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A Sharper Lens on Vulnerability (West Africa)

A statistical analysis of the determinants of vulnerability to protection incidents among refugees and migrants in West Africa

MMC Research Report, November 2020



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About this report

In recent years the concept of migrant vulnerability has been increasingly used as a lens for analysis and an operational category through which to pursue protection, assistance and the promotion of rights for all people on the move, regardless of their legal status. In particular, the International Organization for Migration (IOM) and the Office of the High Commissioner for Human Rights (OHCHR) have advanced this thinking through separate conceptual frameworks and guidelines.

Based on a dataset of more than 15,000 interviews with people on the move in West and North Africa between 2017 and 2019, the Mixed Migration Centre has conducted two new studies focusing on West Africa and Libya respectively. The studies draw upon different conceptualizations of vulnerability and use advanced statistical analysis on the determinants of vulnerability, to throw these complex relationships into sharper focus.

The following report covers West Africa, the Libya report is available here. <http://www.mixedmigration.org/resource/a-sharper-lens-on-vulnerability-north-africa/>

The information and views set out in this report are those of the author and the Mixed Migration Centre and do not necessarily reflect the official opinion of the Danish Refugee Council or any of the donors supporting the work of MMC or this report. Responsibility for the content of this report lies entirely with the MMC. Data collection and analysis for this report were conducted thanks to the financial support of the Foreign Commonwealth and Development Office (FCDO) as part of the Safety, Support and Solutions Phase 2 (SSSII) DFID programme.

About MMC

The Mixed Migration Centre (MMC) is a global network consisting of seven regional hubs (Asia, East Africa & Yemen, Europe, Middle East, North Africa, West Africa and Latin America & Caribbean) and a central unit in Geneva. The MMC is a leading source of independent and high-quality data, research, analysis and expertise on mixed migration. The MMC aims to increase understanding of mixed migration, to positively impact global and regional migration policies, to inform evidence-based protection responses for people on the move and to stimulate forward thinking in public and policy debates on mixed migration. The MMC's overarching focus is on human rights and protection for all people on the move.

The MMC is part of, and governed by, the Danish Refugee Council (DRC). While its institutional link to DRC ensures MMC's work is grounded in operational reality, it acts as an independent source of data, research, analysis and policy development on mixed migration for policy makers, practitioners, journalists, and the broader humanitarian sector. The position of the MMC does not necessarily reflect the position of DRC.

For more information on MMC visit our website: www.mixedmigration.org



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Acronyms and abbreviations

4Mi	Mixed Migration Monitoring Mechanism Initiative
DOMV	Determinants of Migrant Vulnerability
DRC	Danish Refugee Council
ECOWAS	Economic Community of West African States
IMREF	Independent Monitoring and Rapid Research and Evidence Facility (for DFID SSSII programme)
IOM	International Organization for Migration
MMC	Mixed Migration Centre
OHCHR	Office of the High Commissioner for Human Rights

A note on terminology

This report uses statistical terms that may be unfamiliar to the general reader. For ease of comprehension and as a handy reference, these are explained below.

A **variable** is a category with more than one value. “Age” is a variable, for example, because not all participants in this study have the same age. When discussing the effect one class of variable has on another, the first class are called **independent variables** and the second **dependent variables**. For example, the independent variable “vehicle speed” may influence the dependent variable “accident rate”. A third class of variables, those that may potentially influence a dependent variable, but which are of secondary interest to the current analysis, are known as **control variables**. Their influence needs to be eliminated (or controlled for) to more accurately evaluate the influence of the main independent variable of interest. By controlling for the influence of, for example, “vehicle type” and “weather conditions”, we can better isolate the effect of our specific variable of interest, which is “vehicle speed”, on the accident rate.¹

The variables explored in this report can be summarized as follows:

Independent variables	Dependent variables	Control variables
Gender	Witnessing Death	Gender ²
Country of origin	Detention	Age
Language	Extortion	Religion
Use of smugglers	Kidnapping	No. of children
Stopping to work	Physical abuse	Marital status
Intended destination	Robbery	Education level
Survey location	Sexual assault/harassment	Employment
		Urban or rural home
		Journey duration
		Survey location

¹ The distinction between independent, dependent, and control variables is not intrinsic; it depends on the chosen focus of study.

