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Cooperative and competitive behaviour among passengers during the costa concordia disaster

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ABSTRACT

Despite the increase in regulation and codes, there is a relatively small body of scientific literature on maritime disasters management, especially in terms of human factors that affect the success of the evacuation and safety procedures. This paper provides an analysis of passengers' behaviour during the Costa Concordia disaster of 2012, in which 32 people died. We use 49 passengers' witness statement made available by the court of Grosseto to understand how the evacuation occurred. We examine whether the main factor in reducing the effectiveness of the evacuation procedure was the lack of effective management or the behaviours among evacuees, or a combination of the two.

Results of the analysis suggest that passengers reacted with solidarity, helped each other and that such spontaneous and pro-social behaviour possibly contributed to reduce the number of casualties. By contrast, competitive behaviours happened only in relation to specific environmental constraints and were limited to the proximity of safety boats.

The deficiencies in command in the Costa Concordia evacuation highlights the need to increase the skills of personnel called to manage an emergency at sea and the need to create ad hoc training programs that consider also unexpected scenarios.

Understanding how people (both staff and public) deal with an emergency and the factors that affect their decision is pivotal to help planners to review their strategy, anticipate similar events, and consider all the factors in future plans and regulations. While human error is always a big factor in maritime disaster, its impact can be considered and mitigated with specific procedures and adaptable plans.

1. Introduction

Since 1980, the cruise ship industry has been one of the fastest growing sectors in the travel sector (Barron and Greenwood, 2006; Brida and Aguirre, 2008) and recent years have been characterised by a significant increase in large-scale cruise ships and passenger ships in terms of numbers and popularity (Kvamme, 2017). As consequence, the number of maritime disasters involving passenger ships has also increased and maritime disasters have caused more injuries and fatalities than road disasters.¹ Many dramatic maritime disasters happened in recent years (e.g. the capsizing of the Princess of Stars in 2008). Some

of them have been characterised by the desertion of the ship by the captain before the end of the evacuation process; in 2014 the captain of the Sewol left the ship without issuing an evacuation order, hindering the formal start of the evacuation (Kee et al., 2017). Most of these events were characterised by the captain's inability to manage the emergency and by ineffective decisions; for example, during the emergency of the Oceanos the cruise director reported that many of the officers left the ship before the emergency was over, leaving the passengers without any information about what to do (Allen, 1994).

The same happened during the Costa Concordia disaster which took place near Tuscany in 2012, when Captain Francesco Schettino

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¹ The Emergency Events Database - Université catholique de Louvain (UCL) - CRED, D. Guha-Sapir - www.emdat.be, Brussels, Belgium. According to CRED's criteria, an accident can be classified as disaster when a) ten or more people reported killed; b) hundred or more people reported affected; c) declaration of a state of emergency; and d) call for international assistance.

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abandoned the ship before the end of the evacuation resulting in one of the largest number of fatalities in a passenger ship accident in Europe in recent years and which was followed by great public interest (Elnabawybahriz et al., 2016). As declared in the Judgment of the Court of First Instance of 11 February 2015 no. 115/2015 (Court of Grosseto, 2015), the abandonment of the ship resulted in a lack of management and in organizational improvisation (Court of Grosseto, 2015). What this and the other two emergencies have in common is that passengers did not receive help or information and were left alone, possibly causing injuries and fatalities (Talley et al., 2008; Lu and Yang, 2011).

Although ship abandonment by the crew seems to be a frequent feature of emergency management in case of disasters involving passenger ships, the way people behave in such situation is still not properly investigated. The literature abounds with mathematic models that describe efficient strategies to safely evacuate a sinking ship considering the ship's architectural design (Kobes et al., 2010; Carattin et al., 2011; Pinto et al., 2012) or the amount of information received by passengers (Ockerby, 2001; Nevalainen et al., 2015). But modelling people's behaviour is not always sufficient to deeply consider all the elements that lead a person to take a decision, especially during emergencies (Marmot, 2002). Analysing and describing people's actual behaviour during emergencies is challenging and would ideally require collecting primary data (such as video or interviews) (Kvamme, 2017; Alexander, 2012) while the emergency is still ongoing. Such challenge could be one possible reason of the lack of studies about how passengers react to the absence of command and the consequent lack of information. Secondary data (i.e. data not directly collected by the researcher) are a feasible alternative when contemporaneous primary data are not available. However, such information is not always easy to collect or does not provide enough details for a proper analysis.

The Costa Concordia disaster offers a unique opportunity to investigate the combination of factors that affect the correct execution of the entire emergency procedures, because documents related to the proceedings have been made available by the Court of Grosseto, in charge of the trial. These documents enable us to study the evacuation, the communication, the crisis management and, above all, the behaviour of passengers during the event. Behaviour is especially important given that previous research has shown that in emergencies most lives are typically saved by "ordinary" members of the public - whether bystander or fellow survivors - rather than by professionals (Helsloot and Ruitenberg, 2004). And yet detailed comparisons of different evacuations show that as well as cooperation, under some circumstances there is competition and pushing among evacuees which might jeopardize their safe exit (Chertkoff and Kushigian, 1999).

The present paper complements the attempt of previous researches to describe peoples' behaviour during the Costa Concordia disaster (Kvamme, 2017; Alexander, 2012) using witnesses' evidence collected during the hearings held by the Court of Grosseto. The evidence is treated as "indirect interviews" with survivors and the analysis presented in this paper represents one of the rare (if not only) example of the use of such evidence transcripts to investigate passengers' behaviour during maritime disasters. It also represents the only analysis of the available documents related to the Costa Concordia proceedings in terms of passengers' witness evidence collected during the hearings held by the Court of Grosseto. It provides a critical investigation of how the lack of the management, due to the abandonment by the captain, affected the behaviours of the passengers during the Costa Concordia disaster with a special focus on risk perception and cooperative versus competitive behaviour. We hypothesised that the lack of management by the captain and ineffective organizational improvisation by the crew resulted in most of the passengers spontaneously, self-organizing themselves and displaying both cooperative and competitive behaviour, instead of following all the crew's instructions. Furthermore, we also hypothesised that competitive behaviours during the Costa Concordia happened only in situations of physical and environmental constraints (e.g. when approaching and boarding the safety boats).

The aim of this paper is therefore to investigate public behaviours during the Costa Concordia disaster both in terms of cooperation and competition in relation with the lack of management. It also aims to provide answers to the following research questions: How did people behave and react during the emergency? Are there differences in the behaviour towards familiar people or others? What behaviours are referred to by passengers with the term "panic"? Are such behaviours predominant throughout the entire evacuation or are they prevailing in specific circumstances? Did people receive conflicting information and how they react? Finally, the paper also aims to compare these results to the existing literature: Kvamme (2017), for example, looked at the passengers' behaviour as a factor that reduced the effectiveness of the evacuation.

1.1. The costa concordia disaster

On 13 January 2012, the Italian cruise ship Costa Concordia hit an underwater rock and capsized off the coast of the Isola del Giglio, Tuscany, Italy. The collision occurred during the so-called "inchino" (salute), an unregulated but accepted manoeuvre that is usually made with the intent to greet and pay homage to the inhabitants of the island and advertise the presence of the ship on land. After the impact, the Costa Concordia gradually listed to the right side, leaning on the seabed and remaining largely above water on the left side. The accident resulted in 32 deaths and 193 further victims with non-fatal injuries. Table 1 shows the timeline of the key events of the disaster according to the reconstruction made during the legal proceedings.

