperation became clearly visible during this research. The case description mentioned the questionable behavior from Hungarian politics (e.g. Hungary’s Minister of Prime Minister’s Office) according to ORF (2019) and the findings also imply that Hungarian organizations unnecessarily aggravated the logistical processes for Austria by sending hundreds of refugees to the Austrian border without proper communication or appropriate warning. The potential violation of human rights is one repercussion from this but the other is impeded efficient crisis management due to lack of collaboration. As the findings state, the relationship between Austria and Germany was more amicable which consequently led to improved communication and possibly more adequate planning on the German side (although it should not be forgotten that the varying German bottleneck at the border posed one of the major challenges during this crisis). Additional research from the German perspective could give more insight to this. Nevertheless, it is safe to assume that the overall disaster management could potentially have been less chaotic and more organized if better cooperation and communication among all countries that were affected had been in place.
7 CONCLUSION

The last chapter of this research goes back to answer the research questions which were proposed in the beginning of this thesis and provides an overview of the most important key findings as well as contributions to literature from the collected data in “theoretical implications”. Suggestions for what needs to be done differently in practice are then derived from the key findings and presented in “practical implications”. Furthermore, the impact on society is shortly illustrated and limitations for this study are explained. Ultimately, suggestions for areas where further research is needed in order to contribute to a better and more profound understanding of this topic are made.

7.1 Theoretical implications

The research proposed three RQs at the beginning. The first concerned the reconstruction of the flow of refugees through Austria. This was answered in chapter 5.1.1. The main objective with this research questions was to understand the logistical flow and the routes as well as the means of transportation that were implemented in order to transport the refugees from one border to the next. This RQ was based on the assumption that a fundamental understanding of these processes was required in order to be able to identify and assess logistical challenges that occurred during the transportation. Apart from that, it was important to comprehend why further transportation was not possible at times which made the use of emergency shelters as stopovers indispensable. Whether the transportation process was conducted in an ideal or sustainable way remains unclear, yet, this was also not part of the scope of this research. Humanitarian operations are generally characterized by lack of resources which forces logistical actors to work with whatever is at their disposal.

The second RQ encompasses the main objective of this research: the most important challenges during the implementation of logistical processes. As the findings imply, fundamentally all logistical processes needed to be implemented from scratch. Austria’s long history of refugee crises was apparently not visible during the 2015 crisis. At the same time, comparability to past crisis was only partly given as Austria’s role of mostly being a transit country remained unchanged, yet the flow of refugees can be described as disproportionate. The consequence from this was perceived lack of preparation by almost all interviewees. To what extent preparation for a crisis like this is possible is debatable. However, as the findings suggest, certain insufficiencies in regards to
evacuation logistics were also uncovered. Whether the collected experiences of this crisis will be in evidence and substantially influence logistics during a possible next crisis, essentially depends on the time span in-between, as the findings imply. The logistical actors were confronted with various commonly known challenges in humanitarian contexts. It is safe to assume, that certain challenges can never be fully eliminated. However, some can be mitigated. An interesting aspect in this research was that a frequent challenge related to lack of information in humanitarian operations appeared mainly in the form of ineffective collection and allocation of information. The necessary information was available to some degree yet failed to be distributed effectively. If this had been conducted on a more operative level, chances are that not only preparation but also implementation of logistical processes could have been strongly facilitated. In addition to this, inefficient processes and excessive lead time for the implementation of procedures further contributed to overall delays and inefficacies, as the findings imply.

One essential aspect which emerged during this research was the important role of volunteers and the use of social media. The combination of these two led to disaster management structures which developed independently of the formal responsible organizations and which ultimately became indispensable for effective crisis management. Simultaneously, this also raises concerns whether these structures will develop as flexibly and dynamically during other crises. The role of social media in humanitarian operations is yet to be fully researched. Nevertheless, the findings of this research attribute it a more vital role as initially anticipated.

7.2 Practical implications

RQ 3 fundamentally addresses suggestions regarding actions that need to be taken into account if another crisis were to hit Austria. Needless to say, this study only touches upon the tip of the iceberg. Appropriate and holistic disaster preparation goes far beyond anything that could be proposed within the scope of this research. This is aggravated by the fact that every disaster has its idiosyncrasy, which implies there is no one-fits-all solution for all of them. Nevertheless, this study aims to identify and give some practical implications for how a crisis of this magnitude could potentially be handled differently in the future.

In order to manage another refugee crisis on a more efficient level, it is crucial to establish effective communication channels from the very beginning. These should
allow constant information flow among all affected EU countries in order to enable adequate planning and preparation (e.g. number of vehicles needed for further transportation). Equally important is effective allocation of information among all logistical actors in order to facilitate planning on a micro-level (e.g. preparation of emergency shelters). However, these initiatives require good bilateral relationships and a uniform collaboration objective among the countries affected.