² In this analysis, gender and survey location are used as both independent variables and control variables, depending on the hypotheses that are tested.

This report's dependent variables consist of different types of **protection incident**, that is, an instance of abuse or exploitation that befell a refugee or migrant during the course of their journey.

The report analyses how **likely** such incidents are in the presence of specific independent variables. While in general the usage of the word “likely” tends to relate to *future* expectations, in this report it is frequently used as a shorthand to express statistical probability in an existing dataset.

Descriptive statistics are figures that **summarize** variables. The average age of participants, and the proportion of participants who experienced physical abuse, for example, are descriptive statistics. As their name indicates, descriptive statistics simply **describe** the data. They do not allow us to make inferences or assess relationships between variables.

By contrast, **regression analysis** is a statistical method that allows for the exploration of relationships between variables and how these influence each other. For example, we might find that the higher the vehicle speed is, the greater the accident rate. Based on a mathematical model, we can then predict the accident rate given a specific vehicle speed. For example, if you know that each increase of 10km/h is associated with an increase of one accident per driver on average, and that this relationship is linear, you might predict that an increase of 20km/h will result in an increase of two accidents per driver on average. This is why in regression analysis, independent variables are called predictors—in the case above, vehicle speed can be used to predict accident rates.

Two types of regression analyses are used in this report. In most analyses, we use (binomial) **logistic regression**. Logistic regression is used to predict a *categorical* outcome. In our case, we investigate the influence of independent variables on *whether or not* participants have experienced a given protection incident. For example, does being a woman lead to a higher likelihood of experiencing sexual abuse than being a man? We also use (multiple) **linear regression**. In linear regression, we do not just assess whether participants will experience protection incidents, but how many protection incidents. For example, given the age of a participant, how many protection incidents will they likely experience?

Executive summary

In recent years the concept of *migrant vulnerability* has been increasingly used as a lens for analysis and an operational category through which to pursue protection, assistance and the promotion of rights for all people who migrate, regardless of their legal status. In particular, the UN's International Organization for Migration (IOM) and its Office of the High Commissioner for Human Rights (OHCHR) have advanced this thinking through separate conceptual frameworks and guidelines. By subjecting the factors that affect the vulnerability of refugees and migrants in transit through West Africa to advanced statistical modelling, this report throws these complex relationships into sharper focus, thereby, it is hoped, making an important contribution to existing work on the subject.

Building upon past research by the Mixed Migration Centre (MMC), this report posits hypotheses regarding factors affecting the vulnerability of refugees and migrants in transit through West Africa, which are tested through regression analysis. The analysis draws on **a database of responses by 10,338 migrants and refugees** to structured surveys conducted by MMC's Mixed Migration Monitoring Mechanism Initiative (4Mi) in Burkina Faso, Mali, and Niger between June 2017 and December 2019. Together, these **respondents reported 23,204 discrete protection incidents**.³

The heart of this report explores a range of refugee and migrant characteristics (or *independent variables*) and assesses their influence on vulnerability to different protection incidents (or *dependent variables*). The independent variables selected for an assessment of their influence are: **gender, country of origin, language, use of smugglers, stopping to work en route, intended destination, and route taken**. The dependent variables examined in this report are incidents of **death, detention, extortion, kidnapping, physical abuse, robbery, and sexual assault or harassment** that have been directly experienced (or witnessed, in the case of death and sexual assault) by refugees and migrants who completed 4Mi surveys.

Controlling for refugee and migrant characteristics that may influence vulnerability to protection incidents, but which are of secondary interest to this research, is an important component of the regression analysis. These characteristics (or *control variables, explained in greater detail above*) *fall into four categories: demographics, social status, family and other (journey duration and survey location)*.

All the selected independent variables were found to contribute to vulnerability with regard to multiple types of protection incident, and several – namely, **country of origin, intended destination, and location of 4Mi interview (used as a proxy for route taken) – contributed to vulnerability to all protection incidents**. Thus, it appears safe to conclude that geography is a significant vulnerability factor, although the interpretation of this result is not always clear cut.

