Safety and Security in Sudan: Humanitarian Aid Workers' Risk Perception

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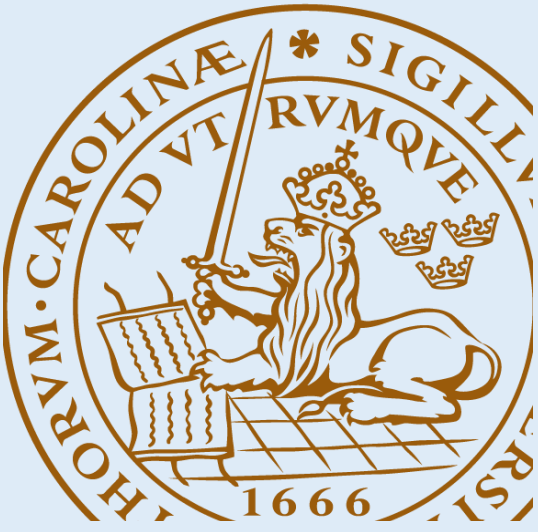

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Abstract
Protection of humanitarian aid workers (HAWs) is a challenging task. There are various reports on the topic where much research seems to focus on traditional physical attacks and intentional violence against HAWs (*security*) rather than the accidental event risks (*safety*) or discussing it separately. These risks are usually defined by the organization's security risk management holding the power in risk definition and protection measures establishment. This research argues for the need to include humanitarian aid workers' perception in security risk management to ensure their holistic protection, enabling to bridge the "duty of care to protect" of the latter with the "duty of care to manage own risk" of the former. To explore the research question "What factors influence humanitarian aid workers' risk perception in Sudan", the study includes 26 semi-structured in-depth interviews with various humanitarian aid workers based in Sudan. It concludes that it is specific individual heuristics, bringing important views on what these workers value, their inherent biases, and individual and external factors that mutually intersect and influence the humanitarian aid workers' risk perception. The *individual factors (characteristics)* here include *age, sex (gender), race and ethnicity, nationality, religion, understanding of risk, knowledge, values, and interests*. The *external factors* include *country context dynamics, place and time, humanitarian aid worker's organization and risk information*. All of these arguably create the unique risk identity of the humanitarian aid worker needed to be considered, notably in connection with power, whose risk definition and communication count and prevail.

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Summary

Humanitarian aid workers (HAWs) face unique conditions based on their work focus and deployment, ranging from physical to mental challenges as well as risks. Humanitarian and development organizations are striving to protect their workers, introducing various protection measures. However, much of the research focuses on security risks, including intentional violence and physical attacks (ranging from robbery, artillery fire, ambush, hostage taking, landmines, aggressive crowds attacks etc.) rather than the safety ones, including accidental events such as physical and mental health well-being, or diseases, car accidents, etc. The latter, if discussed, is then usually deliberated separately, or is not published, possibly due to its data-sensitive nature. Within the large studies focusing on the protection and security and/or safety of humanitarian workers, the specific context within which they live and work is not always studied. Moreover, it is the security risk manager who seem to hold the key power in defining what risk is and how we should address it.

For this reason, this study argues for the inclusion of humanitarian aid workers' perspectives on risk, safety and security, which can vary depending on their individual characteristics, who they are, how they think and perceive, as well as external factors, including the environment surrounding them. To make the study more concrete and capture relevant relations between the way risk is perceived and how it interlinks with other factors including a specific environment, a case study of Sudan is introduced. Sudan represents one of the key fragile and dynamic contexts for humanitarian aid workers (both contemporary and historically) with many existing risks with progressive nature. To fully explore the thesis' research question: "What factors influence HAW's risk perception in Sudan?", a qualitative case study approach is applied, building on 26 semi-structured interviews conducted with various humanitarian aid workers currently based in Sudan (ranging in their age, sex, nationality, organization, years of experience and area base).

Results display that humanitarian aid workers face a variety of safety and security risks, where the security ones seem to occupy the primary place for humanitarian aid workers as well. As the aim was to understand how humanitarian aid workers perceive their safety and security, the research points to various individual factors (characteristics) and external factors' intersectionality, shaping humanitarian aid workers' overall risk perception and evaluation. The individual characteristics include age, sex (gender), race and ethnicity, nationality, religion, understanding of risk, knowledge, values, and interests, closely related also to an individual's cognitive processes. Under these, humans (here applicable to both humanitarian aid workers as well as security risk managers) engage in mental strategy as well as mental shortcuts, which is crucial for decisions prior to or under risk but can further stem a bias and can skew the overall risk perception and its importance.

Additionally, the external factors come into play where, within this study, the country's context dynamics stand out, ranging from economic, political, socio-cultural, historical, and environmental to its level of development. Sudanese society, described as hierarchic, imposes strict nationalistic and/or religious-cultural beliefs influencing the HAWs' role, values, and identity (such as race, gender, and society membership) affecting risk perception and evaluation. Moreover, under this category, a prominent temporal and spatial role for risk perception in Sudan plays various places, including West, East or the capital – Khartoum – and time, ranging from year, week, and day periods. Additionally, the role of the organization where the humanitarian aid worker works, as well as the way how the workers approach risk

information, display both key sources of power in risk definition and influence on its perception and individual evaluation.

The thesis' findings support the idea to approach humanitarian aid workers' safety and security protection not only holistically based on shared characteristics (their work focus, shared environment, or shared professional values) but with an individual, person-centred approach, including their unique identity and experiences. Based on the findings, this study can further serve as a good reference for similar environments, notably sharing the sociocultural and political norms, such as other Arab contexts. Moreover, it opens the field for further consideration of protection measure establishment or re-evaluation. Finally, it calls for the inclusion of humanitarian and development aid workers outside of the classic organizations, as well as those regarded as "irregular" with their specific risk profiles on both security risk management as well as wider research level.

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I would like to express my deepest gratitude to all the interviewees who agreed to participate in my research. Thank you for your dedicated time, openness, and trust to share your personal details and views without which this thesis would never see the light of day. Sudan has taught me a lot and I feel privileged and honoured I could have worked there, make it my case study, and renew discussions on it. My heart and prayers go out to all of you there, all my ex-colleagues from Sudan and all those displaced throughout numerous, ever-present conflicts and disasters.

May Sudan see hope and peace soon.

لعل السودان ينعم بالامل والامان قريبا

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Abbreviations

HAW Humanitarian Aid Worker

HAWs Humanitarian Aid Workers

INGO International Non-governmental Organization

LNGO Local Non-governmental Organization

SRM Security Risk Management

UN United Nations

UNDRR United Nations Office for Disaster Risk Reduction

1 Introduction

Each year, tens of thousands of humanitarian aid workers (HAWs) are deployed globally. However, during their stationing in often fragile contexts, HAWs face unique physical and psychic challenges including insecure conditions and surroundings as well as mental stress (Nilles et al., 2020). Working in the humanitarian field has always been a perilous profession. Moreover, the statistics suggest the violence against HAWs is still on the rise, documenting the years 2021 and 2022 as historically the worst[1] in terms of attacks and HAWs causalities (Stoddard et al., 2021a:3; 2021b; 2022).

The *nature of threats* and *their perpetrators*, however, are changing. Whereas in the past the armed conflicts represented the main danger, today the non-state (armed) actors are responsible for the majority of HAWs causalities (including abductions, serious injuries, and fatalities), taking part in asymmetric conflict, pursuing their political, ideological, or strategic objectives (Stoddard et al., 2021a; Brooks, 2015:2-3). The existing reports on the HAWs safety and security topics (Fast, 2007; 2010; Insecurity Insight, 2021, 2022; Stoddard et al., 2021) – compiling data from various big international and smaller local non-governmental organizations (INGOs, LNGOs) – are still predominantly focusing on the traditional physical attacks of violence towards the workers. These include shootings, assault, sexual assault, kidnapping, explosives, airstrikes, etc., on which the organizations such as the United Nations (UN) or international or local Red Cross and Red Crescent focus their data.

Nevertheless, apart from the acts of physical violence, the data on the economic and opportunistic reasons behind the attacks on HAWs, including robbery and petty crime which are recommended to be monitored (Stoddard et al., 2021:8-9), seem to be lacking. This includes other possible risks such as road accidents, as well as risks linked with fragile or absent infrastructure such as roads, sanitation facilities, and living accommodations (Nilles et al., 2020). Other findings also highlight the mental health safety of HAWs where a generally stressful environment and working long hours under adverse or extreme conditions can significantly contribute to negative effects on personal health (ibid; Fast, 2010:368; Strohmeier et al., 2019). This issue also does not seem to always be part of the major reports (Stoddard et al., 2021a; Insecurity Insight, n.d.; also criticized by Morokuma et al., 2018:269) but is rather delivered to HAWs as a "to-be-considered information" in form of onboarding documents for international travels (Nilles et al., 2020). They could possibly not be given attention in the official reports due to their "unintentional cause" (UN, 2017) which is not linked with staff's status of humanitarian aid worker (HAW), excluding it from big organizations such as UN data collected on HAWs' security. However, these seem just as important when considering the safety and security of HAWs, as those not linked with direct violence might represent a higher value and proportion of the threats experienced by the workers (Stoddard et al., 2006:19-20; Fast & Wiest, 2007:18).

Numerous available research still seem to focus more on the organization's security management practices and their challenges or shortcomings, and dividing studies on either security or safety. Heavy focus is then given to security risks and the explanation of violence

[1] Note, that the global general data and statistics on HAW attacks have been measured only since the 1990s (Humanitarian Outcomes, n.d.; Morokuma et al., 2018)

against HAWs (Fast, 2007, 2010; Brooks, 2015,2016; Roth, 2015; Hoelscher et al. 2017; Brooks & Grace, 2020; Stoddard et al., 2021, and more).

The inclusion of HAWs' individual risk perception is a relatively new concept when examining their protection. Fast and Wiest (2007) claim to be the research's originators through a survey of 180 HAWs, examining how they perceive their own security and vulnerabilities to designate the most critical threats to their security or safety. Among their key findings were significantly more frequent experiences of low-threat security incidents among the HAWs. Additionally, they highlighted influences of work stress and significantly more risk exposure for national staff than for other HAWs (ibid:4).

Nonetheless, the current research direction seems to be gaining more attention now. Notably from humanitarian organizations, such as the International Committee of Red Cross (Guisolan et al., 2022), as well as on a global level, with recent prominent research conducted by EISF (today GISF) INGO organization (2018:7). It has examined diverse HAWs profiles in security management of different contexts, inter-linking personal identities with the influence of organization, and their influences on risk perception as well as subsequent human behaviour in rapport to their operational context (ibid:9).

1.1 Motivation, Purpose, and Research Question

The responsibility for HAWs protection seems dual – humanitarian organizations have "the duty of care to protect" employees from predictable risks (EISF, 2018:2; OCHA, 2019:2), while HAWs uphold the established protection measures, as well as the "duty of care to manage" their risk (OCHA, 2019:7; EISF, 2018:14). Furthermore, there appears to be insufficient safety and security preparedness of HAWs; many briefings take place in the field while HAWs are already on assignment and scarce are done as part of pre-deployment (Hasenstab & Smith, 2023:172).

Several researchers studied HAWs' safety and security and attempted to provide a holistic overview of recommendations for their protection. Both via quantitative (in numbers of attacks) and qualitative research (interviews of security risk management [SRM] officials, e.g., Brooks, 2016, or Stoddard et al., 2021a). However, a particular knowledge gap appears.

(1) Studies do not always consider the specific context of the HAWs[2] (Stoddard et al., 2021a; Van Brabant, 1998), which, depending on the goal, can severely impact HAWs' safety or security (EISF, 2018:5,23). For this study, the context of Sudan was chosen, representing one of the key fragile, unstable states. It is facing cyclical threats, including climate change hazards and political violence that remains largely unmanaged, exacerbating the already difficult situation in which its citizens (as well as HAWs) live (IOM, 2019; Bienczyk-Missala & Grzebyk, 2015:221). The context of this country has not seemed to be studied enough when it comes to HAWs safety and security. The recent studies seem to focus only on Darfur, traditionally perceived as a key volatile context, focusing on security violence against HAWs (Eckroth; 2010 or Leder, 2019, who contrasts Darfur with capital, Khartoum, but does not focus on it).