At the beginning of the event, the captain of the Costa Concordia, although the extent of the damage was immediately reported from the outset, decided to minimize the emergency and delay the start of the emergency procedures; furthermore, once the order was heeded, the captain abandoned the ship itself jumping on the roof of a lifeboat before the evacuation was completely over (Court of Grosseto, 2015) going against the Italian Navigational Code (D.R. 30/03/1942n.327) that defines the captain as having a pivotal role in the management of the emergency (Art. 186) and requires him to coordinate all the evacuation procedures. According to the International Maritime Law and the IMO regulations (IMO, 2009), the emergency alarms have to be sounded when the seriousness of the situation is assessed and passengers have to be evacuated within 30 min after the 'abandon ship' order is issued. During the Costa Concordia capsizing, the ship abandonment order was decided by the captain and issued by the deputy officer an hour after the impact even though the captain was aware that the ship should have been evacuated after few minutes from the impact (Court of Grosseto,

Table 1
Timeline of the key events during the Costa Concordia disaster.

TIME (CET)	EVENT
January 13th, 2012	
18:57	Cruise sets sail from port of Civitavecchia (Italy)
21:04	Starts 'salute' approach to Giglio Island
21:45	Traveling at 15 knots, ship strikes the Scola Piccola rock off Giglio
21:45–21:55	Ship decelerates to zero knots and turns more than 180 degrees
22:12	Passengers advised to "return to their cabin"
22:14	Officers begin contact with Port Authority of Livorno (Italian mainland)
22:25	Captain admits to Port Authority that the situation is critical and requests the use of a tug
22:25–22:51	Ad hoc unofficial evacuation begins
22:51	Captain gives instruction to heed the abandon ship order
22:54	Staff Captain orders the abandon ship
23:10	The official evacuation starts
January 14th, 2012	
01:30	Captain communicates to Port Authority he left the ship
01:45	Harbor Master of Livorno 'orders' Captain to return to ship (he does not do so)
04:46	Evacuation officially ends
06:17	Search and Rescue teams leave the ship

2015). Just after having ordered the abandonment of the ship, the captain of the Costa Concordia left the ship leaving his crew, partially unprepared to manage an emergency of this magnitude, devoid of the figure responsible for coordination. The Costa Concordia evacuation lasted for more than six hours as consequence of Schettino's belated decision not to order the evacuation of the ship (Kvamme, 2017). His decisions created a leadership void, produced a delay on the evacuation procedure, and above all resulted in the inability of the crew to coordinate the situation and provide accurate information to the passengers.

The evacuation procedures that followed were managed by the entertainment and hospitality staff (Alexander, 2012) which resulted in the emergence of organizational improvisation; staff, in fact, were not prepared, had no adequate training and spoke different languages (although Italian was the work language and they were required to also speak English). The results were problems in communication and cooperation. The delay in evacuation, the lack of management by the staff, the lack of training and the unfamiliarity with the ship's environment (Casareale et al., 2017) had multiple consequences in the management of the event and strongly affected the passengers' behaviour and the way they dealt with the emergency.

In the immediate aftermath of the event, as reported by the Italian Ministry of Infrastructures and Transport (Ministry of Infrastructures and Transport, 2012), the first information given to the passengers by the Costa Concordia officials was that the problem was simply an electrical fault and they reassured the passengers that it would be fixed immediately. Passengers were not given any communication on what to do and how to behave, nor were the emergency protocols activated. They also received contradictory information (Elnabawybahriz et al., 2016). Passengers were informed that the best thing to do was to return to their cabins, but fortunately few passengers followed the instruction that could have led to more casualties (Alexander, 2012). As a consequence of their assessment of the situation and of the lack of information from the staff, passengers autonomously started to evacuate the ship before a formal authorization was issued with many of the passengers independently already gathered at the assembly points which were not adequately supervised by the crew. Despite the reassuring message from the staff, passengers quickly realised that a more serious accident was happening, because the ship violently listed and the speed of the ship immediately decreased (Elnabawybahriz et al., 2016).

1.2. People's behaviour and risk communication

The decision to evacuate is composed of a series of sub-decisions as people assess the situation and the threat, perceived the risk, and how they can adapt to it, adding complexity to the process of evacuation decision making (Tierney et al., 2001; Canter, 1990; Tong and Canter, 1985). In such situations, risk communication is one of main factors influencing in the decision to evacuate, because usually people take action when they know or understand the situation (Lim et al., 2013). The process of seeking for information about the risk is called 'social milling' (Turner and Killian, 1972); it ranges from the time people receive the warning to the time they decide to take protective actions (Bowser and Cutter, 2015) with people trying to collect information about the situation (Drabek, 1999), personal belongings, (D'Orazio and Bernardini, 2014) and observing how other people in the proximity behave (Kinatader et al., 2018; Abdulkareem et al., 2012). This process is pivotal in evacuation: the safety of a person, in fact, depends on the possibility to successfully abandon a dangerous area in the most rapid and secure way (Casareale et al., 2017). According to Eiser and colleagues (Eiser et al., 2012), milling happens not because people are 'irrational', but because of the uncertainty existing in a novel situation in terms of the risks and the options open to them; these constraints must be investigated, analysed and considered in any development of plans for disaster prevention and risk mitigation.

Despite the fact that anti-social and irrational behaviours (e.g., panic) are often assumed to be the most common response to danger and

disasters (Chertkoff and Kushigian, 1999; Aguirre et al., 1995; Quarantelli, 2001, 2008), people in emergency and disaster situations typically respond in an adaptive manner (Helsloot and Ruitenbergh, 2004; Aguirre, 2005; Drabek and McEntire, 2003; Der Heide, 2004; Perry and Lindell, 2003) and in a way that is both orderly and meaningful in the situation. As reported in many studies, people experience fear and uncertainty, but this does not necessarily mean that they will act selfishly or impulsively (Quarantelli, 2008, 1986; Alexander, 2013; Lowe and Fothergill, 2003). After moments of uncertainty and milling, in fact, people often start to evacuate in a self-organised and coordinated (Connell, 2001) manner, usually acting as a group, especially in the presence of familiar people (Riad et al., 1999; Drury et al., 2009). This happens because people act in groups, with familiar persons and relatives, unknown people or both in normal circumstances and in the majority of routine situations. Such groups are maintained also in emergencies, by seeking the proximity of familiar people, or to create a new relationship with strangers. Shared identity, in terms of sharing a sense of 'we-ness' with others affected, enhances the expression of social behaviours and solidarity (Drury et al., 2009). Overall, during disasters collaborative behaviours are more common than competitive behaviours (Helsloot and Ruitenbergh, 2004; Drury et al., 2009).

The literature suggests that competing instructions may only result in confusing people during their decision-making process in the event of an evacuation (Ploran et al., 2018) and that uncertainty often leads people to depend on others to provide information (Eiser et al., 2012). This led to what is known in sociology as "normalcy bias" (Omer and Alon, 1994). During the Costa Concordia disaster, in fact, many passengers received conflicting instructions and reinsuring information from the staff trying to avoid panic and maladaptive behaviours, (Court of Grosseto, 2015) while the literature suggests that usually the result is exactly the opposite (Quarantelli, 2008). This affected the passengers' assessment of the emergency and the underestimation of the situation probably lead to more deaths and injuries.