Other important findings include:

- **Extortion** is an extremely prevalent protection risk in West Africa, one that 61.2% of 4Mi survey respondents said they had personally experienced. Each of the other protection incidents was reported by fewer than 20% of respondents.
- Previous MMC West Africa research has suggested that refugees and migrants in transit through the region may at times use **smugglers** to avoid extortion or detention. The analysis conducted for this paper found that respondents who used a smuggler were 3.6 times more likely to report having been detained, and 1.8 times more likely to report having experienced extortion, than respondents who did not use a smuggler.
- Respondents surveyed in **Burkina Faso** were more likely than those surveyed elsewhere to report four types of protection incident (witnessing migrant deaths, witnessing or experiencing sexual assault or harassment, experiencing physical abuse, experiencing robbery) when controlling for confounding variables. This was contrary to the expectation derived from previous research that respondents would be more likely to report incidents further north in the Central Sahel, particularly in Mali. Respondents in Mali and Niger, however, were more likely to report incidents of extortion and detention than those in Burkina Faso.
- **Kidnapping** was the most difficult protection incident to explain in this analysis. Only three of the independent variables showed significance in predicting kidnapping

³ In parallel to this study, MMC also conducted similar analysis in North Africa, based on 4Mi surveys in Libya: Mixed Migration Centre (2020) [A Sharper Lens on Vulnerability - A statistical analysis of the determinants of vulnerability to protection incidents among migrants and refugees on the move in North Africa](#).

- Confirming previous MMC summaries of 4Mi data the regression analysis indicated that female respondents were substantially more vulnerable to **sexual assault or harassment**. They were 4.1 times more likely to report having witnessed or experienced this than male respondents.
- In several cases, analysis of the 4Mi datasets using regression revealed **disparities** with the corresponding descriptive statistics, demonstrating that while descriptive statistics are an important tool in the analysis of humanitarian data, they may not always tell the full story.

The below table provides an overview of the findings, detailing for which protection incidents each independent variable has significant predictive value, and therefore could be said to have an impact on vulnerability.

Table A: Summary of findings

Independent variables	Significant predictor?	Synthesis of findings
Gender	<ul style="list-style-type: none"> ✓ Experiencing detention ✓ Experiencing extortion ✓ Experiencing physical abuse ✓ Experiencing robbery ✓ Witnessing/Experiencing sexual assault/harassment <p>No significance:</p> <ul style="list-style-type: none"> ✗ Witnessing death ✗ Experiencing kidnapping 	Results confirmed the hypothesis that women are more vulnerable than men to certain types of protection incident, especially sexual abuse. The gender of a respondent is a significant predictor of whether they will witness or experience protection incidents of all types, except death and kidnapping. For example, women were more likely to witness or experience sexual assault (4.1 times more), physical abuse, and robbery than men. Men were more likely to experience detention and extortion than women.
Country of origin⁴	<ul style="list-style-type: none"> ✓ Experiencing detention ✓ Experiencing extortion ✓ Experiencing physical abuse ✓ Experiencing robbery ✓ Witnessing/Experiencing sexual assault/harassment ✓ Witnessing death ✓ Experiencing kidnapping 	Results confirmed the hypothesis that refugees and migrants from outside the Central Sahel are more likely to experience certain protection incidents. Refugees and migrants originating from Other ECOWAS states and Other countries were more likely to experience all protection incidents than respondents from the Central Sahel. For example, those from Other ECOWAS and Other countries were, respectively, 1.5 and 2.4 times more likely to report sexual assault than those from the Central Sahel. Additionally, refugees and migrants from Other countries were more likely to experience protection incidents than respondents from Other ECOWAS states, with the exception of extortion.
Language⁵	<ul style="list-style-type: none"> ✓ Witnessing death ✓ Experiencing extortion ✓ Experiencing robbery ✓ Witnessing/Experiencing sexual assault/harassment <p>No significance:</p> <ul style="list-style-type: none"> ✗ Experiencing detention ✗ Experiencing physical abuse ✗ Experiencing kidnapping 	Results confirmed the hypothesis that language barriers make refugees and migrants from non-Francophone countries more likely to experience protection incidents. Refugees and migrants from non-Francophone countries were more likely to witness or experience a range of protection incident types, namely death, sexual assault, robbery, and extortion. For example, refugees and migrants from non-Francophone countries were 1.6 times more likely to report extortion than respondents from Francophone countries. However, whether a refugee or migrant comes from a Francophone country is not a significant predictor of exposure to physical abuse, detention and kidnapping
Use of smugglers	<ul style="list-style-type: none"> ✓ Witnessing death ✓ Experiencing detention ✓ Experiencing extortion ✓ Experiencing physical abuse ✓ Experiencing robbery ✓ Witnessing/Experiencing sexual assault/harassment <p>No significance:</p> <ul style="list-style-type: none"> ✗ Experiencing kidnapping 	Results confirmed the hypothesis that use of smugglers by refugees and migrants is a useful predictor of their likelihood of experiencing protection incidents of all types, except kidnapping. For example, respondents who reported using smugglers were subjected to extortion and detention in greater proportions than those who did not use smugglers, by factors of 1.8 and 3.6 respectively. They also showed greater vulnerability to witnessing or experiencing sexual assault or harassment, robbery, physical abuse and witnessing migrant deaths. It does not follow that the smuggler is necessarily responsible for these incidents, but that smuggler use is one of the factors increasing risks.