Therefore, if another crisis as the 2015 refugee crisis were to happen again, focus should lie on the early establishment of official, formal networks in order to transfer information. The use of informal networks might have served its purpose during this crisis. However, it is doubtful that these can be reused during the next crisis if significant amount of time passes. The consequence would be that they need to be re-established for every crisis, which causes delays and inefficiencies. Reinventing the wheel does not speak of effective crisis management. Austria’s logistical actors are well-advised to move beyond short-term thinking and establish certain standard procedures that can be activated in a minimum of time and with clear responsibility allocation in place.

Apart from this, as the findings imply, successful crisis management was mainly feasible thanks to the outstanding volunteer efforts. However, simultaneously, this uncovered a severe lack of personnel resources. In order to adequately prepare for future crises, these resources should be filled to the extent possible. Evidently, adequate preparation for a crisis of this magnitude will most likely never be possible. Nevertheless, a strong dependency on volunteers proved to be successful during this crisis but should not be understood as a matter of course.

7.3 Impact on society

The impact of the refugee crisis on society can be said to be wide-ranging. A certain degree of political and public resistance was already visible before the peak of the crisis and any long-term political implications would be subject to another research. However, it has become evident that certain complications caused by ineffective crisis management potentially contributed to a rise in reluctance towards refugees on a political and societal level. How much this aversion could potentially have been reduced if the logistical processes had been implemented more efficiently is questionable but it stands to reasons that public attention due to ineffective management could potentially have been reduced.
Furthermore, this research aims to raise attention that this topic has the potential to become more prevalent and that not only Austria will become subject of more frequent refugee movements as it has been in the past. Environmental concerns that could possibly cause an overall increase in flight movements on a global level in the future are becoming more and more likely, as certain studies imply. In addition to that, the UNHCR (2019) had declared 2018 to be the year with the highest amount of globally displaced people since the Second World War.

For these reasons, it is crucial to pay attention to these logistical insufficiencies by studying the subject during a time period when the involved actors can still be inquired about their experiences. This study contributes a small part to the overall research gap that became evident during the conduction of this research.

### 7.4 Limitations of research

The following subchapter will shortly describe the limitations for this study. The study was mainly limited by time which was the main reason for restricting the amount of interviewees to seven. One objective was to obtain a broad picture of the events and processes during the refugee crisis. However, in order to gain a truly realistic picture, more interviewees and more interview time per person would be needed. Also, as this study was conducted by a Master’s student, access to data was restricted. For the benefit of this study, it would be interesting to gain more insight into higher coordination-levels such as, for instance, decision makers from the BMI. Nevertheless, this study gives a first impression and basic understanding of the logistical processes in regards to further transportation and emergency shelters, yet fails to paint a full comprehensive picture with clear and realistic guidelines for future crises of this kind. Furthermore, as this was designed as an exploratory study, the main objectives and outcome were rather vague in the beginning as the main aim was to gain an impression of what had happened logistic-wise during the refugee crisis.

### 7.5 Suggestions for future research

The topic of logistical challenges has generally been subject to little research. If this study were to be repeated, more focus would lie on especially the first few weeks (August to September 2015) as the findings imply that this was the most critical time period and therefore also most beneficial to study. However, with this newly gained knowledge, it became evident that this area generally needs more research in the
future. Not only because only little reprocessing has been done in the past but also as the topic of refugee movement is likely to increase in the near future, this area should receive more attention from academia. Currently, there is only little prior research to base one’s own research on which opens up notable opportunities to fill any gaps. During this study, expect for the ARC, only one responsible person per organization (excluding the volunteer) was interviewed. In order to obtain a comprehensive picture it could be beneficial to interview more people from the same organizations. Furthermore, as Austria’s neighboring countries were confronted with the same or to some extent similar problems, it would be worth investigating how especially Germany, after receipt of the refugees, managed these logistical processes, how these could have been improved and compare the level of preparation in Austria to Germany. Another point of interest would be access to information as the findings imply that it would have been easily accessible and distributable in theory but major obstacles hampered this in practice. As access to information is crucial, the underlying reasons for this lack of aforementioned and a description and analysis of the information channels could potentially form another topic of research. As social media had such a prevalent importance during the 2015 crisis, not only in terms of communication and access to information but also regarding coordination and acquisition of personnel, it would be beneficial to study the impact and possibilities of this in humanitarian operations in more detail.
REFERENCES


93


APPENDIX 1 INTERVIEW GUIDE

It should be noted:

- the interview guide was adjusted to every interviewee’s position and during the flow of the interview so not every interviewee was inquired about every question/topic listed below
- the original questions are written in cursive
- the main questions are listed by numbers while the filling questions are listed by letters
- “x” refers to the respective organization or institution the interviewee was working for

General

1) How long have you been working for x? / Wie lange arbeitest du schon bei x?
2) What is your position/task in x? / Was ist deine Aufgabe bei x?
3) What was the task of x during the crisis? / Was war die Aufgabe von x während der Krise?