By that time the ship was listing heavily and the use of all the life-boats on the ship was impossible. Some of the passengers had already left the ship and others on the deck were waiting to leave on one of the remaining boats. The Costa Concordia disaster could easily have involved massive loss of life (Alexander, 2012). While listing and turning the ship could have slid into deep water. As reported, fortunately, not all the passengers heeded the order to return to cabins, and people who did were at risk of entrapment and drowning. Unfortunately, most of the people who died did so because of a lack of information.

Evacuation behaviour in cruises can be similar to evacuation behaviour in buildings (Casareale et al., 2017); in both environments, emergencies and crisis can generate factors that could trigger create competitive behaviours (Fahy et al., 2012). When representing emergency behaviour, the mass media, some people involved in the emergency, and sometimes also experts often use the term "panic" to describe people's emotion and actions (Fahy et al., 2012). Many authors agree on the definition of specific general key conditions under which collective panic can occur (Perry and Lindell, 2003; Gantt and Gantt, 2012; Fritz and Marks, 1954) but, despite this attempt to find common features, the literature still does not provide an agreed meaning for the concept of panic. More importantly, it cannot easily be determined whether behaviour is rational or irrational in a situation like an emergency (how should people behave?) (Erlingsson and Brysiewicz, 2017) Rather than speculating on rational (vs irrational) motivations, It makes more sense to examine people's reactions to dangerous or emergency situations in terms of competitive behaviours - which may or may not be linked to feelings such as fear, anxiety and terror - versus cooperative behaviours (Drury et al., 2009).

As usually happens when a disaster strikes, several media source reported "panic" during the emergency of the Costa Concordia (Kvamme, 2017). However, the media often report a distorted and oversimplified description of people's reactions during disasters (Zarqa, 2013). Some research articles highlighted episodes of competitive

behaviour and chaotic reactions during the evacuation of the Costa Concordia, that were only transient (Alexander, 2012), but in addition to leadership issues, strongly affected the result of the evacuation (Kvamme, 2017). The majority of those studies are based on limited secondary collections of unofficial documents, such as photographs, video sequences, reports by media, post hoc interviews with survivors and scientific reconstructions; examples are the reconstruction of the sequence of events before, during and immediately after the event (Alexander, 2012), the identification of behaviours among the evacuees that may have contributed in reducing the effectiveness of the evacuation procedures (Kvamme, 2017) and the discussion of the circumstances of the accident, the problems encountered during the evacuation and the search and rescue (Elnabawybahriz et al., 2016). These studies may be biased from the necessity of “selling” a story and make it appealing (Kvamme, 2017). Therefore, as suggested by Kvamme (2017), the use of the transcripts of passengers’ statements from the court proceedings would add consistent value to the analysis of human behaviour in the Costa Concordia disaster and widen the understanding of how people behave during maritime disasters.

2. Materials and methods

This research is based on secondary data collection and provides critical analysis of documents related to the Costa Concordia disaster proceedings that have been released only recently. In detail, the documents refer to the passengers’ witness statements registered during the hearings held by the Court of Grosseto that started soon after the accident occurred (from February 2012 to December 2014). Proceedings were collected in compliance with criminal procedural law. Documents were disclosed only after the issuance of the Judgment of the Court of First Instance of 11 February 2015 no. 115/2015 which sentenced the captain of the Costa Concordia to 16 years in prison. Then, the Court of Grosseto ruling was upheld by the Italian Supreme Court (ruling no. 35585/2017 issued on July 19, 2017). All the passengers’ witness statements were in Italian and already officially translated by the court’s offices using professional and registered translators.

A total of 49 passengers’ statements were collected: of those, the majority were females (52%) while passengers were Italians in 93% of the cases. The whole set of statements has been edited and collated in a single document resulting in a total of 19,271 words. In order to assess how and whether the lack of management by the crew affected the passengers’ behaviour, we performed a mixed method content analysis to identify patterns in the passengers’ witness evidence. The mixed method analysis has been chosen for the advantage of being able to account for both narratives and standardized data (Gambrel and Butler Vi, 2013). All the documents collected were analysed, and passengers’ witness evidence was extracted. The contents related to the passengers’ behaviour once landed and information about the compensation were removed. The final analysis was read and re-read to get a sense of the whole and to gain a general understanding of the content of the instructions (Erlingsson and Brysiewicz, 2017).

A qualitative analysis (i.e. coding) was performed in order to find patterns of behaviour and have a preliminary idea of whether competition was a predominant behaviour during the emergency or whether cooperation prevailed. Since the aim of the study is to find practical and useful insights to describe how people behave during an emergency when management is not fully ensured, we analysed the documents from a pragmatic perspective. Using a mixed method, we aimed at emphasizing the nature of people’s experience and how experience and shared beliefs influenced choices and the outcomes of their actions (Patton, 2015). All the relevant documents found in the literature review were read, analysed and reviewed by the authors to extract content on what to do in relation to a disaster. A special focus was given to the phases of the disaster and on the behaviour of people in relation to other people or themselves. In order to keep their anonymity, passengers have been alphabetically ordered and they have been attributed a number

according to the alphabetical order (e.g. Passenger 1 is the first passenger that appears in the list, while Passenger 49 is the last one).

The document then was imported into Nvivo 12® and an exploratory and descriptive analysis was carried out. A word frequency search was used as preliminary analysis to identify and list the most frequently occurring words and to identify possible patterns. Then, a text search was performed to search for the specific words or phrases coming from the word frequency research and from the design of the study; their use in the text was explored to identify possible networks and finally words or phrases were automatically coded.

All the evidence collected from the Court of Grosseto was read, analysed and reviewed by the authors to extract content about behaviours related to the behaviour of people in relation to other people or themselves. All the sets of evidence in the proceedings were transformed into Condensed Meaning Units (CMU). Condensation is the process of shortening the text while still preserving the core meaning to ensure that the core meaning is still retained. All the CMUs were labelled by formulating codes and then grouping these codes into categories and themes.

The coding process followed the phases indicated by Erlingsson and Brysiewicz (2017). A protocol for content-analysing behaviour, consisting of a codebook and a coding form, was developed in order to make the set of codes so complete and unambiguous as to almost eliminate the individual differences among coders (Neuendorf, 2017). A mixed coding, both inductive and deductive (Rivas, 2012), was used in which some codes were known prior to analysis and some of the codes emerged during the reading of the text. A set of five categories (themes), conceptualized as patterns of shared meaning across data that are united by a central concept (Braun and Clarke, 2012), have been used.

The first theme was used to define the demographic characteristics of the passengers and to capture the range of variation among person profiles; the respondents were coded by gender (male vs. female) and nationality (Italian vs. foreigners). Nationality was used to understand the issue of language and if there has been a different reaction based on the understanding of the message (most of the messages were in Italian). The second theme labelled as “perception” contains all the passengers’ descriptions related to feelings, perceptions, and whether people were afraid. The third theme represents the types of actions described by passengers in terms of behaviours categorized as: a) behaviours of giving or receiving information; b) behaviour of giving or receiving help; c) imitative behaviour of others; d) competitive behaviour; e) lack of information, instructions or help; f) no reaction; g) opposite behaviour or thought to instruction or information received; and h) “general behaviour”. The code “general behaviour” was assigned to all the actions that did not refer to the above specific categories as suggested in the literature (Neuendorf, 2017), such as moving from a place to another or collecting lifejackets. The fourth theme was used to code all the behaviour based on the person who made/received a specific behaviour. The main nodes were: a) actions towards the passenger him/herself; b) actions towards people belonging to the family nucleus (e.g. wife, husbands, children, etc.) and familiar people (e.g. friends); c) other people or unknown people with who the passenger has no contact or relationship prior to the emergency; and d) Costa Concordia crew members. Finally, behaviours were coded according to the location where the action took place to find out any relation between the description of different types of behaviour (i.e. cooperative vs competitive) and the location of passengers.