4 For descriptive and regression purposes, country of origin was divided into three categories: Central Sahel (Burkina Faso, Mali and Niger), Other ECOWAS (all other ECOWAS countries excluding Burkina Faso, Mali and Niger) and Other (all other countries reported excluding the above).

5 For descriptive and regression purposes, respondents were grouped into non-Francophone country of origin and Francophone country of origin. Francophone countries were defined as countries which identify French as an official language as well as Algeria and Guinea-Bissau. Although it is a former Portuguese colony and predominantly Lusophone, Guinea-Bissau is a member of the Francophonie organization and teaches French in schools.

Stopping to work⁶	<ul style="list-style-type: none"> ✓ Experiencing detention ✓ Experiencing physical abuse ✓ Experiencing robbery ✓ Witnessing/Experiencing sexual assault/harassment ✓ Witnessing death <p>No significance:</p> <ul style="list-style-type: none"> ✗ Experiencing extortion ✗ Experiencing kidnapping 	<p>Results confirmed the hypothesis that respondents who stop to work to fund the next stretch of their journey may be particularly vulnerable to protection incidents, particularly sexual or physical abuse which could be linked to dangerous work or exploitation. Respondents who reported stopping to work were 2.4 times more likely to report sexual assault and 1.8 times more likely to report physical abuse than respondents who did not stop to work. They were also seen to be more vulnerable to robbery, witnessing migrant deaths and detention. Stopping to work en route was not a significant predictor of extortion or kidnapping.</p>
Intended destination⁷	<ul style="list-style-type: none"> ✓ Experiencing detention ✓ Experiencing extortion ✓ Experiencing physical abuse ✓ Experiencing robbery ✓ Witnessing/Experiencing sexual assault/harassment ✓ Witnessing death ✓ Experiencing kidnapping 	<p>Results confirmed the hypothesis that intended destination is a significant predictor of whether migrants and refugees will experience or witness all types of protection incident. However the effect is not between all groups, and not always in the same direction. For example, those headed for countries in North Africa, other African states, or countries outside Africa (but not in Europe) were all significantly less likely to experience robbery than those intending to end their journeys in Europe. Those destined for North Africa were less likely to experience physical abuse and kidnapping than those whose destination is in Europe. By contrast, those whose destination is in North Africa were 1.5 times more likely to experience detention than those whose destination is in Europe. Those whose destination is in North Africa were 1.7 times more likely to report sexual assault, but only in comparison with those whose destination is countries outside both Africa and Europe.</p>
(Survey) Location⁸	<ul style="list-style-type: none"> ✓ Experiencing detention ✓ Experiencing extortion ✓ Experiencing physical abuse ✓ Experiencing robbery ✓ Witnessing/Experiencing sexual assault harassment ✓ Witnessing death ✓ Experiencing kidnapping <p>No significance:</p> <ul style="list-style-type: none"> ✗ Kidnapping⁹ 	<p>Results confirmed that location of interview (as a proxy for route) is a significant predictor of vulnerability to protection incidents, but it did not appear to support the specific hypothesis that refugees and migrants who travel through the northernmost cities of 4Mi data collection, particularly those in Mali, will show greater vulnerability. When controlling for all other variables, including journey length, Burkina Faso is the country where respondents were most likely to report incidents of death, sexual and physical abuse, and robbery during their 4Mi survey. However, respondents in Mali and Niger were respectively 1.3 and 3 times more likely to report extortion during their 4Mi survey than respondents surveyed in Burkina Faso. Respondents surveyed in Mali were 2.3 times more likely to report detention during their 4Mi survey than those surveyed in Burkina Faso. The city where the 4Mi survey was conducted was also a significant predictor for all protection incidents.</p>

6 It was not possible to isolate the extent to which the vulnerability reflected here is attributed to the "work" or to the "stopping." It may be that stopping along the journey for reasons besides work is also a predictor of vulnerability.