[2] Exempt can be the HAW organizations which generally conduct risk assessments for HAW protection considering the country and environment (e.g., OCHA, 2019:10). However, due to their sensitive nature, they are never publicly available.

(2) Within traditional SRM, the humanitarian organization seems to hold the key power to define what the risk is for HAWs and determine what levels of risks the organization is willing to accept (Behn & Kingston, 2010). This, however, might not always correspond to how HAWs themselves view the risks, as "security (safety risks) can mean different things to different people" (Williams, 2008:1), depending on the overlap between their individual characteristics, role, and the role of their organization (EISF, 2018).

Thus, this research aims to add to any risk assessments conducted within the country by exploring the HAWs' individual points of view to understand existing risks and influential factors within this perception. All of this is done within the Sudan context (further described below) as a case study, leading to the final research question (RQ) formulated:

What factors influence HAW's risk perception in Sudan?

1.2 Sudan's Context

Sudan lies in Northeast Africa and is inhabited by 46.8 million people (WBG, 2022). It is neighbouring 7 states – Egypt, Libya, Chad, CAR, South Sudan, Ethiopia and Eritrea – and currently comprises 18 different states and one disputed area with South Sudan, *Abyei* (Wikipedia, n.d.). *Figure 1* represents the current in-use map by the UN (2012) and the global community as per the agreed 2011 partition of Sudan and South Sudan (Searcy, 2019).

Figure 1: Current Political Map of Sudan. Source: UN (2012)

Sudan has a variable climate ranging from desert and semi-desert areas in the north to arid savannah in the east, west and south. The land and natural resources are crucial for the country and its backbone economy, as 64% of the population still lives in rural areas (UNEP, 2020). However, the country is severely impacted by climate hazards, experiencing extreme weather

events, ranging from floods to droughts, haboob (sand and dust storms), wildfires, disease outbreaks, and infestations (IOM, 2022:19; WBG, 2021). Increasing environmental degradation and desertification negatively influences agricultural productivity and livelihood opportunities and the loss of natural pastures. This contributes to a change in human mobility patterns and leads to conflict over scarce resources, especially those of nomadic-pastoralist communities, forming a major part of the population (IOM, 2022:17; De Coning & Krampe, 2022). These, coupled with the insecurity of regular inter-communal conflicts (notably in the West), lead to regular displacing of population governmental instability, rapid population growth and economic crisis, which leaves Sudan ranked as one of the most vulnerable countries in the world (De Coning & Krampe, 2022).

Since its gained independence from Great Britain in 1956, numerous military coups, civil wars, separation from South Sudan in 2011 as well as a long-term government of Omar-al-Bashir between 1993-2019 have influenced the state of the country today (Searcy, 2019; Young, 2020:9). The 2019 Revolution and further establishment of *Transitional government* represented a hope for transition from the military government to a stable civilian government after 2 years (ICG, 2023).

However, violence persisted throughout the recent events, in particular, the military coup of 25 October 2021 (*the most up-to-date political event during the time of the research*[3]), which cut the transitional process short as the political tensions between the military and civilian rulers have never fully settled (IOM, 2022:24). It further restored Sudan's non-violent civilian resistance movement (led by the Resistance Committee), demanding a return to democratic rule and protest against the rapidly deteriorating economy (Hoffman, 2021:1,4). These, however, met with government resentment – security forces responding with tear gas or live ammunition (IOM, 2022:24) – resulting in at least 125 protesters killed between 2021-2023 (Aljazeera, 2023b) and thousands injured (HRW, 2022). This was similar to the 2019 Revolution which seemed to have concentrated violence even more resulting in the Khartoum massacre killing at least 127 protesters (Freedom House, 2021a). However, apart from the numerous risks and attacks on civilians (Searcy, 2019), violence against HAWs also arose and continued to spread (Insecurity Insight, 2021:1-2; 2022:1-2).

[3] Note that the power struggle was recently renewed, as the fighting at-verge-of-civil-war between Rapid Support Forces (RSF) and Sudanese Army Forces (SAF) since 15 April 2023 is continuing until today (Aljazeera, 2023a). The parties disagree over the future of the country and power arrangement. The use of heavy machinery and airstrikes result in many civilian casualties caught in the middle (ACLED, 2023).

2. Conceptual Framework

The available safety and security reports highlight the persisting missing uniformity or consensus on the terminology used among different agencies and article authors on this topic, such as what counts as "security incident" or who is "humanitarian aid worker" (Bollettino, 2008:265; Fast, 2010:368; Brooks, 2016:3). This poses lack of reliable and incoherent data, making a holistic overview of the safety and security of humanitarian aid workers (HAWs) non-existent. Thus, this chapter presents the key terms defining the scope of this study and the aforementioned research question. What is *security*, what is *safety*, how do *hazard* and *risk* relate to them and who is considered a *HAW* within the research? Finally, to provide conceptual clarity within the research scope, key findings and aspects of *risk perception* will be presented.

Security and Safety

There are various understandings of these two terms. Within this research, the distinction between these is as adopted by the UN organisations as well as by the researchers studying the risks HAWs face. They distinguish between *security* as "protection from acts of intentional violence" (Fast, 2007:138; UN, 2017), such as robbery, artillery fire, ambush, hostage taking, landmines, aggressive crowds attacks, etc. *Safety* refers to "protection against accidental events", for example driving accidents, where the authors usually also include diseases and health issues, e.g., malaria etc. (Fast, 2007:138; Stoddard et al., 2006:151). Furthermore, *safety* here also encompasses the "well-being" and "mental health" of HAWs. This seems to be often neglected when researching the *safety* and *security* of HAWs (Fast, 2010:368) and does not fit under the security term widely used among the researchers, and is often researched separately (Strohmeier et al., 2018; Aldamman et al., 2019; Foo et al., 2023).

Risk

"Risk" is a widely used concept today. From a traditional (technological) perspective, risk determines anticipated loss and its chance of occurring, aiming to answer three questions: "What can happen? How likely is it to happen? If it does happen, what are the consequences?" (Aven, 2013:136).

Within this research, however, the aforementioned definition will be adopted but further expanded based on the thesis research goal to incorporate human (HAWs') risk perception. Slovic (1999:690) argues that what is risk is *subjective*, being "inseparable from the human's mind and culture", to determine how to cope with possible threats and unpredictability. Thus, risk will be understood with the inherent values HAWs have, basing it on their opinions.

Furthermore, the research will introduce different aspects of risk, adopting United Nations Office for Disaster Risk Reduction's (UNDRR) disaster risk terminology, where risk equals hazard, vulnerability, and exposure. "Hazard" is understood as a potential source of harm for people, "exposure" how one is exposed to a potential hazard, then risk and "vulnerability" as "conditions (…) which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards" (UNDRR, 2017:a,b,c).

Humanitarian Aid Worker

There is a significant discrepancy between researchers on "who count as HAW" as well as in naming them as a group using a variety of terms. These range between "humanitarian worker" (Bienczyk-Missala & Grzebyk, 2015), "aid worker" (Fast, 2007; Stoddard et al., 2021), "expatriates" (Ledder, 2019:1105), where some even interchange between them (e.g., Hoelscher et al, 2017:538 vs. 541; using both "humanitarian aid worker" and later "aid worker" or Brooks, 2015:2 vs. 3, using "aid worker" and later "humanitarian worker"). Moreover, not every researcher explains the choice for using one or the other. Others tend to avoid labelling them in one term together due to a commonly used confusing labelling of aid worker as a "field worker" (Roth, 2015:140), potentially excluding those working in the country but in the office only without physically "going to the field".

Roth (2015:141) stresses the changing nature of many humanitarian (aid) organisations; they are growing from a focus on emergency relief aid only to development activities (and vice versa), encompassing both *humanitarian aid* and *development aid.* The former is widely used for short-term aid aimed to alleviate suffering both during and after a disastrous event. The latter concentrates on the mitigation of long-term, systematic issues to tackle the root causes of those issues via the promotion of social, economic, political, or environmental development (Anera, 2019). Although there are vast differences in providing one or the other, many humanitarian organisations become multi-mandated. Thus, the boundaries between these workers are blurring as their work includes multiple parts, such as capacity-building, emergency relief (including health care), development, advocacy, peacebuilding, human rights promotion, etc. (Fast et al., 2013:224). This is also in line with Humanitarian, Development and Peace Nexus, a current direction of UN as well as other organizations, advocating that fulfilment of one is dependent on the others (UN, n.d.).

Hence, in this research, the author refers to the studied group commonly as "humanitarian aid workers" (HAWs). They can work within both humanitarian as well as development aid, stressing the common component of aid and the humanitarian referring to the humanitarian principles – humanity, neutrality, independence, and impartiality in aid provision – all these workers are committed to uphold (OCHA, 2010:1). The research then sets the boundary around HAWs based in the country[4] to enable relevant comparisons in terms of a similar context and work environment, which can influence their risk perception (Langenhove & Scaramagi, 2010:3-4; Metcalfe et al., 2011:2).

Risk Perception

As previously indicated, risk is inherently linked with people's (here HAWs') identification and assessment of any conceivable risky activity (Slovic, 1987:280). As Slovic (ibid) discusses, "the ability to sense and avoid harmful environmental conditions is necessary for the survival of all living organisms", as well as the power to react to or change the environment, which humans possess. However, as the way perceived risk is defined by humans, it is inherently

[4] Other HAWs' settings exist, e.g., those who work for humanitarian, development agencies in the country but remotely or come only for short-term missions. They will not be the focus of this research, but they should not be excluded when considering complete HAWs protection.

linked with the cognitive process and results in a subjective perception of danger and potential risk (Slovic et al., 2007:1334).

According to Raue and Scholl (2018), people then frequently use heuristics, mental shortcuts, to reach a decision under risk and uncertainty without the need to use all accessible information. This simplification can, however, lead to biases, standing at the core of individual risk perception (Slovic, 2007:82). Bias stems from human nature, as suggested above, further prominently including one's sensors (Johnson et al., 2009), as well as various, individual characteristics, including age, gender, race, nationality (Finucane et al., 2000), religion, worldviews (Slimak & Dietz, 2006), education level or experience (Wildavsky & Dake, 1990:47). On this basis, Kahan et al. (2007:467) defined *motivated cognition*, the need to determine who we are, our multiple identities and roles and to contest cultural norms to understand final risk definition as well as what influences it.

Additional influential categories within then represent values, norms, and beliefs within one's cultural context (Sjöberg et al., 2005) as well as the role of power – who has the power to define what is risk, or whose opinion is desired (ibid:602) and how risk is being presented (Kasperson et al., 1988:178). This also closely relates to risk communication, which can severely confirm or refute an opinion, further considering not only the risk information transmitted but the communication chain links. It ranges from the information source through intermediate transmitters to the receiver, all with the ability to alter the risk information (ibid:180).

3 Methodology

Before diving into the methodology, the utilized ontological and epistemological assumptions are defined. Creswell (2013:20) notes that ontology defines individual perception of reality, whereas epistemology describes how knowledge is created. From an ontological perspective, this thesis was approached with cautious realism, recognizing the existence of independent reality but with subjective interpretation (Blaikie, 2010:93). A constructionist view of the epistemology then determines that, although the science conceptualizes knowledge, the knowledge emerges from everyday interpretations of the world. Hence, it is a subject of society and scientists' views determining their representation of reality (ibid:95).

3.1 Research Strategy – Case Study Approach

The thesis uses an inductive exploratory strategy to answer "what" in the research question and to observe the associated patterns and their distribution within the safety and security of humanitarian aid workers (HAWs) in Sudan. (Blaike, 2010:83).

Choosing a case study approach further allows to create a temporal, spatial and group boundary around the studied phenomena, producing a contemporary[5] setting of Sudan and HAW as a studied group. This enables a study of the safety and security perception and looking for the aforementioned patterns and context-specific particularities, as well as thinking of codes and topics for phenomena analysis (Creswell, 2013:97-98). Although it allows for only limited generalization (Blaike, 2010:83), it permits to achieve analytic generalizations generating findings transferable to countries sharing akin traits and challenges as Sudan (Yin, 2003:10, Maxwell, 2012:246) often associated with HAWs' work. Furthermore, as it requires multiple sources of data for a good understanding of the studied phenomena (Creswell, 2013:197), the following chapter specifies choices for the methods and data collection.