A further inductive stage was completed in which the researchers added additional codes based on reading the initial transcripts and identifying unexpected issues and topics that had emerged during data collection. The final code frame consisted of 19 codes located across 5 main thematic or interest areas. Table 2 outlines the codebook and presents the list of the codes and themes, with description and examples, used in the coding process.

To ensure the quality and the reliability of the data coding, an Inter-Coder Reliability (ICR) test using Cohen’s κ was performed. The test

Table 2
List of the codes and themes, with description and examples, used in the coding process.

CODE	DESCRIPTION	THEME
Gender	Male/Female	Demographic
Nationality	Italian/foreigner	
Feeling and perception of the risk	Passengers describe feelings, risk perception, and report people afraid. There is no mention to real behaviour involved	Perception
Give info or instructions to	Action of giving information or instructions to someone	Type of action
Receive info or instructions from	Action of receiving information or instructions from someone	
Give help to	Action of helping or providing support to someone	
Receive help from	Action of receiving help or support from someone	
Follow who	The act of follow/repeat the behaviour of other people	People
Competitive behaviour	Competitive behaviour (e.g. pushing, screaming, running, trying to get onboard without helping people).	
Lack of information or instructions or help	Lack of information on what to do, where to go, how to behave.	
No reaction	Lack of reaction or no action during the emergency	
Opposite behaviour or thought	Opposite action as results of an official instructions that is perceived as incorrect or not useful	
General behaviour with	Any kind of action not coded in the other codes (e.g. moving from a place to another, collecting lifejackets) performed with someone	
Himself or alone	The behaviour/interaction is linked to the passenger himself	
Familiar people	The behaviour/interaction is linked to familiar people (family members, friends, people already known before the emergency happened)	
Other people	The behaviour/interaction is linked to unfamiliar people (people meet or known during the emergency)	
Crew and staff	The behaviour/interaction is linked to with the crew (costa Concordia crew, waiters, kitchen staff)	
Close to the safety boat	Behaviour in the proximity of the safety boat	Location
Inside the ship	Any other location not coded in the other codes	

allows to estimate the agreement between coders accounting for their chance agreement (MacPhail et al., 2016) and to evaluate the extent to which these coders make similar coding decisions in assessing the characteristics of text (Lombard et al., 2004) in terms of behaviours. A random sample consisting of the 10% (five out of 49) of the total statements (Lombard et al., 2004) was extracted and coded independently for the κ by the principal investigator and by an external second coder who was invited to code the sample. The second external coder, a student from Università Politecnica delle Marche with experience in coding research, underwent a training process consisting of revising the codebook (that contains the definition of the nodes) to get comfortable with the coding scheme (Neuendorf, 2017). Blind coding, in which coders do not know the aim of the research (Knobloch, 2008), was used in order to reduce bias that compromise validity. A criterion of 0.80 or greater for Cohen's kappa was selected based on the literature indications (Lombard et al., 2004). There was excellent agreement between the two coders, with $\kappa = 0.826$ ($p < .001$).

In order to assess how and whether passengers behaved, both in relation to familiar persons or strangers, we performed a mixed method content analysis to identify core consistency and patterns in the passengers' witness evidence. Results were then analysed in order to explore the relationship between the codes. In order to explore and show

data relationships and patterns we used Nvivo software's matrix coding/crosstab function that provides matrices and show the relationship between different groups of codes within the set of instructions. The relationships described by matrices are mainly focused on which behaviours (coded based on the behaviour) are related to different typology of people. Combinations of codes are presented in tables that provide frequencies expressed as numbers of key categories (Neuendorf, 2017; Krippendorff, 2004).

3. Results

Passengers reported fear, confusion, 'panic' and competitive behaviour, as well as cooperation. They also reported communication issues and lack of trust in the authorities. Starting from the word count analysis, specific words in the text were searched. Table 3 presents the count of the main words used in the whole document. The word "panico" (panic) with stemmed words, is present in the text 34 times, representing 0.18% of the whole document, 40 times before (0.21%), two times during (0.01%) and eight times after (0.04%).

The 21 codes used in the coding analysis produced 1148 references (number of times when an instruction has been coded): 467 references were found using the theme "people", 503 using the theme "behaviour", 50 using the theme feeling, and 30 using the theme "location". The remaining nodes were for "gender" (49) and "nationality" (49) (Table 4).

According to the count of codes by person: a) 17 (35%) passengers said they provided help to someone; b) 21 (43%) passengers said that they received help; c) 25 (51%) passengers reported competing behaviours and 29 (59%) said they behaved in a different way to what they have been told by the crew members; d) 41 (84%) passengers received information from others; e) 8 (16%) passengers followed other passengers; and f) 36 (73%) passengers reported a lack of information by the crew members.

The Nvivo Crosstab function provided a set of 3 relational matrices (contingency tables) for analysis: a behaviour-by-person 4×7 matrix, a panic behaviour-by-location 2×3 matrix and an opposite behaviour-by-instructions from the crew 3×2 matrix. The first matrix describes the relation between the behaviour described and the person with whom the passenger made such behaviour. This matrix is used to analyse if the behaviour of passengers was with familiar people, strangers or individuals. The second matrix is used to define the location of passengers when they describe competitive behaviour such as pushing, trampling and trying to board the safety boat without helping others. The last matrix is used to investigate the relation between the instruction from the crew and the decision the passenger has taken (follow vs not to follow). The variables are all a similar kind or type (case nodes v case nodes).

The descriptive analysis shows that: a) 23 (65.7%) of codes refer to help given to a familiar person; b) 17 (44.7%) of codes refer to people who received help from stranger; c) there was no difference between codes that describe receiving information from familiar or others; d) nine (64.3%) of the codes about following behaviours refers to strangers and three (21.4%) to familiar people, e) 54 (54.5%) of general behaviours codes refer to familiar people, 25 (25.3%) to others. Results are summarised in Table 5 and Fig. 1.

Table 3
Count and weighted percentage of social words.

WORD (ITA)	WORD (ENG)	REFERENCE	COVERAGE
Panico	Panic	34	0,18
Famiglia	Family	11	0,08
Marito	Husband	32	0,17
Moglie	Wife	47	0,25
Figlio	Son	12	0,06
Paura	Fear	12	0,05
Cosa fare	What to do	68	0,24

Table 4
Count of the main nodes used for the analysis.

THEME	CODE LABEL	N OF REFERENCES
People	Crew and staff	202
	Familiar people	108
	Other people	127
	Himself or alone	30
Behaviour	Follow who	14
	General behaviour with	99
	Give help to	35
	Give information or instructions to	10
	Lack of information or instructions or help	92
	No reaction	4
	Opposite behaviour or thought	53
	Competitive behaviour	46
	Receive help from	38
	Receive info or instructions from	112
	Feeling and perception of the risk	50
Gender	Female	23
	Male	26
Nationality	Italian	43
	Foreigner	6
Location	Inside the ship	7
	Close to the safety boat	23

In total 59 descriptions of behaviours related to competitive behaviours were found deriving from the competitive behaviour-by-location 2 × 3 matrix; of these 17 (13%) are inside the ship, 41 (56%) are related to a location in proximity of the safety boats and 1 (3%) to behaviour inside the safety boat. The following behaviours were grouped under “cooperative behaviours” to make a comparison with competitive behaviours: a) give info or instructions to; b) receive information/instruction from; c) give help to; d) receive help from; and e) follow who.