7 For descriptive and regression purposes, destination was divided into four categories: Europe, North Africa, Other Africa and Other.

8 The models focused first on the country, then on the city where the surveys took place. Afterwards, the city in which the 4Mi survey was carried out is used as a proxy for the migration route taken by the respondents. Further, just because an incident was reported in Burkina Faso doesn't necessarily mean it took place there.

9 When running regressions on survey location by country-level

1. Introduction

1.1 Towards a better understanding of refugee and migrant vulnerability

The *Principles and Guidelines, supported by practical guidance, on the human rights protection of migrants in vulnerable situations* elaborated by the Office of the High Commissioner for Human Rights (OHCHR), defines **migrant vulnerability as follows: “vulnerable migrants are migrants who are unable effectively to enjoy their human rights, are at increased risk of violations and abuse and who, accordingly, are entitled to call on a duty bearer’s heightened duty of care.”**¹⁰ This is also the definition used by the International Organization for Migration (IOM) in its Determinants of Migrant Vulnerability (DOMV) model.¹¹

Given the gaps in protection for people on the move who may not fall under a specific legal regime such as the 1951 Refugee Convention, IOM and OHCHR’s frameworks are designed to contribute to protection, assistance, and the promotion of rights of vulnerable migrants. In doing so, they recognize the interaction and importance of a range of personal, family, community, and structural factors which can play out at all stages of a migration process. OHCHR sees migrant vulnerability as a “foundational element of the human rights framework,” while emphasizing that “migrants are not inherently vulnerable, nor do they lack resilience and agency.” Resilience is crucial to IOM’s conception of vulnerability and is built into the DOMV. The International Centre for Migration Policy Development has also made a significant contribution to the wider conversation on vulnerability through its work on resilience.¹²

A recent study by the Independent Monitoring and Rapid Research and Evidence Facility (IMREF) on vulnerability¹³ also attempts to better understand the challenges linked to the use of a vulnerability framework for operational responses to the needs of people on the move along the Central Mediterranean Route. The report, which develops case studies in Ouagadougou and Agadez and builds on data collected by the Mixed Migration Centre (MMC) through its Mixed Migration Monitoring Mechanism Initiative (4Mi), finds that the longer people are on the move the more vulnerable they become.¹⁴ This mirrors the findings in this present study about the impact of journey duration on vulnerability.

MMC’s intention in undertaking this report is to further explore the concept of migrant vulnerability by seeking to isolate factors which could make people on the move in the West Africa region more susceptible to experiencing (and/or witnessing, in the case of migrant deaths and sexual assault) one or more types of abuse. The report’s starting point is a unique 4Mi dataset compiled from more than 10,000 surveys of migrants and refugees in transit through the Central Sahel over a two-and-a-half-year period, in which respondents reported 23,204 discrete protection incidents.

Whereas IOM and OHCHR’s frameworks propose characteristics that could make a migrant or refugee more vulnerable to future abuse and exploitation, and provide tools and principles for mitigation, this report analyses instances of abuse and exploitation that have already occurred and explores a selection of personal and journey related characteristics (the statistical models’ independent variables) of respondents who reported these incidents. Thus, the aim was to distil MMC’s vast evidence base into a detailed portrait of vulnerability as experienced in West Africa. This paper’s research findings align closely with the models elaborated by IOM and OHCHR; many of the characteristics the two agencies highlight correlate with increased susceptibility to protection incidents in the 4Mi dataset.