3.2 Data Collection

To put humans (HAWs) at the centre of the study and focus on the exploration of their perception, qualitative data were collected (Duskova & Safarikova, 2015:6) with in-depth, semi-structured interviews as the main source. In-depth interviews have been selected as they permit to learn the most about the perspectives of the HAWs on safety and security (ibid:52, Blaikie, 2010:207). They allow for interviewees' open and reflective thoughts sharing, including their own interpretation of the open-ended questions (Scheibelhofer, 2008:405-406; Creswell, 2013:164; Magnusson & Marecek, 2015:62).

An interview protocol was designed beforehand, in line with the qualitative data collection method (Duskova & Safarikova, 2015:54-55). The conscious choice of the semi-structured guideline was made based on the thesis purpose, time constraints and researcher's role and biases, as with a fully structured guideline, important data and patterns could be missed. The unstructured guideline could then be opposed by time-consuming constraints and "feeling lost in a sea of topics" for both interviewees and the researcher (ibid:52). The questions asked within (see *Appendix A*) were based on reviewing relevant literature conducted beforehand, revolving around 3 main themes: (1) *effects of the context*, going from a general perception of

[5] Respective to the data collection time, March/April 2022

safety and security risks in the country to the personal ones (OCHA, 2009:7; Metcalfe et al., 2011; Fast, 2007:131); (2) *individual risk perception*, considering HAW's perception to understanding risk and their subsequent protection, including their individual characteristics (Slovic, 1987; Williams, 2008:3; Fast & Wiest, 2007; Metcalfe et al., 2011) and perceived role of HAW and values; and finally (3) *role of the organization,* including *available or missing measures to protect HAWs*[6] with probes to compliance or non-compliance with the measures and their assessment. (Fast, 2010; Metcalfe et al., 2011; Bienczyk-Missala & Grzebyk, 2015:224; Brooks, 2015).

Using open-ended questions, especially at the beginning: "How do you perceive general safety and security in Sudan"? and ending with: "Do you have any last comments on the safety and security of humanitarian workers in Sudan?" enabled a rich talk, sharing of the participant's experiences, memories, emotions, reflections and opinions (Magnusson & Marecek, 2015:47). These were crucial to define and understand own risk perception within the research question (Slovic et al., 2007:1334; Fast, 2007:X).

The participants were contacted either via email or by phone (WhatsApp). All interviews were conducted one-on-one and took place online, in the English language, via various videoconferencing platforms with audio recordings for subsequent transcription. These were supplemented by memo notes promoting reflexivity on the topic. The average time of the interview was 1h 16min; 4 interviews were just under 1h (shortest one, due to limited internet connectivity issue, lasted 37min), 19 interviews lasted between 1-2h and 3 interviews were more than 2h long (longest one lasting 2.5h).

Before the interview, the interviewees received an *Invitation to Participate* (see *Appendix B*), including participant information, an explanation of the thesis scope and assurance of confidentiality. Remaining anonymous turned out to be crucial for many, stemming from a possible fear to be tracked, especially concerning sensitive questions, such as whether they uphold the organizational or other protection measures in place.

3.3 Data Selection

The criteria for choosing a HAW were based predominantly on whether they currently worked as HAW in Sudan (regardless of project, or topic) and their English-speaking capacity. 70 potential candidates were contacted, of which 26 were interviewed on the topic throughout March/April 2022. Choosing HAWs started with *typical sampling* – representatives of average, or who are typical to use for the study, which fits well within the inductive case study, as the first main criterion was only HAWs contemporary working in Sudan (Creswell, 2013:148;158). Here, it started with contacts I had from Sudan, and later via the LinkedIn platform, enabling the choosing of participants based on a displayed profile. Further, the *snowballing* method of sampling was applied to identify cases of interested or interviewed HAWs knowing other possible participants (ibid). In the mid-late stages, the approach of *maximum variation* for sampling was adopted to enlarge other possible distinct variations of individuals, their experience or location within Sudan (ibid:156-157). In total, 58% (15) of participants were

[6] This aspect has been originally included to investigate possible discrepancies between the protection measures implemented and HAWs' risk perception and measure their compliance; considering the human's ability to change their environment and behave within, possibly creating, enhancing, or reducing risks (Slovic, 1987:280). However, it was further omitted to bring stronger data on risk perception, seemingly more understudied.

included via typical and maximal variation sampling and the remaining 42% (11) via snowballing. As the case-study approach should be triangulated to reach a "valid" and "objective" study of the phenomena, the variability of different individuals in the collection sample and their data comparison was conducted (Duskova & Safarikova, 2015:36). This was further supported by prior literature scoping (Blaikie, 2010:189) (see Chapter 2).

The primary sample variation ranged from age, sex, number of years working as a HAW in general and in Sudan, states, or regions of work in Sudan as HAW (past and present), where the HAW is currently located, and for which organization the HAW currently works for (or worked for in the past) (see *Appendix A*). The final sample of the 26 interviewees is presented in *Table 1*. To preserve their anonymity, their name and age are not included in *Table 1*. 7 of them were between 20-29 years old, 5 were between 30-39 years, 12 were between 40-49 years and 2 were between 50-59 years of age. The statistics display a decent variability of the studied sample, with the lowest variability (considering single category without comparison) in LNGO HAWs, HAWs with more than 16 years of experience and a number of international HAWs. The last, however, can also be a strength, as researchers suggest local HAWs are considered often more at-risk (Stoddard et al., 2011; Wille & Fast 2013; Scott, 2021:3).

Table 1: Interviewees' Sample Statistics

SAMPLE STATISTICS						Y. OF EXPERIENCE AS HAW, TOTAL				HAW'S LOCATION[7]		
SEX	*TOTAL*	NATIONALITY	*TOTAL*	ORG. TYPE	*TOTAL*	1-5	6-10	11-15	16-20+	EAST	WEST	KRT
M	15	Sudanese	12	UN	5	1	2	2	0	3 G	1 SD 1 WK	0
				INGO	6	2	1	2	1	1 G 1 K	2 SD 1 SK	1
				LNGO	1	0	1	0	0	1 G	0	0
		International	3	UN	1	0	1	0	0	1 K	0	0
				INGO	1	0	1	0	0	0	1 CD	0
				LNGO	1	0	0	1	0	0	1 CD	0
F	11	Sudanese	7	UN	3	1	0	1	1	0	1 ND	2
				INGO	2	0	2	0	0	2 G	0	0
				LNGO	2	2	0	0	0	0	0	2
		International	4	UN	0	0	0	0	0	0	0	0
				INGO	4	2	0	0	2	0	0	4
TOTAL			26	LNGO	0	0	0	0	0	0	0	0
					TOTAL	8	8	6	4	9	8	9

[7] The various states are abbreviated in the table. In the East, it is G – Gedaref, K – Kassala. In the West SD – South Darfur, ND – North Darfur, CD – Central Darfur, WK – West Kordofan and SK – South Kordofan. See *Figure 2* for their location.

Figure 2: States of Sudan. Source: Mappr.co (n.d.)

3.4 Data Analysis

The initial transcript of interviews was generated using otter.ai. They were then manually corrected, allowing first deep familiarity with the data and preparation for coding, needed to "summarize and account for each piece of data" (Charmaz, 2006:43).

First, an *initial*, or open *coding* style was applied. This was to let the codes emerge and provide their tentative form (Blair, 2007:17; Saldaña, 2013:101) seeking all different theoretical possibilities in the data and later grouping them into categories and sub-categories (Williams & Moser, 2019:49). Oftentimes, *In Vivo* coding was used within initial coding, using the participant's own words to not only prevent interpretation mistakes but also to capture the participant's language, providing deeper meanings or experiences (Charmaz, 2006:55). This was crucial to examine primary feelings about HAWs' risk perception, e.g., what are the risks, which they named first, most, or not at all, how they feel or talk about them, etc.

Subsequently, going through the data for the second time was to refine the open coding and move to *theoretical* coding to find patterns, links, and interconnectivity of different categories, including the motivation behind the perception (ibid:60). Some were already suggested through the open, *in-vivo* coding, as *in-vivo* codes "tend to be the behaviours or processes which explain how the basic problem is resolved or processed (…) which can imply theoretical codes" (Glaser, 1978:70 *in* Hernandez, 2009). The process of coding ceased when no new categories emerged to build theoretical categories (Charmaz, 2006:113).

Although attempts to use the NVivo program to code were made, the feeling of "being too far" from the information made finding patterns impossible. Hence, in-hand coding was done using

paper-tablet to avoid printing and Excel was used to create categorized groups of data and their comparison.

Based on the coding method, the overall coding structure stemmed three main concepts – what risks exist, what influences this perception and how it translates into HAW's behaviour and/or protection measure seeking. However, based on the scope of the research and amount of data collected, the last set of data that includes human behaviour, protection measures and factors influencing only these were subsequently excluded, with preserved data on the role of organizations in risk perception. Each concept then contained sub-codes; in the first category, different risks were named and later formed under the *safety* and *security* umbrella. The second category revealed what previous literature scoping suggested, influences of various factors on what risk is, later structured within *individual characteristics* and further *external factors*. The risk key categories are captured in *Table 2* and factors in *Figure 4*, further discussed in Chapter 4, Results.

3.5 Limitations

The results of this study should be viewed primarily as those of who participated in the interviews. The focus of this study is exploratory and suggestive, discovering the patterns in a variety of HAWs in Sudan. It aims to identify areas and priorities for future research rather than drawing absolute conclusions about perceptions of security threats and measures for HAWs in general (Fast & Wiest, 2007:7). This poses a limitation to full *data reliability and validity*, the possibility of the study to give the same results if measured again (Disman, 2008:62), since the captured data are temporary and spatially bound to Sudan in March/April 2022 (Creswell, 2013:97), and multiple factors could vary future data collection. An example includes current events, notably the at-war state lasting in the country from 15 April 2023 until today, as well as the evolvement of HAWs themselves and other factors which can cause changes within HAWs' safety and security perception. Nonetheless, the data can further inform other similar contexts from the perspective of the main research, but attention must be paid to differences in all aspects of the context and study sample (Blaike, 2010:188).

Blair (2015:15) prompts to adopt a "participatory consciousness recognising that they (research and researcher) are not separate from the world in which the data are produced". As I have had the honour to work within Sudan as a HAW for almost 2 years myself, the researched topic is particularly close to my heart and my mind and can stem experiential *bias* (Fast, 2007:X). Thus, to consciously mitigate it steering the research, within data collection, regular notetaking, re-reading, and re-listening of the interviews conducted throughout the data collection focusing on how I ask questions was done (see *Appendix A*). Nonetheless, I recognize it is impossible to remain completely "value-neutral" (Becker, 2014:126).

Furthermore, as humans are at the centre of the study, their current state of mind and feelings could have influenced their responses, and it is difficult to measure "trust" between interviewer-interviewee. To mitigate this, an attempt was made to cross-check by building "friendly and non-threatening questions" (Yin, 2003:90).

The *difference in language* between the interviewer-interviewee (English, Arabic, or other mother tongues of both) had an impact on both possible inclusion of HAW in the study as well

as the formulation of both the questions and answers during interviews which could potentially lead to data misinterpretation. Occasionally, it was encouraged when the interviewee was unable to find a word in English, the word or expression was noted in Arabic and later translated via an online dictionary, cross-checked by a native Arabic speaker, to preserve its original meaning. Note that terms such as "safety" and "security" were probed, however, their meaning within the interviews was purposefully not defined beforehand to let the participants use them freely, including interchangeable variations of the terms[8] "risk", "hazard", "danger", "threat" or "problem/issue" to capture all their primary thoughts and feelings. This was further necessary, as the interviewer-interviewee languages can differ in their grammatical structures and vocabularies. Thus, the usage of these words gives value to the variability of usage within data collection (Boholm, 2016:60).

Finally, a constraint was not being able to collect data in person, restricted by Lund University based on the Ministry of Foreigner Affairs' "advice against all travels" to almost all parts of Sudan in 2022 (Regeringskansliet, n.d.). *Limited internet connections* then posed significant challenges for conducting interviews causing many disconnections and difficulties to understand the answers. Thus, offers to reschedule, turn off the camera or split the interviews were made and often utilized to help mitigate the issue.

[8] Although various researchers differentiate between these terms (e.g., Cohrssen & Covello, 1989; Kaplan & Garrick, 1981; Ale, 2009), the usage of terms is unified for this thesis as per Chapter 2 and within the results (see Chapter 4).