There was a significant association between the behaviour and the location of the passenger ($\chi^2 = 45.7, p < .001$). This result is consistent with the odds ratio, which shows that the odds of having competitive behaviour were 9.4 times higher in the proximity of the safety boats than inside the ship (Table 6).

Most of those behaviours called ‘panic’ refer to the description of

Table 5
Results of the behaviour-by-person 7 × 4 matrix.

	GIVE INFO OR INSTRUCTIONS TO (N = 10)	RECEIVE INFO OR INSTRUCTIONS FROM (N = 112)	GIVE HELP TO (N = 35)	RECEIVE HELP FROM (N = 38)	FOLLOW WHO (N = 14)	NO INFO OR INSTRUCTIONS OR HELP FROM (N = 92)	GENERAL BEHAVIOUR WITH (N = 99)
Crew	2 (20%)	90 (80.4%)	0	14 (36.8%)	2 (14.3%)	88 (95.7%)	9 (9.1%)
Familiar people	4 (40%)	8 (7.1%)	23 (65.7%)	7 (18.4%)	3 (21.4%)	0	54 (54.5%)
Himself or alone	0	2 (1.8%)	1 (2.9%)	0	0	1 (1%)	11 (11.1%)
Others	4 (40%)	12 (10.7%)	11 (31.4%)	17 (44.7%)	9 (64.3%)	3 (3.3%)	25 (25.3%)

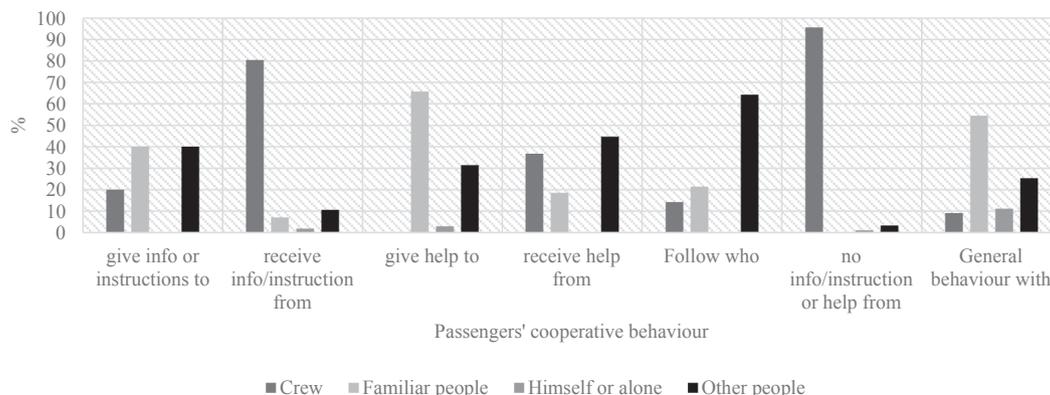


Fig. 1. Percentages of behaviour-by-person 7x4 matrix.

other people’s behaviours (80%) rather than familiar people (9%) or staff (11%). No one described his own behaviour as ‘panicking’, similar to previous findings in the literature (Fahy et al., 2012).

Almost everyone in the sample claimed that they received little information or didn’t receive information at all from staff; in total 58 nodes related to instructions from crew and of these 47 (82%) resulted in opposite behaviours, 9 (15%) in general behaviour and 2 (3%) to a following behaviour (Table 7).

4. Discussion

The evacuation during the Costa Concordia disaster was very challenging. The delay in declaring the alarm and the consequent late issue of the evacuation order, in fact, resulted in a less quick and effective abandonment of the ship. Furthermore, the abandonment by the captain before the end of the process resulted in a lack of management with the staff members who had to rely instead on organizational improvisation and their experience and knowledge rather than specific procedures to

Table 6
Analysis of competitive and cooperative behaviour vs. location.

BEHAVIOUR	INSIDE SHIP (N = 96)	PROXIMITY OF SAFETY BOAT (N = 86)	OR (95% CI)	P VALUE
Competitive	29 (30.2%)	69 (80.2%)	9.4 (4.7–18.6)	<.001
Cooperative	67 (69.8%)	17 (19.8%)	1	

Table 7
Opposite behaviour-by-instructions from the crew 3 × 2 matrix.

BEHAVIOUR	INSTRUCTIONS FROM CREW
Opposite behaviour or thought	47
General behaviour with	9
Follow others	2

manage the situation. Such lack of management and the inability of the crew to effectively manage the emergency (they also faced the same uncertainties of passengers) had important consequences for people's behaviour: according to official documents, after the captain abandoned the ship, passengers realised that the emergency was not just a blackout and quickly lost trust in authorities' instructions and communications that resulted in spontaneous organisation and behaviours.

The results of this analysis highlight the challenges that passengers experienced in accessing, processing and applying information to make decisions. The qualitative analysis of the passengers' statements suggests that during the emergency people exhibited different behaviours during different phases of the evacuation. Although it is not possible to make a clear distinction between what happened before the evacuation signals were given, the evidence provides a description of the general trend of the behaviours during the emergency. Passengers described a first phase of disbelief and describe feelings of fear and confusion relating to the moments immediately following the impact.

These results are in line with the results of previous studies (Kvamme, 2017; Alexander, 2012) which conclude that the emergency of the Costa Concordia was mainly characterised by cooperative behaviour and competition occurred only seldomly. A substantial element that emerges from this qualitative analysis and that adds meaning to the results already achieved with previous research is the suggestion that competitive behaviour occurred in correspondence with the specific situation with the lifeboats. Summarising the qualitative results, most people described cooperative behaviour, even between people with no bonds before the emergency. Almost all the passengers declared that they didn't receive any information or support from the crew; furthermore, when they realised that the emergency was more severe than described by the crew, they decided to behave spontaneously against crew instructions. Passengers witnessed episodes of behaviour they described as 'panic' mainly in the proximity of the safety boats and as a behaviour of others, including the staff. These statements are confirmed by the results of the quantitative analysis, as reported below and confirmed existing studies about competitive behaviours (Chertkoff and Kushigian, 1999).

There is almost no evidence of difference between familiar people (family and friends) and strangers when referring to helping people during the emergency. This result is in line with the social identity approach that describes that during emergencies people affected by the incident often come to see themselves as a group through common fate and behave as a group instead of being selfish (Drury, 2018).

The quantitative analysis also showed that lots of passengers referred to lack of support in terms of information, management, evacuation instructions and especially to a critical management of the boarding of the lifeboats that was one of the most crucial phases in the evacuation. The lack of help, information or support, especially from the staff resulted in spontaneous behaviours and decisions in order to deal with a situation characterised by uncertainty, or even they helped the staff to evacuate people and manoeuvre the lifeboats. The decision to delay the evacuation and reassure the passengers that nothing was happening, in fact, produced a series of instructions and orders that were not followed by the people, who preferred to act following their own perception of the ongoing situation. The decision to delay the issue of the evacuation order resulted in conflicting information to the passengers who soon realised that something was happening and stopped trusting the authorities. Such condition was pivotal in influencing the behaviour of passengers. Most of the people who received information from the crew behaved in the opposite way when they realised that the situation was different. The management in relation to the information was very poor and giving incomplete information to passengers even when the situation was already clearly assessed resulted in the opposite outcome. Such a condition is commonly reported in literature when people loses trust in the authorities (Eiser et al., 2012; Burningham et al., 2008; Scolobig et al., 2015; Eriksen and Prior, 2011), as happened on the Costa Concordia.