10 OHCHR/Global Migration Group (2016) [Principles and Guidelines, supported by practical guidance, on the human rights protection of migrants in vulnerable situations](#)

11 IOM (2019) [IOM Handbook on Protection and Assistance for Migrants Vulnerable to Violence, Exploitation and Abuse](#)

12 For example: Healy, C. (2019) [The Strength to Carry On - Resilience and Vulnerability to Trafficking and Other Abuses among People Travelling along Migration Routes to Europe](#) ICMPD.

13 IMREF (2020) [Report - Accessing the Most Vulnerable Migrants in Ouagadougou and Agadez](#)

14 See section 2.1 for details of 4Mi

1.2 A long history of mobility: West Africa's complex migration context

In undertaking this analysis, it is important to keep in mind West Africa's complex socio-cultural, political, legal, and security landscape. This context affects the protection challenges migrants and refugees may encounter while on the move through the region. It is also a factor in influencing their decision-making throughout the journey, which itself has pertinence for vulnerability.

West Africa is a region with an extremely mobile present and past. While economic considerations influence most West African migration, motivations for movement are frequently complex and multi-faceted. Migration in the region is underpinned by ethno-linguistic connections across borders, seasonal patterns of migration linked to agriculture and pastoralism, and migratory routes established under colonial rule (e.g. to coastal hubs such as Ivory Coast).¹⁵ West Africa is a region in which migration is frequently a way of life; in many places there is a strong culture of migration, which can imply social and community pressures to migrate.¹⁶

Most West African migration – approximately 75-80% – is intra-regional.¹⁷ While West Africans have also figured prominently in migration flows seeking to enter Europe through the Central and Western Mediterranean Routes, the numbers of West Africans arriving in Italy and Spain through irregular maritime journeys has decreased over the last few years. There is also significant West African migration occurring towards North Africa, to elsewhere on the African continent (e.g. to countries such as Gabon, Equatorial Guinea and Angola), to Gulf countries, and, more recently, an uptick in migration to the Americas.¹⁸

Migration within West Africa is, in theory at least, facilitated by the *Protocol relating to Free Movement of Persons, Residence and Establishment* adopted in 1979 by the Economic Community of West African States (ECOWAS).¹⁹ The protocol was intended to provide “complete freedom of movement” of its citizens within the territory of the 15-member bloc by extending them rights of entry, residence, and establishment of economic activities in a series of three phases. While important elements of the latter two rights remain to be realized, the phase-one goal of visa-free entry for up to 90 days has been legally enshrined by all ECOWAS countries. However, a lack of knowledge on the part of both officials and refugees and migrants themselves has meant that in practice, the promised free entry is not always respected. Unofficial fees are levied in many locations across the region.²⁰

Another important dynamic affecting migration across the region in recent years, which exists in tension with the ECOWAS objective of free movement, is a trend towards border externalization and securitization supported by the European Union and its individual member states.²¹ This has been characterized by a diversion of EU development aid to projects designed to “close borders [and] stifle migration”.²² According to the 2015 EU Agenda on Migration, “migration will become a specific component of ongoing Common Security and Defence Policy missions already deployed in countries like Niger and Mali, which will be strengthened on border management.”²³ One specific example of EU funding facilitating a securitized approach to migration is its support for the enforcement of Niger's *Loi 2015-36* (Law 2015-36). This effectively served to criminalize migrant smuggling in Niger, pushing it and related business activities underground and making migration in general more dangerous.²⁴

West Africa is also marked by two axes of long-term and intense insecurity: the Boko Haram insurgency in the Lake Chad Basin (with north eastern Nigeria as the epicentre, this conflict and its corresponding displacement radiates into Cameroon, Chad and Niger)²⁵ and the Central Sahel crisis. Conflict in the Central Sahel erupted in Mali in 2012, and has since spread into Niger and Burkina Faso, with the situation in Burkina Faso deteriorating alarmingly in recent years. The dynamics of this situation are extremely complex and fluid, with a range of variously affiliated armed groups at times striking against each other, but also frequently targeting civilians. A wide array of security actors is involved

15 Flahaux, M. & De Haas, H. (2016) [African migration: trends, patterns, drivers](#). Comparative Migration Studies.

16 MMC, REACH (2020) [Destined to migrate Exploring a culture of migration in a world of migration restrictions-Kayes, Mali](#)

17 Saferworld (2019) [Partners in Crime? The impacts of Europe's outsourced migration controls on peace, stability and rights](#)

18 Ibid.

19 ECOWAS member states are Benin, Burkina Faso, Cape Verde, Ivory Coast, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo.