4. Results

The following chapter presents the key findings from the interviews. To understand *what factors influence humanitarian aid worker's (HAW's) risk perception in Sudan*, the results define what HAWs in Sudan perceive as risks, how they relate to safety and security, and finally, what factors influence their risk perception. To specify which interviewee brought this information, a set number of interview (1-26) is used. Based on the data analysis, further personal characteristics are specified for those HAWs who displayed relevant comparisons.

4.1 Types of Risks in Sudan

HAWs defined a variety of risks (their types), including natural and human-induced hazards, physical and mental health risks, car accidents and thefts, corresponding to what concerns their *safety*; and protests, tribal conflicts, carjackings, robbery, kidnapping, landmines, physical and verbal harassment, rape, and cyber-risk as what concerns their *security* (see Chapter 2 – Conceptual Framework*)*. These were further categorized based on the type of violence they collectively represent (see *Table 2)*. According to HAWs, specific forms and sources (hazards) of these risks exist in Sudan, further described below. As these include aspects and perceived likelihood of an event that can bring harm, vulnerability, and exposure, they are designated as risks.

Table 2: Risks in Sudan defined by HAWs, March/April 2022

Risk Category		Risk Types	Form[9]
Safety		Natural & Human-induced hazards	*Floods, Drought, Hubbub, Heatwaves, Pollution*
		Physical health risks	*Diseases* *Malaria, Dengue, Kala'zar, Hepatitis C, E, Diarrhoea, COVID-19, sinusitis, typhus, cholera, chikungunya, diabetes*
		Mental health risks	*Stress, Anxiety, Eating problems, Loneliness, PTSD*
		Car accidents	
		Theft	
	Type of Violence		
Security	Physical Violence	Protests	*Torture Beating Stabbing Shooting Killing*
		Tribal conflicts	
		Carjacking	
		Robbery	
		Kidnapping	
		Landmines	
	Sexual Violence	Physical Harassment	
		Rape	
	Verbal Abuse	Verbal Harassment	
	Cyber Violence	Cyber-risk	

[9] *Form* used as a *particular way in which the risk exists or further manifests itself.*

Overall, HAWs were inclined to focus on security risks rather than safety ones. Within the safety risk groups, notably the natural and human-induced hazards, physical and mental health risks, ended up being probed many times (if not self-mentioned) to enable their comparison among HAWs. Compared to these which did not have a clear ranking, car accidents and thefts were perceived as key risks by 9 HAWs (1,3,7,8,9,10,13,24,16). Despite theft[10] being considered a safety risk, HAWs did not necessarily distinguish between thefts and robberies.

Although most of these risks were discussed separately, 3 HAWs described natural hazards as a source of further risk, stating: a) floods and drought contributed to tribal conflicts, making communities compete over scarce natural resources, exposing the HAW through their work when providing humanitarian resources or development activities in the area (5); b) hubbub[11] created chaotic conditions enabling opportunists to carjack and rob HAWs when returning from the field (15) or caused difficulties breathing and chronic sinusitis (6).

Within the security risk category, 14 HAWs designated robbery and carjacking as the no. 1 risk (1,2,6,7,8,9,11,12,14,17,18,20,21,25). HAWs' risk perception then varied notably on protests, rape, physical and verbal harassment. Additionally, it was observed that, just because HAWs defined these as potential risks (see *Table 2*), it does not mean they always feared them or saw them as a risk for themselves. To better understand why, research suggested various factors influencing HAWs' risk perception.

4.2 Factors Influencing Risk Perception

The study showed there are different factors influencing HAWs' risk perception, representing an interplay between Individual factors (further defined as *characteristics* to specify HAW oneself) and External factors in defining what risk is – *Figure 3.*

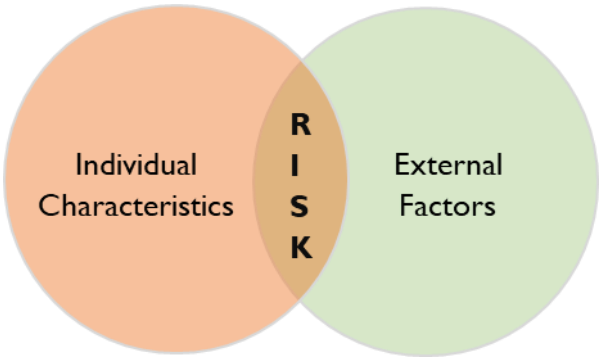

Figure 3: Intersecting factors forming HAWs' risk perception, 2022

Based on the analysis of the 26 HAWs' interviews, these represent a set of 8 individual characteristics and 5 external factors, ranging from *age, sex, race and ethnicity, nationality, religion, understanding of risk, knowledge,* to *values and interests* within the individual characteristics, and the influence of *country context* and its dynamics, *place and time*, *HAWs organization* and *risk information* as part of External factors. As the individual characteristics also intersect, this reality is suggested in *Figure 4.*

[10] *Theft* means "take or steal someone else's property without their consent" whereas *robbery* means "whilst using force or threats of force." (SCLG, 2022).
[11] Local name for sand/dust storm

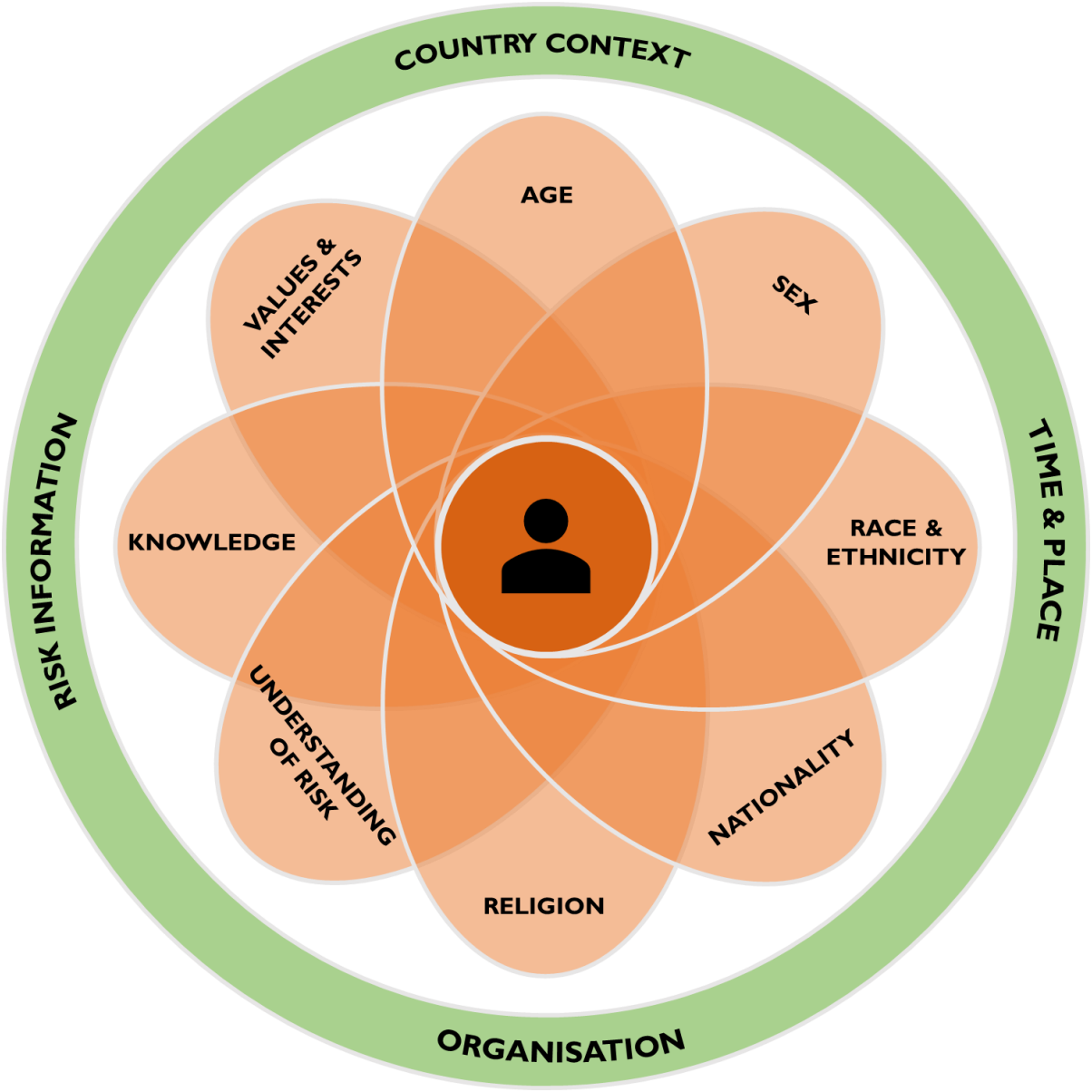

Figure 4: Individual characteristics and external factors in HAWs' risk perception, Sudan 2022

4.2.1 Individual Characteristics

Age

The factor of age seemed to directly influence HAWs' risk perception both considering oneself or others and intersecting with other characteristics and external factors. 5 HAWs reported young people (notably Sudanese) were most at-risk of violence (both during or outside of protests, both male and female) from different military personnel or the police. These link them with anti-state tendencies or activities, or directly with Resistance Committee based on their age (9,13,14,11,26). This was described by both 2 young HAWs (between 25-30 years; 9,11) as well as 3 older HAWs (above 40; 13,14,26) who further reported having relatives joining the protests.

"Whenever police see someone young, they immediately think that he or she's a protester. They'll just snatch him immediately." (9)

Being or feeling older then seemed to play a role in perceiving rape or sexual harassment less as a risk, reported by a Sudanese female HAW, 47 years old:

"...like now, I'm older. So probably people are no longer interested (laughter)." (11).

Sex

HAWs themselves distinguished only between *male* and *female* and described different risks (exposure) based on sex, linking male HAWs predominantly with the risk of protests and its forms of violence (see *Table 2*) and female HAWs being at-risk of verbal and physical harassment and rape. This was reported by 6 different Sudanese and international male HAWs (2,3,4,5,22,24). The perception of harassment and rape as the main risk was confirmed by 5 different female HAWs (8,9,10,12,25). For 4 of them it intersects with being a HAW, as based on different traditional societal and cultural norms, not everyone or every community sees it permissible for women to work, and they feel at-risk of violence (8,9,10,12). This was further extended by 3 Sudanese HAWs, 2 males, 1 female, on the traditional perception of women as "weak" or "putting up less of a fight", hence, designating a higher risk of robbery for females (3,5,10).

"Women are more targeted because the perception of a woman is that she is weak (...), every day you hear at least 3 women have been robbed (...). Men have more resistance, or some of them carry their own guns with them. So, their situation is better than the one of a woman." (10)

Moreover, 1 international female HAW discussed that being a woman is a global vulnerability, not exceptional to Sudanese context but personally not feeling at-risk, recognizing a double standard for international and Sudanese women in terms of local cultural compliance (6).

However, 2 female HAWs (both around 50s, with significant HAW experience – 20+ years) reported not feeling vulnerable based on their sex (11,21). 1 female HAW felt at-risk of harassment, notably from police or military officers but not of rape as she links these risks with remote areas and feels protected living in a city (13). Only 2 HAWs, both male, mentioned men and women face the same risks, feeling any HAW can be protected as long as they follow protection measures in place (16,19).

Race and Ethnicity

16 different HAWs mentioned connections between race, ethnicity, and risk perception, describing examples of physical appearance – skin colour, facial features (race) and cultural and social characteristics – or style of language, accent, style of dresses, and name of a person (ethnicity).

Most repeated was the role of tribal affiliation (including examples of both race and ethnicity) when it came to Sudanese HAWs. 11 HAWs (all Sudanese except one from a neighbouring country) reported the society generally distinguishes between "light-skinned" Arabs and "dark-skinned" Africans, which have uneven power dynamics. As multiple tribes are in constant conflict with each other, various HAWs reported being at-risk or previously experienced physical and verbal harassment (including hate speech), abuse, discrimination, but also robbery, carjacking or even killing due to their tribal origin. This was predominantly in Western states, the Darfur area, where these conflicts are most prominent (4,5,9,10,12,13,14,15,21,23,24).

These HAWs were either based in the area or had previous experience in it. 1 Sudanese HAW shared his name is linked with a village of Al-Bashir's origin, categorizing him as a "spy" or "enemy" by the communities and putting him at-risk of kidnapping or killing if not addressed when working with communities whose family members died during the fight with Al-Bashir (5).