The analysis of the passengers' witness statements showed that during the emergency people largely behaved in a very cooperative way, even though 'panic' was the word used most by passengers; what people described with 'panic', as confirmed by the literature, were mostly fear and anxiety. However, many of them reported scenes of crushing, and behaviours of pushing and running in proximity to the lifeboats. People who could not access the lifeboat tried to find another way of escaping: of the 32 victims, 7 tried to escape jumping on the sea while the rest decided or were instructed to move on the other side of the ship to find another safety boat. Passengers never refer to themselves when describing panic, and this is consistent the literature that says that panic is often reported when people observe the behaviour of others (Fritz and Marks, 1954), if it leads to an unsuccessful outcome (Kvamme, 2017). The term is also widely misused when people describe their own state of intensified anxiety or fear, although the actions they report taking themselves are typically both reasonable for the situation and appropriate (Fahy and Proulx, 2009). This also supports the theory that people often overestimate the extremity of an emotion in a crowd (Goldenberg et al., 2020). While it is not useful to say that collective panic happened during the event, since people usually refer to panic to describe fear and chaos, it is possible to say that competitive behaviour was present only during the boarding of the lifeboats. While on the ship and far from the safety boats, people were able to obtain, exchange and process information to find the best way to reach the safety boats. When in proximity of the gates on the muster stations, people pictured the real situation in their minds: not all the safety boats could be used because of the rotation, therefore seats on the boats were limited. This is a step forward in the analysis of the evacuation of the Costa Concordia because it confirms findings about evacuation behaviour on the Costa Concordia of other studies (Kvamme, 2017; Alexander, 2012), but this analysis is able to exactly define precisely where competition happened.

As already explained in the introduction, evacuation behaviour on cruise ships can be compared to that in buildings (Casareale et al., 2017) and the same conditions that trigger competitive behaviour can be applied (Chertkoff and Kushigian, 1999): the perception of the danger, the short number of boats (lack of exits), the feeling that the boats were running out (and exit not available anymore) could have triggered competitive behaviour in the proximity of lifeboats and explain why competition did not happen in other places throughout the emergency. These results reinforce the idea that is not useful to talk about "panic" when addressing to peoples' behaviour during an event, as previous studies did when analysing the Costa Concordia disaster (Alexander, 2012) but it is preferable to talk about competitive behaviours, which can be measured and compared with cooperative behaviours. Moreover, such behaviours need to be contextualised and every situation referred to the environmental conditions.

The deficiencies in command on the Costa Concordia highlight the need to introduce new protocols ideated to increase the skills of the personnel called to manage an emergency at sea. Such protocols should be tested with ad hoc training programs that consider also unexpected scenarios (as a captain leaving his/her ship). The objectives to be achieved in order to allow the staff responsible for managing passengers during an emergency to obtain the relevant certifications must be expanded. In addition, those responsible for preparing communities and organizations for disasters should also plan for improvisation to occur.

This study has some limitations. Firstly, the data presented and analysed in this paper come from secondary sources; all the passengers' witness evidence have been collected during the hearings held by the Court of Grosseto by lawyers of the Grosseto court. The authors requested direct contact with the passengers contacting their lawyers, but this was denied, and questions were not allowed. The legal and official nature of the evidence excludes the types of bias that can be found in the media, which tends to exaggerate the story; and due to the fact of people responding under oath, all the answers could be considered authentic. Secondly, only 49 statements were analysed of the total of 3216 passengers. In order to ensure solid credibility (Bengtsson,

2016) of the content analysis, it would have been useful to analyse the totality of the survived passengers' statement; however, those collected are the only statements available and made public by the court; therefore a deeper analysis of passengers' behaviour cannot be performed. The design also has some strengths. Passengers' statements about competitive and cooperative behaviours were not made to the prompts of researchers' interview questions and therefore can be considered relatively naturalistic.

5. Conclusion

The number of maritime accidents and disasters is growing and, despite the increasing body of regulation and codes, there is a only a small body of scientific literature on maritime disasters, discussing emergency management and factors that affect (enhance/reduce) the success of the evacuation and safety procedures; in particular, specific human factors, in terms of human error in management and emergent behaviours, are still not deeply investigated and considered in the creation of guidelines and rules to improve the management of future disasters.

This paper highlighted that the main factor in reducing the effectiveness of the evacuation procedure was the lack of management rather than the behaviours among evacuees. Spontaneous and cooperative behaviour, both among evacuees and the staff, helped people to adapt to the event and possibly contributed to reduce the number of casualties. On the contrary, competitive behaviours happened but only in relation to specific environmental constraints and limited to the proximity of lifeboats, where people described others crushing and pushing.

Even if regulations and laws define the captain as the main authority on the ship and requires him/her to manage emergencies, situations in which the captain did not perform his role can happen and have happened in the past. When such unexpected and unplanned events and contingencies arise, the management of the emergency is often based on organizational improvisation and on the capacity of the people to find a solution by themselves that sometimes, as shown in this paper, strongly affect the effectiveness of the procedures. Therefore, a decision support system (DSS) for the crew could be defined, to accurately predict the

Appendix A. List of the behaviours described by passengers

The single behaviour category is indicated in the first column, the second column reports the original comment of the passenger, while the translation of passengers' comment is reported in the third column.

BEHAVIOUR	QUOTATION (ITALIAN)	QUOTATION (ENGLISH)
Fear	"[...] ho visto che stava salendo l'acqua, quindi mi sono spaventata". (Passeggero 1, 12 maggio 2014)	"[...] I saw that the water was rising, so I got scared". (Passenger 1, May 12, 2014)
	"Erano circa le nove e un quarto quando abbiamo avvertito un forte boato, inizialmente siamo rimasti fermi, poi la gente ha iniziato a gridare ed accalcarsi verso l'uscita, così anche noi, spaventati, ci siamo avviati in quella direzione". (Passeggero 16, 13 maggio 2014)	"It was about a quarter past nine when we heard a loud roar, initially we stood still, then people started shouting and huddling towards the exit, so we too, frightened, moved in that direction". (Passenger 16, May 13, 2014)
	"Ho sempre avuto paura che la nave si inclinasse a tal punto da ribaltarsi. Questa era la mia preoccupazione più grande, perché sarei finito sotto la nave". (Passeggero 21, 29 aprile 2014).	"I've always been afraid that the ship would tilt so much that it would tip over. This was my biggest concern, because I would have ended up under the ship" (Passenger 21, April 29, 2014).
Confusion	"[...] siamo scesi dalla scala interna sino al ponte 4 dove vi era la confusione totale". (Passeggero 13, 7 ottobre 2014)	"[...] we went down the internal staircase to deck 4 where there was total confusion". (Passenger 13, October 7, 2014)
	"Usciti di nostra iniziativa dal teatro abbiamo trovato panico e confusione". (Passeggero 27, 20 maggio 2014)	"We left the theatre on our own initiative and we found panic and confusion". (Passenger 27, May 20, 2014)
Panic	"[...] subito si è creato il panico anche perché nessuno ci ha fornito informazioni". (Passeggero 3, 7 ottobre 2014)	"[...] panic immediately arose also because nobody gave us information". (Passenger 3, October 7, 2014)
	"[...] abbiamo notato persone nel panico, qualcuno correva, qualcuno era a terra". (Passeggero 13, 7 ottobre 2014)	"[...] we noticed people in panic, someone was running, someone was on the ground". (Passenger 13, October 7, 2014)
	"[...] ho cercato di calmare mia moglie che era nel panico, ricordo di averla addirittura presa a schiaffi". (Passeggero 16, 13 maggio 2014)	"[...] I tried to calm my wife who was panicking, I remember even slapping her". (Passenger 16, May 13, 2014)