20 Adepoju, A., Boulton, A. & Levin, M. (2007) [Promoting integration through mobility: free movement and the ECOWAS Protocol](#). UNHCR.

21 Uzelac, A. (2019) [Incoherent Agendas: Do European Union migration policies threaten regional integration in West Africa?](#) Clingendael; see also: Campbell, Z. (2019) [Europe's deadly migration strategy](#), Politico.

22 OXFAM (2020) [EU aid increasingly taken hostage by migration politics](#)

23 European Commission (2015) [A European Agenda on Migration](#)

24 Golovko, E. (2019) [Players of Many Parts - The evolving role of smugglers in West Africa's migration economy](#). Mixed Migration Centre.

25 International Crisis Group (2020) [The Boko Haram Insurgency](#).

in the response, including national security forces and coalitions from regional governments, UN peacekeepers and other international actors. There have also been reports of heavy-handed tactics utilized by security forces during counter-insurgency activities.²⁶

Forced displacement is consequently an extremely important aspect of migration in the region. Insecurity also may affect migratory journeys, given that security responses can have implications for movement (increase in checkpoints etc.), as can insecurity itself (armed groups preying on travellers). These dynamics may affect people en route and can impact the routes they choose. The Central Sahel states of Burkina Faso, Niger, and Mali are key countries of transit for migrants, which is why 4Mi monitors conduct surveys there.

1.3 Overview of the analysis

Against this contextual backdrop, which provides just a snapshot of the region's complicated migratory landscape, this report examines the extent to which various factors, or *independent variables*, affect the vulnerability of migrants and refugees to specific protection incidents, or *dependent variables*, namely: death, detention, extortion, kidnapping, physical abuse, robbery, and sexual assault or harassment. The independent variables examined in this report may be immutable (e.g. gender, origin), partially in the control of the migrant or refugee (spoken language), or determined by the migrant or refugee during their journey (use of smuggler, stopping to work while en route, intended destination, route).

In doing so, this report draws on past MMC research (the findings of which helped determine the selection of independent variables of primary interest) and advances it through logistic regression analysis to determine the effects of each of these variables when confounding factors (in other words, variables of secondary interest) are held constant. Previous research by the MMC and others has examined dangers²⁷ or protection risks²⁸ faced by migrants and refugees in transit in West Africa, at times seeking specifically to identify factors of vulnerability.²⁹ However, as far as the authors of this paper are aware, this is the first study to carry out a regression analysis of what characteristics may increase vulnerability to specific types of protection incident.

The findings of the regression analysis are set out for each selected independent variable in Section 3 of this report. The exploration of each variable begins with background information, drawn from previous MMC analysis and publications, complemented in some cases by other sources, which lays the foundation for a hypothesis (e.g., are women more likely to experience sexual assault?). This is followed by analysis of the full 4Mi dataset under evaluation (drawn from surveys conducted from June 2017 to December 2019) in relation to the variable in question. Descriptive statistics illustrate the percentage of respondents who have experienced each type of protection incident (e.g., the percentage of women who experienced sexual assault compared to men). The hypothesis is then tested through logistic regression. This allows for the identification of the extent to which the tendencies suggested by the descriptive statistics hold true when controlling for confounding variables (e.g., do women still experience more sexual assaults than men when age, journey duration, and interview city are controlled for)? In other words, the analysis strives to isolate the effect of the selected characteristics to the extent possible.

26 Dewast, L. (2020) [How West Africa is under threat from Islamist militants](#). BBC.

27 Molenaar, F. Tubiana, J. & Warin, C. (2018) [Caught in the middle: A human rights and peace-building approach to migration governance in the Sahel](#). Clingendael.

28 Charrière, F. & Frésia, M. (2008) [West Africa as a Migration and Protection area](#). UNHCR.

29 Bastide, L. (2017) [Mixed Migration in West Africa: Data, Routes and Vulnerabilities of People on the move](#). RMMS West Africa.