"I have a colleague, he's from a certain tribe. It's an Arabic tribe and he's not allowed to go to South Kordofan and these areas because the tribe that's living there are against his tribe. So, maybe he would get killed if he went there." (10)

3 HAWs then discussed the influence of their language and/or accent. 2 reported their tribal language uses different phrases than the communities they work in, which can insult if not aware of it and put them at-risk of violence from the community (13,14). 1 expressed speaking a different form of Arabic (from another Arabic country) makes her feel exposed to harassment (8).

4 HAWs (3 of them internationals) then described that looking "foreign" suggests looking "wealthy", linked in particular to white or Western-looking HAWs, feeling at higher risk of robbery (1,6,15,24). However, 2 other HAWs reported that, although they are internationals, they feel more vulnerable to any potential risk being from neighbouring countries of Sudan; they can be, based on their skin colour, mistakenly be designated as Sudanese. Some of them already experienced in Darfur part of the aforementioned tribal prejudice starting with verbal harassment but leading to a potential risk of killing (8,24).

Nationality

Based on the data collected, differences between international and Sudanese HAWs were observed.

4 HAWs discussed different risk exposure depending on being Sudanese or international. They (both Sudanese and international) predominantly agreed on international HAWs facing more risk of robbery, carjacking or kidnapping based on the general perception of them being wealthy (15,24) or harassment as they "stand out" (11). This was disputed by a Sudanese HAW (10) saying Sudanese face more harassment due to the aforementioned complicated tribal affiliation.

6 HAWs then expressed internationals are more protected, being exempt from tribal affiliation pressure. 2 Sudanese HAWs perceived them as "neutral" (5,14), 1, Sudanese-American, reported having a Western (EU/US) passport as protection (12), 2 Sudanese stated they have more risk knowledge and training (18,20) and 1 Sudanese mentioned that organization puts out more protection measures if it has international HAWs (10). However, 1 Sudanese HAW pointed to internationals' missing knowledge of local context, coming insufficiently briefed and mostly on short-term missions, making them risk-vulnerable (19).

2 Sudanese HAWs then reported they face more social or cultural pressure to "fit in" within the communities and feel at-risk of conflict or violence from them if they do not: a) eat or drink with them but potentially risking diseases due to community's poor hygiene (24, international-neighbouring country to Sudan, HAW), or b) comply with traditional ways to dress, interlinking her Sudanese nationality with her position as a female HAW (25).

"At the end of the day, I am Sudanese, so I can't come here and just dress the way I want to dress and do whatever I want to do, live like a foreigner. Because I'm not. So, (…) I will be more shamed for it because I'm Sudanese than if I was a foreigner. If you come in here and wear a scarf and your pants, nobody's gonna say anything, because you're a foreigner, you know? But if I'm going to do it, like, you know, to them, that's going to be a big shock. Like, how can she do this? You know, it's not right, and these kinds of things." (25)

9 Sudanese interviewees further expressed Sudanese HAWs are more at risk. 4 of them linked this to a "desire" or "obligation" (*interest*) to join the ongoing protests to fight for democracy in their country but risking exposure to its violence, e.g., being beaten up or arrested under false accusations by the police (2,3,4,5,26). 2 of these were reluctant to admit their participation (but suggested they do) working for an organization that forbids HAWs protest participation.

"As Sudanese (HAW), if you go to work, they say you are not considering yourself as national (…) not considering their struggle if you are not participating in this kind of change of regime, the protests, and simply going to collect your salary at the end of the month (…). So, you should go to them. (...) But there is also the organization's advisory to not go out, to not take the risk, to stay home. So, you face a dilemma. Do you practice (fight for) your own rights, change in the country or do you respect the regulations? This is something Sudanese people are facing nowadays." (3).

Religion

Direct link between religion and risk perception was mentioned only by 4 HAWs. 3 of them associated it with local context; 1) When working with incoming immigrants or refugees, feeling at-risk of conflict violence between them and migrants who feel "religion oppressed" when HAWs explain Sudanese culture to them (3), 2) Perception of women (overlap with *sex*) in Islamic culture and facing verbal harassment if exempting from compliance of specific dress-code (12, 22). Only 1 international HAW (neighbouring country to Sudan) reported that as a Christian, he feels at-risk of kidnapping and further feeling insecure and lonely, which is affecting his mental health, as he cannot practice his faith publicly where he is based (24).

"We have one religion that is dominant in the area (Islam). And the community doesn't allow another religion established here. So, when you are found fellowshipping, having interaction in a different religion, you become a target. I'm Christian, so it is a big risk if I get involved with other people, or they see me closely with people from the indigenous religion. They feel that maybe, I am having a different religion where I come from. So, they're insecure. And I also fear because if later they engage, I can get kidnapped because of that." (24)

Understanding of Risk

3 most prominent themes emerged influencing HAWs' risk perception – perceived *severity or outcome of risks, felt control over* them and *sensory influence or reliance* when evaluating risks.

5 HAWs mentioned feeling threatened by certain risks more seemingly if they had them linked with a high chance of death; specifically protest violence such as beating, torture or arrests and rape (9,12), landmines in areas where the HAW works (19) or car accidents (7,9,11,13).

HAWs further discussed felt control over different risks. If they did not feel in control, the risk seemed to have a higher value for them, further influencing their protection measures taking. This was particularly prominent for 3 international HAWs fearing car accidents (1,7,11), 1 international and 1 Sudanese feared carjackings, attacks and military movements linked with severe violence towards civilians (10,11). Even floods, designated by an international HAW as the state's responsibility that is not being taken (24). 2 HAWs then mentioned gaining control over the risk when they chose to be exposed to it on their own terms, feeling in control and fear the situation less (3,22) and 2 others stated having control over the risk if protection measures from the organization are in place (7,8).

Finally, the most prominent seemed HAWs reliance on sensors when evaluating their risks. Not *hearing* or *seeing* potential risk was particularly notable for 2 HAWs living in Eastern states when considering car accidents not being reported or experienced (2,3). Furthermore, as mentioned previously, risks of diseases were probed for, and when discussed, 5 HAWs replied being currently in the dry season and linking them with the rainy season, they do not think about them or consider them a risk (4,5,7,9,20). The reliance on oneself seemed stronger, in some cases, more likely than on the organization:

"While I'm assessing the risk myself, I will not listen to the organization's advisory. Because I saw the risk and I'll have to take my own measures to avoid it." (3)

5 HAWs pointed out their individual risk perception was key when evaluating risk, relying on their own "common sense" (3,6,7,8,11).

Knowledge

25 out of 26 HAWs suggested that knowledge, either in form of *experience* (experiential – own experience, or shared by others – testimonial), *education*, or a *combination of both,* influenced their risk perception.

11 HAWs reported various security and/or safety courses helped them to feel more in control, building their confidence and preparedness when knowing possible risks and their consequences (2,4,7,12,13,15,20,22,24,25,26). 1 of these HAWs suggested numerous safety risks in the office, later stating she studied facilities management which links to it (25). Another one stated fear of cyber-risk for all HAWs, possibly recognizing it as a risk due to reportedly recently finished security training course provided by his organization (4).

Having own experience from different contexts (internationally, or within Sudan) reported by 5 HAWs (1,5,6,7,26) or organizations, stated by 3 HAWs (4,15,24), seemed to shape and change HAWs' safety and security risk perception. This was regarding the context and notable in downplaying the risks. For example, 2 HAWs having previous experience with heavy traffic environment and common car accidents reported not seeing it as a particular risk in Sudan (6,26). Same with diseases, where 1 experienced malaria (11), 1 water-borne diseases (7). This also seemed applicable when the experience was shared with HAWs, either by their colleagues, organization, or family member. However, within, a pattern of perceiving an event as (higher) risk seemed more common if experienced by others, such as a robbery or carjacking experienced by a colleague, or family member. 4 HAWs reported fearing it too and taking more protection measures (5,7,12,19).

"When that happened to my boss, I thought okay, I cannot be safe in my own apartment. (But) what can you do? (laughter). Well, hide the money, okay, and the laptops and phones etc. But it's not comfortable." (7)

Although having direct experience with a certain risk left seemingly 12 HAWs feeling more safe or secure (4,5,7,11,12,13,14,18,21,22,24) – particularly enhanced if the HAW had previous military or security guard training (18,22) – 2 HAWs reported that previous encounters with a risk made them more afraid for their safety and security afterwards; 1 reported PTSD from police arrest due to protests (9); 1 reported fear of attacks leading to multiple deaths within conflicts in Darfur where he is based (20). Different reality notably stated 2 HAWs based in the Eastern states of Sudan, where having no experience with risks in the place seemed to have made them feel comfortable, safe (5,16).

Values and Interests

HAWs further discussed how they perceive their work role and what they valued or were interested in (also mentioned in *nationality*). Although certain connections to risk perception were outlined, these predominantly played a role in subsequent behaviour of HAWs, which will be briefly suggested but not fully investigated, minding the scope of this thesis.

A key value for HAWs was their job. 7 different HAWs stated their values, perceived themselves as a "supporter", "resolver of issues", feeling people need their help (1,10,19), their job giving them joy or "adrenaline rush" (1,9,10,14), but also providing food on the table to support their family (14), which can be above their own needs (5,19). Having family, children in particular, seemed to also lead both male and female HAWs re-evaluate risks more often, be more careful or to seek more protection measures (5,11,14,21,26).

These values then seemed to play a further role in weighing the risks vs. exposing themselves to them. 2 groups of HAWs emerged, both sharing the value to serve people. However, where 2 reported putting their safety and security first to enable more lives saved (19,20), 9 diminished the risks present for them in Sudan based on their value to serve people/community, leading them more prone to voluntary risk-taking (3,6,8,9,10,12,22,24,25). 6 of the 9 were women and 4 were internationals but their experience and age varied significantly.

Nevertheless, 7 HAWs agreed risk exposure is a necessary part of their job, which they value above it. The risks were based on the context they work in and think they cannot be fully eradicated (1,3,6,10,11,13,24).

4.2.2 External Factors

Apart from the individual characteristics, influencing both general and personal risk perceptions as suggested above, HAWs further delineated a set of external factors influencing them. These ranged from various aspects of the *context* they work in, including *time and place*, the role of *HAW's organization* and existence and flow of *risk information.*

Context

Within the country's context, Sudan's economic, political, social, and cultural situation, as well as its environment, level of development and history all influence how a HAW perceives and evaluates their risks.

The political situation in Sudan was generally described by all interviewed HAWs as "*unstable"*, "*dynamic"*, "*constantly evolving"*, and "*volatile"*, directly influencing the economic and security situation, making the country unsafe. From all their statements emerged multiple recent political events that changed their at-the-time risk perception. Starting from Bashir's governance, 7 HAWs mentioned its influence on current fighting in Darfur and tribal power distribution (5,7,10,13,14,21,24), 3 categorizations of HAWs as "spies" (5,10,14) which both contributed to feelings or current experiences of insecurity. Furthermore, the effects of at-the-time present events – ranging from the 2019 revolution, establishment of the transitional government, and the October 2021 military coup leading to the current tug-of-war (protests) between civilians (Resistance Committee) and the government, seemed imminent for HAWs' re-evaluation of risks. Predominantly, the last military coup seemed to have the most contemporary consequences at-the-time of the interviews, left 12 HAWs feeling "*unsafe"*, "*not in control"*, and "*powerless"* particularly due to its unpredictability (2,8,10,11,12,13,17,20,23,24,25,26). Furthermore, it made 14 HAWs distrust the military or police apparatus, described as "*unpredictable"* or linked with thefts, robberies, or defined as a source of physical violence (2,5,9,10,11,12,13,14,19,21,22,24,25,26). Unsurprisingly, in particular, in the case of Sudanese HAWs, current cases of protests and their adjacent violence became personal:

"We are in a war right now. But it's a one-sided war. We do not have any guns. We're not trying to kill or do anything but at the same time we've been treated like that." (12)

Furthermore, according to HAWs, Sudan's economy was experiencing rapidly increasing inflation devaluating local currency (Sudanese pounds). This reality paired with HAWs' better economic situation – having better resources, assets and being paid in US dollars – all seemingly contributed to 14 HAWs perceiving thefts, robberies and carjackings as key risks for HAWs in Sudan (1,3,4,8,10,12,14,15,17,19,22,23,24,25).