Collaboration

4) Which other organizations/institutions did you cooperate with? / Mit welchen anderen Organisationen habt ihr zusammengearbeitet?
   a) How did the collaboration go? / Wie verlief die Zusammenarbeit?
   b) How did the task distribution work? / Wie verlief die Aufgabenverteilung?
   c) Were there problems due to unclear responsibility allocation? / Gab es Probleme aufgrund unklarer Aufgabenverteilung?
   d) How did the coordination of the tasks take place? / Wie wurden die Aufgaben koordiniert?
   e) Central or decentralized and was that good or bad? / Zentral oder dezentral und war das gut oder schlecht?
   f) How did the cooperation with the military work? / Wie verlief die Zusammenarbeit mit dem Militär?
   g) How did you cooperate with the neighboring countries? / Wie habt ihr mit den Nachbarländern zusammengearbeitet?
5) Were there many volunteers and how could they be used? / Gab es viele Freiwillige und wie wurden diese eingesetzt?
Transportation logistics (if applicable)

6) What did the further transportation process look like? / Wie verlief der Weitertransport?
   a) In which areas were you active? / In welchen Bereichen wart ihr aktiv?
   b) How long did the transport through Austria take? / Wie lang dauerte der Transport durch Österreich?
   c) To what extent has this changed during the process? / Bis zu welchem Grad hat sich das im Verlauf der Krise geändert?
   d) How long were the waiting times until further transportation could take place? / Wie lange waren die Wartezeiten während dem Weitertransport?
   e) How many people were in action? / Wie viele Personen waren aktiv?

7) Which transportation modes were used and why? / Welche Transportmittel wurden benutzt?

8) Who did you cooperate with here? / Mit wem habt ihr hier zusammengearbeitet?

9) Did you make use of existing evacuation plans for this? / Habt ihr bestehende Evakuierungspläne benutzt?

Emergency shelters

10) What kind of emergency shelters did you use? / Welche Art von Notunterkünften habt ihr benutzt?

11) What qualified as an emergency shelter? / Was hat sich als Notquartier qualifiziert?

12) How many people were accommodated? / Wie viele Menschen wurden untergebracht?
   a) How long was the wait for further transportation? / Wie lange musste man auf den Weitertransport warten?

13) Who were the most important partners here? / Wer waren hier die wichtigsten Partner?

14) Did you make use of existing evacuation capacities for this? / Habt ihr bestehende Evakuierungskapazitäten genutzt?

Earlier crises

15) Have previous similar crises been used as a reference? / Wurden frühere Krisen als Referenz herangezogen?
16) In what way did this crisis (logistically) differ from earlier crises? / In welcher Hinsicht unterschied sich diese Krise (logistisch) von früheren Krisen?

Challenges

17) What were the biggest logistical challenges during the crisis? / Was waren die größten logistischen Herausforderungen während der Krise?

18) Were there any unexpected events? If so, which and how were they handled? / Gab es unerwartete Ereignisse? Wenn ja, welche und wie wurden diese gehandhabt?

19) What did the preparation look like? / Wie sah die Vorbereitung aus?
   a) What was overlooked or forgotten? / Was wurde übersehen oder vergessen?
   b) How did communication with each other work? Was there a problem? / Wie verlief die Kommunikation miteinander? Gab es hier Probleme?
   c) Were there any issues with security? / Gab es Probleme mit Sicherheit?
   d) Did you come across any bottlenecks? / Gab es Engpässe?

Lessons learned

20) What needs to be done differently if a similar crisis occurred and why? / Was muss beim nächsten Mal anders gemacht werden?
   a) Has any of this been documented? / Wurde irgendwas davon dokumentiert?
   b) Has preparation for such emergency crises changed since then? / Hat sich die Vorbereitung auf derartige Krisen seitdem verändert?

21) Is there anything you would like to add? / Gibt es noch irgendwas hinzuzufügen?
APPENDIX 2 CATEGORIZATION, ABSTRACTION AND AGGREGATE DIMENSIONING

1st level categories
- groups of 50
- means of transportation
- detours
- no automatization possible
- safe passage
- long-running operation
- collective communication
- technical access to information
- open borders
- time of the day
- Dublin agreement

2nd level abstracts
Transportation process

3rd level aggregate dimension
Transportation

1st level categories
- treatment of refugees
- family constellation
- lack of trust
- uniforms
- vast amount of refugees language barriers
- effective communication
- translators
- lack of resources
- improvisation
- bottlenecks
- reconditioning
- trust advancement for Red Cross border controls
- restricted border passings
- lack of personnel
- welcome culture

2nd level abstracts
Transportation circumstances

1st level categories
- flight routes
- east-west-route
- south-northwest-route
- entry points
- exit points
- railway stations
- Train of Hope

2nd level abstracts
Routes and locations
3rd level aggregate dimension
Cooperation

2nd level abstracts
Actors

1st level categories
ÖBB
Ministry of Interior
Military
NGOs
MR-70
Fire department
civil society
Private companies
Blue light organizations
Volunteers
Neighboring countries
UNO
Affected EU countries
State government
Federal government

2nd level abstracts
Cooperation problems

1st level categories
different cultures
different objectives
Responsibility allocation
different planning horizons
Long-term planning
Close cooperation
Frequent meetings
High information flow
Informal decision making