(continued on next page)

procedures to be implemented in the absence of the command figure, to ensure the information exchange among crew members and between the crew and passengers. Understanding how people deal with a situation and which are the factors that affect their decision is pivotal to increase the effectiveness and the efficacy of future plans and regulations. This could help planners to review their strategy, anticipate similar events and consider all the factors.

6. Ethics statement

All the documents used in this research have been formally requested to the Court of Grosseto (Italy) via a formal request to access the public documents according to the Italian Law Art. 116 c.p.p. "Copie, estratti e certificati" (Copy, extracts and certificates).

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Author contributions

The authors' names are in alphabetical order. All the authors contributed equally to the making of this manuscript.

Data availability

All the passengers' witness evidence collected, as well as the ruling of the Court of Grosseto no. 115/2015 are publicly available and can be requested to the Court of Grosseto.

(continued)

BEHAVIOUR	QUOTATION (ITALIAN)	QUOTATION (ENGLISH)
Competitive behaviour	“[...] c'era molta fila la gente spingeva e c'erano persone nel panico, ricordo che una ragazza per riuscire a salire [sulla scialuppa] si è seduta sulla mia spalla”. (Passeggero 18, 6 ottobre 2014)	“[...] there were a lot of people pushing and there were people in panic, I remember that a girl sat on my shoulder to be able to get on [the lifeboat]”. (Passenger 18, October 6, 2014)
	“La gente oramai era in preda al panico, spingevano per poter entrare nelle scialuppe e l'inclinazione aumentava ad ogni minuto, io e mia moglie proteggevamo con i nostri corpi i bambini e i miei genitori dalle persone che si muovevano alla ricerca di una scialuppa”. (Passeggero 26, 29 aprile 2014)	“People were now panicking, they pushed to be able to enter the lifeboats and the inclination increased every minute, my wife and I protected with our bodies our children and my parents from people who moved in search of a lifeboat”. (Passenger 26, April 29, 2014)
	“Nella mia posizione, aggrappato al passamano del corridoio, cercavo di proteggermi dalle persone che in preda al panico cercava[no] di aggrapparsi a tutto ciò che poteva compreso a me”. (Passeggero 16, 13 maggio 2014)	“In my position, clinging to the handrail in the corridor, I tried to protect myself from people who in panic tried to cling to everything that could including me”. (Passenger 16, 13 May 2014)
	“Tutti, soprattutto gli addetti ai lavori, sono andati in panico”. (Passeggero 42, 13 maggio 2014)	“Everyone, especially the personnel responsible for the evacuation, panicked”. (Passenger 42, 13 May 2014)
	“Le persone hanno iniziato ad accapigliarsi, io mi sono dovuta reggere ad un palo tenendo stretta la bambina per non venire travolta, un addetto si è rifiutato di farci salire perché diceva che non aveva l'autorizzazione allora noi siamo come impazziti e lo abbiamo costretto a farci salire”. (Passeggero 4, 13 maggio 2014).	“People started to fight, I had to hold on to a pole holding the little girl tight so as not to be overwhelmed, an employee refused to let us go up because he said he had no authorization; then we got crazy and we forced him to make us go up”. (Passenger 4, 13 May 2014).
	“Sono arrivati due membri dell'equipaggio ed hanno afferrato delle persone tirandole fuori [dalla scialuppa], la gente continuava a gettarsi dentro e la scialuppa non è stata completamente sbracciata nonostante due persone aiutassero spingendo dal ponte”. (Passeggero 4, 13 maggio 2014).	“Two crew members arrived and grabbed people by pulling them out [the lifeboat], people kept throwing themselves in, and the lifeboat was not fully hugged despite two people helping by pushing from the bridge”. (Passenger 4, 13 May 2014).
	“A quel punto io ho chiesto all'ufficiale come potevamo salvarci e lui mi ha risposto che aveva moglie e figli e ci ha lasciato lì”. (Passeggero 15, 26 maggio 2014)	“At that point I asked the officer how we could save ourselves and he replied that he had a wife and children and left us there”. (Passenger 15, May 26, 2014)
	“Al ponte 4, che abbiamo raggiunto faticosamente impiegando oltre 20 minuti, c'era un fiume di gente, tutti spingevano e non si riusciva a fare un passo”. (Passeggero 16, 13 maggio 2014)	“At bridge 4, which we reached with difficulty taking over 20 min, there was a river of people, everyone was pushing, and it was not possible to take a step”. (Passenger 16, 13 May 2014)
	“Ho notato scene assurde, tipo un ragazzo alto un metro e novanta che era in fila davanti a donne e bambini, senza dare loro la precedenza come invece avrebbe dovuto”. (Passeggero 34, 21 ottobre 2014)	“I noticed absurd scenes, such as a boy who was 6 feet tall and stood in front of women and children, without giving them priority as he should have done”. (Passenger 34, 21 October 2014)
	Distrust in leadership	“[...] la nave incombeva sopra di noi così io ho gridato al manovratore di sbrigarsi ed anche lui mi sembrava inesperto, come gli altri, siamo stati infatti lasciati a noi stessi per oltre due ore”. (Passeggero 3, 7 ottobre 2014)
“Continuavano gli ufficiali a dirci di stare tranquilli ma era chiaro che c'erano problemi”. (Passeggero 4, 13 maggio 2014).		“The officers kept telling us to be calm, but it was clear that there were problems”. (Passenger 4, 13 May 2014).
“[...] notavo gli inservienti filippini o comunque stranieri che cercavano di sbracciare la lancia ma loro non erano in grado di fare le operazioni, fino a che un passeggero ha preso l'iniziativa di rompere la catena che ci impediva la discesa”. (Passeggero 7, 12 maggio 2014)		“[...] I noticed the Filipino or foreign attendants anyway, who were trying to reach the lifeboat, but they were unable to do such operations, until a passenger took the initiative to break the chain that prevented us from descending”. (Passenger 7, 12 May 2014)
“Una volta sulla scialuppa credevamo fosse finita invece è stato anche peggio. Era gestita da dei camerieri, dei filippini, che però non sapevano fare nulla, non sapevano chiuderla né metterla a mare, l'hanno sganciata di colpo e siamo così caduti in mare, ma anche lì non erano in grado di manovrarla e andavamo così verso la nave, sentivamo delle botte e la gente urlava continuamente”. (Passeggero 20, 13 maggio 2014)		“Once on the lifeboat we thought it was over, but it was even worse. It was managed by waiters, Filipinos, who, however, did not know how to do anything, did not know how to close it or put it overboard, they immediately dropped it and we fell into the sea, but even there they were unable to manoeuvre it and we were going towards the ship, we heard beating and people constantly screaming”. (Passenger 20, 13 May 2014)
“[...] nel tragitto abbiamo incontrato un cameriere che non sapeva darci alcuna indicazione, tant'è che un passeggero lo ha addirittura preso a pugni”. (Passeggero 28, 26 maggio 2014)		“[...] on the way, we met a waiter who could not give us any indication, so much so that a passenger even punched him”. (Passenger 28, 26 May 2014)
“Ci è stato detto che era un guasto elettrico ma io e la mia amica abbiamo pensato che non era possibile che fosse solo questo, il personale con la giacca rossa, l'unico che abbiamo avvistato, ci invitava a tornare nelle cabine ma noi non eravamo convinte perché l'impatto era stato troppo forte, così abbiamo deciso di recarci alle lance e questo ci ha salvato la vita”. (Passeggero 25, 12 maggio 2014)		“We were told it was an electrical fault but my friend and I thought it was not possible that it was just this, the staff in the red jacket, the only one we spotted, invited us to go back to the cabins but we were not convinced because the impact had been too strong, so we decided to go to the boats and this saved our lives”. (Passenger 25, 12 May 2014)
“Una donna continuava ad invitare noi tutti a tornare alle cabine perché non c'era nulla di grave e saremmo ripartiti al più presto ma nessuno di noi le ha dato ascolto e siamo rimasti sul ponte”. (Passeggero 41, 6 ottobre 2014)		“A woman continued to invite us all to return to the cabins because there was nothing serious and we would be leaving as soon as possible, but none of us listened to her and we stayed on the deck”. (Passenger 41, 6 October 2014)
“Per tutto il percorso in cui ci siamo trasferiti dal lato sinistro al lato dritto siamo rimasti da soli e nessuno ci ha mai prestato assistenza o ci ha fornito indicazioni”. (Passeggero 3, 7 ottobre 2014)		“Along the way we moved from the left side to the straight side we were alone, and nobody ever gave us assistance or gave us directions”. (Passenger 3, 7 October 2014)
“[...] nessuno ci dava indicazioni, continuavano a dire che si trattava di un guasto elettrico ma nessuno ci diceva dove andare” (Passeggero 12, 12 maggio 2014)		“[...] nobody gave us indications, they kept saying that it was an electrical fault, but nobody told us where to go”. (Passenger 12, 12 May 2014)
“[...] siamo rimasti ad attendere il nulla, intendo dire che sono trascorsi parecchi minuti senza che avessimo disposizioni da parte dell'equipaggio di qualsiasi grado. Dopo tanto tempo, non riesco a dare un orario preciso, personale dell'equipaggio ci ha indicato di formare una catena umana mantenendo le posizioni che avevamo e ci hanno detto di percorrere il corridoio di comunicazione tra il lato sinistro e quello destro della nave”. (Passeggero 26, 29 aprile 2014)		“[...] we waited for nothing; I mean that several minutes have passed without any instructions from the crew of any degree. After a long time, I am unable to give a precise time, staff of the crew indicated to us to form a human chain keeping the positions we had and they told us to walk the corridor between the left and right sides of the ship”. (Passenger 26, April 29, 2014)
Communication	“Abbiamo avuto difficoltà a relazionarci con il personale, molti infatti, come i cabinisti, non parlavano italiano e quindi non era possibile la necessaria comunicazione”. (Passeggero 34, 21 ottobre 2014)	“We had difficulties in relating to the staff, many of them in fact, like the cabin crew, did not speak Italian and therefore the necessary communication was not possible”. (Passenger 34, 21 October 2014)
	“I camerieri non parlavano italiano. Non ci davano notizie ed a gesti ci impedivano di salire sulle lance, facendo il gesto di aspettare”. (Passeggero 35, 12 maggio 2014)	“The waiters did not speak Italian. They did not give us news and with gestures prevented us from getting on the lifeboats, making the gesture of waiting”. (Passenger 35, 12 May 2014)