"The economic situation is deteriorated a lot of people lost their means of life and they are starting to steal." (15)

Regarding the social and cultural situation, the influence of local customs and culture seemed to directly link with the aforementioned tribal division putting 2 HAWs at-risk depending on both locality and community tribe type vs. their own (5,24). Not upholding them was equalled to perceived risks of violence from the community (10,14,17) or even killing by 3 HAWs:

"They can kill you if they feel that you are not respectful of their traditions." (5)

Notably, the aforementioned role of women in society suggested female HAWs (and more so Sudanese) often fear both physical and verbal harassment or rape if not complying with local community traditions, particularly with dress code, wearing long-sleeves, scarf, and skirts in the field. This was reported by 5 female HAWs, 1 Sudanese man, and 2 international men (9,10,11,12,13,5,22,24) (see *sex* category in the previous chapter). A complementary factor to feeling safer or more vulnerable then seemed to pose the knowledge of the Arabic language (or further local tribal language for Sudanese HAWs), stated by 2 HAWs (15,22).

Finally, Sudan's environment and level of development, notably the perceived insufficient infrastructure and services, seemed to concern HAWs. Particularly, the poor state of road infrastructure made 5 HAWs perceive a higher likelihood of car accidents (4,5,10,15,17)

together with the non-compliance of local drivers with traffic regulations and poor car maintenance for 7 others (1,5,7,8,11,19,24). Additionally, the poor state of health infrastructure and services reportedly played a role for 5 HAWs in increased worry for their well-being or of diseases (5,9,11,18,26) or car accidents for 2 (7,11).

Time and Place

Multiple HAWs linked different year, week, or day periods to either specific risks or feeling more or less vulnerable. Most prominent was 8x mentioned higher risk exposure, as well as its frequency or likelihood within the rainy season, most commonly linked with higher fear or seeking of protective measures from various diseases, including waterborne diseases, flus, malaria, dengue, and diarrhoea (2,4,9,12,14,18,19,23). Certain statements further might have suggested a sensory bias, as none of the HAWs mentioned diseases as a risk during the whole interview without a direct probe, being out of rainy season: *"No, diseases are not a problem (risk) because they are not taking place now, such as cholera and waterborne diseases"* (4). Similar seemed the case of natural hazards, reported by 2 (7,18).

10 HAWs further considered nighttime as a key time for risk occurrence and vulnerability, namely thefts and robberies when most perpetrators try their chances (2,4,5,6,8,11,12,14,17,23) and there are no people around to help you (6,14). Similar was reported by 3 HAWs about weekly markets, connected with a higher likelihood of car accidents (2) or reportedly used as "a cover-up" for robberies (3,5).

Additionally, HAWs linked various areas with different risk perceptions, dividing Sudan into 3 key areas of risk comparison: West (including all 5 Darfur and 3 Kordofan states), East (discussing mostly Blue Nile, Gedaref, Kassala and Red Sea states – see *Figure 2*) and Khartoum, the capital.

Generally, the western states were linked by 11 HAWs with more risks, specifically more violent risks compared to the rest of the country, linked to many ongoing conflicts and military fractions, including robberies, carjackings, kidnappings, killings (4,9,10,13,14,16,17,22,24,25) or landmines (20). However, certain HAWs also pointed to risk dynamics and risk occurrence differences within these states, depending on tribal fraction – if the area was more tribe mixes, 2 HAWs felt more secure, stating it is harder for tribes to usurp more power (19,24).

Eastern states were perceived as safe by 3 (1,4,6) or safer by 5 HAWs (5,13,12,15,20) based on less violent crimes (predominantly thefts, robberies, or sporadic tribal conflicts). Specific area then represented Khartoum mainly liked with ongoing protests violence by 9 HAWs (4,12,15,16,17,18,19,21,22). Based on the information collected, both views seemed to be coming from HAWs either based in the area or having previous experience with it (experiential or testimonial, from their colleagues or family).

8 HAWs then felt most exposed when travelling to the field (3,4,5,15,16,21,23,24), compared to being in the office where 3 did not see any risks (9,14,18).

Furthermore, 3 HAWs reported feeling safer in the cities than in villages (6,13,17). However, 5 HAWs reported not considering them as safe hubs anymore but also as areas of risk based on militia's movement committing various crimes (2,19,20,21,24). Lastly, areas around borders were perceived as insecure, notably those between Gedaref and Ethiopia (East) reported by 4

HAWs (2,10,13,15) or bordering with Chad or CAR by 3 (I5,17,24). These were linked with tribal conflicts and high movement of criminal rebel groups.

Organization

When discussing HAW's organization, interviewees discussed different protection measures in place. 1 HAW pointed out that generally, the protection measures within the organization are higher if it has international staff, feeling Sudanese HAWs are not cared for (10).

For the risk perception, however, 4 HAWs pointed towards the type and nature of their work, feeling more risk exposed and worried about robberies or carjacking (15,16,17,25) when moving between the states.

All HAWs within the research were program staff. Various work focuses seemed to influence their risk perception, particularly observed when working within health, emergency, or migration programs. Within, 8 HAWs reported feeling higher risk exposure to various diseases as they are in regular contact with people, patients, migrants, or refugees bringing various diseases from neighbouring states (2,4,5,10,13,15,16,19). Furthermore, all – 6 – HAWs working within human rights development then mentioned feeling at-risk from the current unstable political situation and experiential or testimonial experiences of risks. These were being arrested, harassed, raped, or beaten by the government, being automatically labelled as politically inclined or linked with the Resistance Committee currently fighting the government (9,12,13,14,22,24).

Additionally, the organization's external circumstances were discussed. HAWs discussed the power of donor funding on their work, overlapping with the organizational mandate. 3 HAWs reported this leads to frustrations or fears of not delivering the work leading to stress, hence affecting HAWs mental health (1,3,14).

Lastly, 2 HAWs felt direct violent threats from the objective of their work itself – the affected population – if only certain communities are being chosen for a project. HAWs are then left to deal with the other, non-chosen, *angry* ones, seeing them as well as their family, community, as an enemy (3,22).

Risk Information

There seemed to be a slight difference between key risk information sources of international and Sudanese HAWs. Although they sometimes overlapped, all international – 7 – HAWs designated their HAW organization as the key risk informant (1,6,7,8,11,22,24). For Sudanese HAWs – 7 – not only their organization played a key role (9,12,14,17,19,20,23) but primarily neighbourhood and environment, including their friends, family for 2 (12,17) public places such as market for 3 (5,12,15), mosque for 1 (17), women social group for 1 (21) or the community they worked with reported by 8 HAWs (5,10,12,15,16,20,21,22), and the social media for 9 HAWs (4,9,10,12,13,14,18,19,25). Language barriers for internationals might be one of the key reasons, as 1 international HAW, speaking Arabic, tended to rely more on information from local people (6).

If the information flow was perceived as "regular", 4 HAWs reported feeling safer (2,6,15,20). 1 HAW realized based on the information provided, she is more vulnerable (8). Additionally,

1 HAW mentioned since there are no new COVID-19 cases reported, it is not a risk (16). Another one disputed this conclusion, conscious of potential bias:

"It is not that it's resolved. Because I always ask how the situation is, if there are still cases that are being reported, but no one is officially reporting or officially talking about it. And that makes you feel like it has, it is gone, but it is not gone, it is still there. (...) And we start also feeling relaxed." (8)

5. Discussion

The results above suggest humanitarian aid workers (HAWs) seemingly consider Sudan as a rather high-risk environment based on its volatility. However, many, (apart from Sudanese female HAWs), do not necessarily feel targeted for their work (found also by Stoddard et al, 2011:5), but rather for being part of the environment. This could partially explain the highest ranking of robberies and carjacking risks stemming from the country's deteriorating situation. It is in line with recent studies, affirming the role of contextual factors in risk perception (Ferrer & Klein, 2015) and suggesting HAWs can be targeted due to economic reasons (Stoddard et al, 2021:6), living a higher-class level life compared to the rest of the local population. Furthermore, the result of viewing risk exposure as a necessary part of HAW's job seemingly agrees with findings on HAWs from previous studies on what could be called as "numbing effect" faced notably by certain field-based HAWs. They reported everyday risk exposure making them perceive it as "new normal" (Fast & Wiest, 2007:10; Stoddard et al., 2011:6; Scott, 2021:11).

Apart from the environmental influence on how risk is perceived, various individual factors emerged ostensibly influencing the risk perception and definition, notably HAWs' *age, sex, race and ethnicity, nationality, religion, understanding of risk, knowledge, values,* and *interests* (Chapter 4). However, further interlinks between these risk perceptions need to be made considering scientific and academic findings to this date. HAWs do not live and work isolated but interact with other people as well as the environment as part of the existing, complex, interlinked "Human-Environment System" (Becker, 2014:177). A change within any of these system elements can influence and change any other component (Heylighen et al., 2007:1).

This speaks for a need of dynamic and constantly (re-)evaluated security risk management (SRM) to uphold HAWs protection, even more so needed in Sudan or other reportedly unstable, dynamically evolving contexts. Based on the available literature on risk perception and the discovered results, 2 key levels will be considered weighing into risk perception, beginning with the *individual level*. This includes HAWs' (individual) *cognitive perception* and thinking influenced by personal preferences, understandings, and biases, prominently featuring HAWs' understanding of risk and knowledge. Secondly, the *socio-cultural level* will be presented, displaying the influence of society, culture, group affiliation and environment. This is concluded by HAWs' possible *intersecting identity* and role of power dynamics, argued to be the key consideration for HAWs protection and SRM.

5.1 Individual Cognitive Processes

Individual cognitive processes seem prominent in cases of HAWs' risk perception and evaluation. The reported cyber-risk or perceived safety risks in the office can serve as examples. These are seemingly designated as risks based on HAWs' previous education compared to others who might not have had it, to cope with the uncertain reality of their job and dynamic environment. Slovic (1987:281) confirms this and suggests an employment of individual cognitive processes when it comes to heuristics, a mental strategy enabling humans to cope with an uncertain world (Slovic, 1987:281). Raue and Scholl (2018:1) also discuss that people lean on heuristics in decision-making under risk or doubt. Based on the result above, people (HAWs) then tend to rely either on what is "available" to decrease the complexity of a

judgement or what is deemed "representative" (Tversky & Kahneman, 1974), based on their *experience* or *education* (Sjoberg et al., 2005:602; Slovic et al., 2007:3; Raue & Scholl, 2018:16; Scott, 2021:12).

HAWs weighed many risks against both the dynamics, situation, and risk evolvement, as well as their recent experience and judgement of political, economic, social, cultural, and enviro-developmental context. This suggests HAWs local, Sudan (hence spatial) setting matters for risk identification (Stoddard et al., 2011:5; EISF, 2018:7; Bodas et al., 2022:6) further influencing the nature of the risks (Brown, 2014). The found results, notably within the "understanding of risk" (Chapter 4), propose HAWs put more weight to risk if perceiving it as uncontrollable (not being in charge), involuntary or with "dread" (or "high degree of fear") linked with certain or probable death. This phenomenon was previously studied and reinforced by many researchers (Nordenstedt & Ivanisevic, 2010:338; Slovic, 1987; Renn & Rohrman; 2000:221; Brown, 2014). To gain control over risk, HAWs then reported the importance of what could be seen as a choice on when or if to expose yourself to a risk. This possibly corresponds to Slovic et al. (2007:1349) who suggested the importance of the temporal aspect of heuristics and experience, where in weighing effects now vs. in the future usually wins the former.

Furthermore, the results suggest there is a difference between "experiential" (own experience) knowledge and "testimonial knowledge" (shared by others). Nick (2023) states the researchers agree that we can learn from the testimony of others. However, the study suggests differences between own and testimonial experience and knowledge findings. If experience was shared by another HAW, colleague or family member, the risk was perceived as higher, as concluded de Wit et al. (2008) in their study of personal testimonies effects on risk perception. If the experience was HAW's own, they seemed more in control and ready to downplay the risk. It could represent what researchers call "optimism bias" or "unrealistic optimism" leading to unreal estimation of own preparedness and resilience designated as high despite low accuracy of the actual risk (Bodas et al., 2022:13; Ferrer & Klein, 2015). This points to inherent biases of experiential system influencing risk perception (Slovic et al., 2007:1347).

5.1.1 Biases

Within the study, many HAWs described "feeling at-risk of" more often than "being at-risk of". This could relate the influence of the "affect heuristic" within risk perception, presenting people's reliance on feelings as a source of information (Slovic et al., 2007:1347; Raue & Scholl, 2018:11). Slovic and his colleagues define it as a strong conditioner of preference, being independent from cognition (2007:1336). To be "rational", one needs knowledge, attention, and memory (ibid:1335). However, a problem seems to arise if a particular risk was never experienced, potentially leading to a bias. This could be the case of HAWs based in the East of Sudan, reporting no risks and feeling safe. According to Raue & Scholl (2018:12), heuristics serve as an "anchor" point, notably if not having any or little information on a potential risk using memory or situational information. This could then indicate a deeper need of "a general risk" cross-examination, to mitigate any potential bias based on missing previous encounters, education or other. Furthermore, some HAWs reported higher fear (or PTSD) of a risk based on their previous encounter leading to a negative outcome, e.g., police arrest and deadly attacks in the area. This could support Slovic et al.'s findings on higher risk perception based on

negative feelings and experience as well as positive ones being an incentive (2007:1342). For the latter, the reported HAWs values of having kids and close family for whom they have strong feeling connections might also play a role, subsequently re-evaluating risks and seeking protective measures.

Additionally, multiple HAWs reported not considering a potential risk based on not seeing or hearing about it, most prominent within the safety risk category, e.g., car accidents, natural hazards, or diseases outside of the rainy season. As perception goes primary through senses, such as seeing, hearing, touching etc. (ibid), Johnson et al. (2009:1596) point to the role of biases when considering a risk, featuring the sensory ones as very prominent. In this study, it could also be based on HAWs' temporal and spatial position, general or at the time, including their movement day/night or bases stated within "Time and Place" (Chapter 4.2.2 External Factors). However, other potential heuristic biases should be considered, notably when it comes to the subsequent HAWs' behaviour based on risk perception, where differences occur in voluntary risk-taking despite sharing the same work value of serving/saving the communities. Moreover, as HAWs reported relying on "common sense" when assessing their risk, attention should be paid to individual heuristics that can be faulty (Slovic et al., 2007:1348) and put them in danger.

Another prominent role in risk designation and evaluation plays available sources of risk information and its flow (see Chapter 4.2.2 External Factors). Kahan (2008:40) reports these can also skew the "real risk" for people (HAWs) depending on their belief's affirmation. As these were accessed a bit differently by Sudanese and international HAWs, mapping these could potentially be beneficial for their organizations as well as themselves to understand the way HAW's risk perception and behaviour is shaped.

5.2 Socio-cultural Environment

Being a HAW further means being part of a specific social group of people with certain professional values and worldviews. In this study, HAWs seem to subscribe to similar professional values and worldviews, perceiving their own role as either "supporter", "helper" or "solver" as the most prominent ones. This seems to support the viewing of "risk" as necessary due to work exposure. However, despite sharing certain similar values, e.g., helping others, individual values come into play resulting in different behaviours. Here, putting yourself first to help more later vs. putting the affected population first to help more, which, though different approaches, could both be a result of maintaining control over the risk (Sjoberg et al., 2005:601).

Acting within a certain group and environment could play a role in suggested HAWs' perception of themselves as "richer" when *comparing themselves to others*, being more vulnerable to, e.g., thefts and robberies. Further, the breaking of social norms by working (in the case of female HAWs) is also possibly linked with general contextual religion believes. One HAW did not feel part of the group, increasing anxiety and worry over kidnapping due to different religious beliefs than the "norm" in the local area. The "acting within different social groups" effect is supposedly applied to remain in control (Slovic, 1987:281). Here, it then seems particularly relevant when paired with findings of the "cultural theory of risk", studying how

"culture shapes individuals' beliefs about risk" (presented by Douglas & Wildavsky, 1982), specifically HAWs' values, attitudes, norms, or beliefs.

Furthermore, HAWs suggested needing the "knowledge of the context" to properly assess risk. This was for both international HAWs, for whom it was implied they are often missing contextual knowledge, and local Sudanese HAWs, displaying big pressure in access restrictions and high specific risk rating due to their tribal affiliation. These display signs of a strong hierarchy embedded in the culture and society, and professedly advocates for the need to understand "how culture shapes individuals' beliefs about risk" (Child, 2013:66). Grounded in Douglas' Cultural Theory, it differentiates between different social units, communities and state types based on their social structures and worldviews (political attitudes) (ibid). Douglas' and Wildavsky's (1982) work introduce 4 different structure types of societal existence: Fatalism, Hierarchism, Individualism, Egalitarianism. Fatalism is defined by rigorous social structure appointed from the outside. Hierarchism brings "strong self-imposed social structures and "believes in the validity of their own system". Individualism suggests frequent re-evaluation of its social relations and society being self-sufficient, and Egalitarianism contains hardly any formal social rules and rather relies on strong peer pressure which suggests an autonomous society (Kahan 2008:468-469; Child, 2013:66-69). Child then seemingly confirms the previous findings, when she categorizes *Sudan* as a *Hierarchic society* and *state*, with a strong central authority and a high chance of imposing strict nationalistic and/or religious-cultural beliefs (ibid:69) as well as "public social classifications like a person's heritage, race, gender, or club membership" (ibid:66).

However, the definition cannot be taken as final since currently, individual HAWs report frequent cases of thefts and robberies, typical for an individualist, not hierarchical society (ibid:68) and proposes another level. Although Sudan as a context and general society can be hierarchical, individual HAWs or groups of HAWs do not have to be. This also confirms previous research interlinking cultural cognition and risk perception, where people (HAWs) can have different beliefs and worldviews. Based on these, according to Kahan (2008:21), it "can be expected to disagree about risks", bringing additional pressure and possible implications for HAWs protection and interplay of risk between HAWs identity and environmental risks.

Other important individual aspects such as the level of education of HAWs (not further explored here, suggested ibid) or a case of a Sudanese HAW with double citizenship (growing up elsewhere) feeling "more protected" are also prominent. This was portrayed throughout different context experience, or when discussing cases of international HAWs who were suggested to be more protected and under less pressure to "fit in" or protest for their rights compared to Sudanese HAWs. This could suggest another level of a possible rapid society degradation. It exhibits signs of a "failed state", considering both collected data as well as the current context (see Chapter 1.2), needing to be explored further to ensure holistic context risk analysis.

The intersecting individual factors thus seem bound with the socio-cultural environment, such as in cases of *Sudanese female HAWs* whose *identity* was linked with fear of violence linked with local customs of women not working or dressing up differently. Furthermore, the results indicate certain HAWs are *feeling safer compared to* (other) citizens and the affected

population, downplaying certain contextual risks such as natural hazards effects based on their values. The possible overlap of HAWs with their role as a citizen at-risk of attacks and violence considering their work and current political situation proves another role intersectionality to consider in HAWs protection, as suggested by Brooks (2016:4). Therefore, different types of roles and/or not yet discussed HAWs "identities", (considering HAW's characteristics, beliefs, and other inherent individual factors), should be further considered, as Finucane et al. (2000:170) regard risk perception as a "social construct" relying on individual characteristics, one's identity.

5.3 Intersecting Identity

The key "identity" factors emerging from the study, (those not yet fully discussed here), represent *age, sex, race and ethnicity, nationality, religion, values, and interests* (Chapter 4). Their intersectionality among themselves as well as with the external factors within this study seems imminent, further confirmed by recent studies on HAW risk perception (e.g., EISF, 2018 on nearly 250 HAWs from different organizations and contexts; Guisolan et al., 2022, on ICRC's HAWs).

Although "age" does not seem to stem extensive conclusions, the intersection between "woman" and "older age" observation of older women feeling less at-risk of rape has been recognized before (e.g., Warr, 1985:243; Tjaden & Thoennes 2006:17) but their inherent vulnerability also suggested (CPS, 2021). Notions within "sex" point to differences between men vs. women risk exposure as well as their perceptions, which characterize women, notably Sudanese, as "weaker". Although some previous research presented men judging risks lower than women (e.g., Stern et al., 1993; Hitchcock, 2001), Flynn et al. (1994) pointed out that risk judgement crosses the sex, gender and/or racial boundary and relates to socio-cultural and political factors. This was also confirmed by Finucane et al. (2000:161), who further discussed the influence of "worldviews", described as "deep-seated values" embedded in society and related general position of women with low power and control, suggesting they perceive the world as more dangerous based on their vulnerability to discrimination (ibid:170). Various HAWs reported women's inequality and prejudice against their workforce. This was also confirmed by other studies on women and youth in Sudan, such as Ndip et al. (2021). Although women can be and are generally allowed to work, it is with severe behavioural or public clothing codes imposed on them, also highlighted by Tønnessen (2019), relating to contextual socio-cultural constraints.

Moreover, this societal inequality can pose constraints not only for female HAWs but potentially also other marginalized identical groups (religious, racial, ethnic) within similar contexts to Sudan. In Sudan, women are still unequally represented in the decision-making processes, the Christian minority was persecuted up until 2019 (and the legal reform for freedom of religion continued before the 2021 coup), and the LGBTQ+ community is still heavily marginalized (Freedom House, 2021b; IOM, 2021). Current studies then point to the importance of studying "gender" rather than "sex", to consider influences of sexual orientation, gender identity and expression of risk (EISF, 2018:9). Nonetheless, this was not fully possible here based on 1) data collected as HAWs did not suggest any other gender identity apart from male or female, and possibly 2) considering that within Sudanese society, other gender identities, such as LGBTQ+ community, are still rejected and unwanted (Equaldex, 2018).

A HAW also reported his deep-embedded faith puts him at-risk of kidnapping and mental-health unsafety, suggesting personal beliefs and faiths should be considered, representing a personal "worldview". Slimak & Dietz (2006:1691-2) interpret the "worldviews" as personal values and spiritual beliefs, considering "What is important to me?". Their study stressed worldviews' influences primarily on human behaviour rather than risk perception. Others, on the other hand, stress their importance and influence within risk perception (e.g., Bodas et al., 2022:6; Finucane et al., 2000; Sjoberg et al., 2005:2). These socio-cultural "worldviews" are setting the propensity of individuals to assess the risk, interacting with their individual characteristics and together form a specific risk perception (Kahan, 2008). Considering the aforementioned example, it could be different for people without a strong religious faith.

However, values and worldviews can also change. HAWs statements display this with a new safety and security course, or personal experience acquired, or when comparing current vs. previous experience. Such was the perception of car accident risk which some HAWs compared to their previous, more travel chaotic context settings, thus perceived it in Sudan as a lower risk. This could support the role of dynamics and evolvement of risk perception depending on the status of these, which Loewenstein & Mather (1990:166-169;172) address to a person's ability to *adapt to* (link to HAWs knowledge - experience) or manage a *surprise* (linked to HAWs expectations), where HAWs prior *familiarity* with risk seems to play a role.

One of the strengths of this research could be the large number of local Sudanese HAWs interviewed, oftentimes perceived as more at-risk (e.g., Stoddard et al., 2011). The study points to the need for further research in terms of "race" and "ethnicity" apart from "nationality" within the local context. In this example, going further beyond the division of "light-skinned" Arabs and "dark-skinned" Africans, in detail of the different tribes, race as well as ethnical culture and customs, generalizable to other HAWs operational contexts. This type of study cannot confirm or deny whether local HAWs tend to lessen the risks more to protect their livelihoods and jobs (suggested ibid:6). However, Sudanese HAWs (and even more so female) seem under more scrutiny than internationals to comply with the local culture to avoid risks, notably the verbal and physical harassment, which is deeply embedded in the context they live and work in. Scott (2021:38) uncovered the same finding in case of the local HAWs in localities experiencing Arab spring, suggesting a potentiality of considering this finding within other similar socio-cultural and political contexts. Additionally, as they are generally more deeply embedded and invested in their society, culture, and environment in general – as displayed here within notably the risk information, time and place and context Chapter 4.2.2 – their protection should be strengthened (Stoddard et al., 2011).