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BEHAVIOUR	QUOTATION (ITALIAN)	QUOTATION (ENGLISH)
Cooperation	“Dopo l’impatto è andata via la luce, ci è stato detto che era un blackout, sono state date altre indicazioni che tuttavia non abbiamo compreso perché non sono state tradotte in lingua inglese”. (Passeggero 37, 26 maggio 2014)	“After the impact, the light went out, we were told it was a blackout, other indications were given which, however, we did not understand because they were not translated into English”. (Passenger 37, May 26, 2014)
	“[...] io piangevo perché non avevo il giubbotto, il mio fidanzato lo ha chiesto a due membri del personale che però non gliel’hanno dato, invece un filippino se lo è tolto e me lo ha dato”. (Passeggero 5, 26 maggio 2014)	“[...] I was crying because I did not have a jacket, my boyfriend asked two staff members who did not give it to him, instead a Filipino took it off and gave it to me”. (Passenger 5, May 26, 2014)
	“[...] una signora ha dato la precedenza a mia madre e mio fratello ma loro da soli non potevano andare, mia moglie allora ha detto a mio figlio di salire ma lui non voleva andare da solo, la signora così si è impietosita e ci ha dato la precedenza”. (Passeggero 6, 26 maggio 2014)	“[...] a lady gave priority to my mother and my brother, but they could not go alone, my wife then told my son to go up, but he did not want to go alone, the lady was so pitied, and she gave us priority”. (Passenger 6, May 26, 2014)
	“Ci siamo avviati verso le scialuppe, è stato molto difficile perché c’era gente ovunque, una volta arrivato al mezzo, un inserviente mi ha fatto passare perché avevo la bambina in braccio e le persone presenti si sono mostrate collaborative”. (Passeggero 9, 13 maggio 2014)	“We headed towards the lifeboats, it was very difficult because there were people everywhere, once I got to the lifeboat, an attendant let me go because I had the baby girl in my arms and the people there were collaborative”. (Passenger 9, May 13, 2014)
“Né io né il mio compagno né i due amici che erano con noi sapevamo nuotare, allora ho chiesto a un rumeno dell’equipaggio, tale Dan, di accompagnarmi in cabina ma lui mi ha detto che era pericoloso e che avrebbe cercato lui dei giubbotti, è tornato e me ne ha portati solo due, uno da adulto e uno da bambino”. (Passeggero 12, 12 maggio 2014)	“Neither my partner nor the two friends who were with us knew how to swim, so I asked a Romanian crew member, Dan, to walk me to the cabin, but he said it was dangerous and that he would look for jackets, he returned and he brought me only two jackets, one for an adult and one for a child”. (Passenger 12, 12 May 2014)	
“Saliti a bordo della scialuppa, tutti e sei, abbiamo atteso circa 20 minuti, cercando di fare entrare più persone possibili” (Passeggero 40, 7 febbraio 2012)	“Once on the lifeboat, all six of us boarded the lifeboat, we waited about 20 min, trying to bring in as many people as possible”. (Passenger 40, 7 February 2012)	
“Quando sono riuscita a salire finalmente su una scialuppa mi sono aggrappata ad un ferro perché la scialuppa pendeva tutta da una parte. Alcuni passeggeri compresi i miei amici hanno collaborato per farla staccare”. (Passeggero 48, 26 maggio 2014)	“When I finally got on a lifeboat, I clung to an iron because the lifeboat hung all over to one side. Some passengers including my friends worked together to get it off”. (Passenger 48, May 26, 2014)	

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