Moreover, the findings hint at the ultimate role of power dynamics in HAWs protection and SRM, both the visible one, articulated by HAWs themselves, and what could be considered a "hidden" one, not directly reported but present and influential. For the former, HAWs reported various power influences already, namely the donors and organization itself, in the shaping of the program as well as the protection policies. Hence, not only do the different HAWs perceive risk differently but they are part of their organization and embedded in Sudanese society. Nonetheless, they are each having their own specific views, cognition, biases, and identity when considering what is or is not a risk, further having the power to influence others (Sjöberg, 2000:407). For HAWs protection, it is crucial to understand whose perception and realities within risk perception are expressed or deemed acceptable, as "whoever controls the definition

of risk controls the rational solution to the problem at hand" (Slovic, 1999:95). Further consideration of HAWs role (here suggested program focus based on the sample collected) and overall organizational culture which can seemingly represent a risk too, needs to be considered (EISF, 2018:28). HAWs focused predominantly on security risks. However, many recognized the presence of safety ones too, being not as conscious among HAWs in Sudan, but still ostensibly present. This conceivably demonstrates the case of a "hidden" power influence within risk definition, evaluation and/or presentation to be considered in SRM: Sjöberg et al. (2005:599) highlight that if certain risks are generally disregarded (here could be within the organization or by those leading SRM), they can be individually (e.g., by HAWs) ranked higher and vice versa.

Finally, this can be linked with the importance of risk communication, which the interviewed HAWs seemingly approach differently, based on their nationality, language, or socio-cultural position. However, as in the displayed case of COVID-19 – being a risk for one vs. not for another due to no cases reported – it can have a severe impact on how HAWs view or bias their view on the risk (Nilsson et al., 2016:25), tying it back to individual cognition.

Conclusion

The study aimed to identify the factors influencing humanitarian aid workers' (HAWs) risk perception in Sudan. Based on the qualitative study of 26 HAWs, it can be concluded that there are various individual characteristics (8), including *age, sex, race and ethnicity, nationality, religion, understanding of risk, knowledge, values, and interests*, and external factors (4) which include *country context dynamics, place and time, humanitarian aid worker's organization and risk information*. Within the conducted analysis, it was presented that these further mutually intersect and form specific HAW's safety and/or security risk perception. The particular interaction between these two categories of factors brings out the need to consider not only the environment with its socio-cultural implications HAWs are based in – Sudan – but also their individual cognition, notably the individual heuristics and biases.

Sudanese society, designated as hierarchic, imposes strict nationalistic and/or religious-cultural beliefs influencing HAWs' role, values, and identity (such as race, sex or gender, society membership etc.) affecting risk perception and evaluation. Notably, on Sudanese HAWs, and even more so lower-power societal groups, such as women or ethnic, religious minorities. These are more likely to experience the pressure to comply with local socio-cultural norms including tribal affiliation dynamics. This particular identity can mean being or feeling targeted as a HAW, compared to other HAWs who are demonstrably risk exposed but do not necessarily feel targeted for their work but rather for the environment they work in. This calls for protection of Sudanese HAWs in particular, and further confirms HAWs' and SRM's need to understand the context and a case study environment for a better, fuller risk perception and evaluation interlinked with the individual characteristics.

All of these layers of intersecting factors are further influenced by HAWs' individual heuristics and inherent biases, notably the sensory ones, which can suggest a skewed vision of risk and its importance for the particular HAW. Investigation of these and other biases can further reveal HAWs' personal understandings and preferences which can be key when considering HAWs' protection measure and their further compliance or non-compliance.

Overall, HAWs in Sudan designated the presence of different security as well as safety risks. Security risks remain in HAWs' minds the most, notably the risk of robbery (theft) and carjackings linked with the current country state. However, safety risks should not be underestimated. SRM is not only about protection from death, violence, and harm (which can overtake a risk analysis as representing a larger threat) but also about the well-being of HAWs, leastwise ethically important to meet humanitarian and development's work goal.

Although HAWs share certain professional views and values, this study suggests the need to approach HAWs' protection not only holistically as a group, but with individual identity needs for protection and context in mind. Each HAW has their own unique identity, values, understanding, experiences, education, and background, which can also evolve and/or change based on the "Human-Environment System" dynamics. However, HAWs in Sudan, despite working within the same context, do not experience the risk equally, depending on the individual and external factors intersection. This can be the case in other contexts too as the way HAWs are, think, experience, and are influenced by the environment, varies. Thus, there is a need to uphold a person-centred approach to SRM as well as to consider the risk information

sources and flow. Everybody has a specific risk profile and depending on who defines the risk – holds the power – then inherently contains their point of view.

Although the individual and external factors studied here are not fully exhaustive, and nor is their intersectionality, they can provide important guidance when considering the person-centred approach to SRM to protect HAWs. Moreover, it can be a good departure point within SRM to include risk perception including their own, as well as the one of HAWs, and update it regularly based on 3 aspects. 1) Not only the environment and risk change in nature but 2) HAWs themselves can too (through their growth, experience enhancement etc.), further considering also 3) the frequent HAWs turnover within the organization and field changing the safety and security protection needs.

Further research as well as internal SRM studies – including HAW's risk perception in general or other contexts – are needed. However, future research should also include an investigation of HAWs' behaviour, which could bring additional strength notably when considering the establishment of protection measures or seeking gaps within those established as well as its extension on other contexts. There, the results of this study's similarities can serve as a departure point, and potentially, in cases of context similar to Sudan (such as the socio-cultural norms or political situation seemingly corresponding with other, notably Arab contexts), could serve as a reference study case. Although this study focused on the HAWs based in the country to enable relevant comparisons in terms of a similar work environment, additional research should also consider the inclusion of all categories of HAWs. These can be throughout organizations as well as civil societies or government, and it is important to find the best protection measures ensuring both safety and security of all HAWs workers. Moreover, due to the projectization of many HAWs' organizations (dependent on external funds from donors and a project's focus), there is an increase of "irregular HAWs" such as roster staff or consultants. Although these workers may give humanitarian and/or development organizations more flexibility – quick onboarding or end of contracts – they have their specific risk vulnerability profile, working online or coming to the country for short-term missions, which also needs protection.

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Appendix A – Interview Guide

PERSONAL NOTES TO REMEMBER:

- ➢ Have a charged phone with enough space for recording. If online, check the recording available in the program.
- ➢ Choose a silent room for the interview – every disturbing sound/acoustics can easily destroy the recording.
- ➢ **The questions stated below are only guidance!**
  - You do not have to ask the question the same way every time.
  - **Probes – marked in blue:**
    - Try not to lead them to reply if you know some patterns – after every interview, review how you ask questions and probe.
    - See examples of probes under each question
- ➢ **Observe and note:**
  - Which aspects of safety and security do they mention first? Second? Third? Which is not at all? Which they do only if you probe them to it (e.g., safety issues not, security yes)
  - Do they realize something is more important than what they told you in the first place after you probe them to it?
  - Is there any difference throughout their experience, how did they change their behaviour, based on what? Is it different in different states (if they work in multiple)?
  - Make observation remarks and Memos from each interview.
- ➢ **Transcribe the interview immediately after or ASAP** (then you still remember things from it)
- ➢ **Try varieties of terms** – not only *hazard,* and *risk* but also *threat* and *danger* to you, your work?

Introduction

→ When conducted ONLINE: Start with screen to say hello, then offer to turn off video to keep the connection smooth.

- Briefly describe the **thesis**' **aim**, **data collection** and **analysis**

The goal is to investigate what is safety and security, what does it mean in context of Sudan, in other words how do HAW describe (their) safety and security and what do they do about it, such as what measures do they take/not take.

- There is **no right or wrong,** it is all about how you look at it.
- Stress the **voluntary basis** of the project, freedom to **withdraw at any time** – even if you agree to participate, you can withdraw at any time, all data will be anonymized and never used for any other purpose than this master thesis.
- Get **Informant consent.**
- Ask for **permission to record the session.**
- Anticipate **internet connection –** *If bad connection occurs, try to reconnect, I will wait for you.*
- **Present structure of the interview**

First, I will ask you some general information about yourself, your work and then we will begin with the core of the interview, your perception of safety and security, in general, as a humanitarian worker and about possible protection measures.

You can withdraw from answering them at any time.

Q: Do you have any questions before we begin?

Interview

Time of the interview (from-to/total):
Date:
Place:
Interviewer:
Interviewee:

A) Collect general information about the interviewee

- Age:
- Sex/Gender:
    - *If no answer, offer: Is it okay if I put you down as male, female, other or you prefer not to say?*
- N. of years of work experience as a HAW:
- N. of years of experience as HAW in Sudan:
- Regions of work in Sudan as a HAW (current and past):
- Where are you currently based (note city vs. village):
- Organization they work for (LNGO, INGO, UN, other):
    - What is HAW's position/work focus?

B) Guiding themes and questions:

General Safety, Security, Risk Perception

- *(1) Please, describe for me how do you perceive general safety and security (situation) in Sudan*

Personal Safety, Security, Risk Perception

- *(2) How do you perceive your personal safety and security?*

(Focus on whether they mention both safety measures and security measures, probe them if they don't talk about safety – examples about diseases, health; ask: what is most important to you; what do you see as the biggest threat, danger, risk to yourself? What makes you feel safe/secure if facing these risks?)

- *(3) Do you as a humanitarian worker encounter/experience any hazards/risks in your work? Name them.*
    - *Which do you feel are most prominent to you? Why?*
    - *Which the least? Why?*

(Tell me a bit more about your experience as a HAW. What are the biggest obstacles to your work?)

Organization, Protection Measures Perception

- *(1) Which measures do you take to enhance your safety and security (SS)? / Are there any safety and security measures you take to enhance your safety and security?*
  (Which protection measures are key for you, increase or decrease your SS?)

- *(2) Can you think of any safety and security measures you know about but deliberately not take? Why is that? (Anything that would prevent you from doing your work? E.g., in connection to your organization's rules?)*

- *(3) Do you feel the organization you work in, or your work environment has helped you in any way to increase your personal safety and/or security?*
  - *If YES, how?*
  - *If NO, why do you think it is?*

(Did you receive/undertook any safety or security training? Alone or not? Was it because of the organisation? Do different organizations differ when it comes the level of safety, security – UN vs. INGO vs. LNGO? What is your experience?)

- *(4) Do you feel the safety and security measures provided by your organization are adequate? Why (not)? (Is there something you are missing?)*

- *(5) Do you think the safety and security measures you take or not take have changed at any point of your work here in Sudan?*
  - *Probe and ask if any events that has happened to you apart from the coup that effects?*
  - *Is there anything that has changed your way you behave?*
  - *If YES, when, why, and how?*

Conclusion

- **Thank you for your participation.**

- **Discuss follow-up with the results** – desire to read final analysis? Offer you will contact them after the thesis is done, and if they are interested, you will send them your thesis.

- *Last Q: Do you know about anyone else who would fit the criteria for this interview?*
  - HAW currently working in Sudan
  - *Do you know their contact info/how can I reach them?*
  - *Where do they work – region + organization + some info about them (M/F etc.)*

Appendix B – Letter of Invitation to Participate in Qualitative Research

Dear Sir/Madam,

My name is Magdalena Hix. Since I had the pleasure to start working in Sudan, I am currently conducting *independent* qualitative research focusing on "Safety and Security of Humanitarian Workers in Sudan" from their point of view as part of my master-level degree project in Disaster Risk Management and Climate Change Adaptation at Lund University, Sweden.

Based on your profile, I want to ask you whether you would be **willing to participate in the study through an interview with me describing your experience and perception of safety and security in Sudan as a humanitarian worker?** The interview usually takes around 1 hour (the time can be adjusted based on your availability). It would be an informal, one-on-one format and ideally conducted in English. Currently, we can conduct it online via any platform suitable for you (Zoom, Teams, Skype etc.). In-person interview might be possible later on as well, if you would be in Khartoum or pass by, as I might stay in Khartoum for a few days sometime in May 2022 (TBD).

If you decide to participate, you will still **keep the right to withdraw from the research at any point; before, during or even after the interview. Your name would not be associated with the research findings in any way** since the results will be processed and presented anonymously.

Participating in this study can give you the benefit of reflecting on your journey as a humanitarian worker in Sudan, your perception of the safety, security, and related measures and how it is affecting your work. Additionally, it would give you an opportunity to participate in a qualitative research study and give you the possibility to receive the final findings on this topic, reflecting its current state.

If you have any more questions about the research, please, do not hesitate to contact me, ideally via my email: ma6432ch-s@student.lu.se

If you are willing to participate, please, suggest a day and time that suits you and I will do my best to be available. Thank you for your time.

Warm regards,

Magdalena Hix

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