2. Methodology

2.1 The Mixed Migration Monitoring Mechanism Initiative

The data analysed in this study was gathered through the MMC's Mixed Migration Monitoring Mechanism Initiative (4Mi), a continuous data collection project. In West Africa, the data is collected by a network of monitors based in key transit hubs in Burkina Faso (Bobo Dioulasso, Dori, Kantchari), Mali (Ber, Gao, Kayes, Mopti, Timbuktu) and Niger (Agadez, Diffa, N'guigmi, Niamey, Tillabéry). All told, these 4Mi monitors survey an average total of 333 migrants and refugees every month, spending just over an hour on each questionnaire session.

Monitors are individuals who have been chosen based on their strong connections to the local context and migration-relevant networks. The bonds of trust they have established in their communities facilitate their access to people on the move. Monitors are trained in data collection skills specific to the 4Mi questionnaire and use of the mobile phone-based data collection platform, as well as general humanitarian principles.³⁰

Recognizing the role gender can play in putting respondents at ease and providing an environment conducive to sharing, the sampling approach also strives to ensure a strong representation of women. During their training, 4Mi monitors are encouraged to identify and survey female migrants. As of the time of writing, there were 37 monitors in the region, of whom ten were women.

Map 1. 4Mi data collection locations in West Africa



³⁰ Monitors do not themselves assess and refer respondents to assistance providers, however in 2019 4Mi piloted a system in Agadez for monitors to direct respondents in need to existing referral mechanisms, in partnership with other NGOs, which will be rolled out in other data collection cities.

2.1.1 Survey respondents

4Mi monitors survey adults on the move – regardless of their legal status – who have been in the country of survey for less than one year and have crossed an international border. Surveys are anonymous and confidential, and respondents give their informed consent before beginning. They have the right to withdraw at any time during the survey. Respondents are not paid for their participation.³¹

The dataset used in this report consists of responses by 10,338 migrants and refugees to surveys conducted between June 2017 and December 2019 at a range of migration hubs in 13 locations in Burkina Faso, Mali, and Niger (see list of locations and frequencies in Appendix C). Using purposive and snowball sampling, monitors selected respondents by spending time in locations where migrants and refugees are known to congregate, such as local cafes, hotels, bus stations and migrant assistance centres. Referrals by respondents themselves or by members of a monitor's network also contribute to recruitment.

Some 7,180 (69.5%) of these respondents were men and 3,152 (30.5%) women. The mean age was 28.8 years. Most respondents were single (63.8%), did not have children (54.1%), identified as Muslim (58.9%), and had an urban origin (85.5%). Most respondents were from ECOWAS countries (64%), with an intended destination elsewhere in Africa (48%) or in Europe (45%). About half (52%) were educated up to secondary school level. As to pre-journey employment, 24% were working as labourers, 18.5% in the service industry, and 22.9% were unemployed. Just over half (50.7%) did not use a smuggler during their journey. The average journey duration – from departure to time of 4Mi interview – per migrant was 161 days (median=15, mode=3).

2.1.2 Survey questionnaire

The 4Mi survey is an in-depth, structured, primarily close-ended questionnaire which asks people on the move to self-report on their personal profile, migration motivations and aspirations, journey characteristics, protection incidents experienced or witnessed, and the nature and scope of information possessed in relation to their migratory journey.

The majority of 4Mi surveys carried out in West Africa are conducted in French. For each respondent, monitors note the country and city where the survey took place (used in this report as a proxy for the **route** taken by the respondent) as well as their **gender**. The following are translations of the survey questions that frame the other independent variables explored in this report:

- What is your country of nationality? (Responses were used to determine **origin** and primary **language**)
- Have you used one or more **smugglers** to get to your current location?
- Why did you stop in this city/place? (This report focuses on those who selected “**Working to earn money** for next stretch of the journey” from a list of possible responses.)
- Which country is your preferred **final destination**?

The protection risks (this report's dependent variables) considered in the questionnaire are:

- Did you witness any migrant **deaths** during your journey?
- Did you witness or experience any **sexual assault or harassment** during your journey?
- Did you experience any **physical abuse or harassment** (of a non-sexual nature) during your journey?
- Have you been **kidnapped** or otherwise held against your will during your journey?
- Have you ever been **robbed** during your journey?
- Did you have to give government officials gifts, services or bribes during your journey? (This is denoted as **extortion** henceforth.)
- Have you been **detained** by the police, military, militia or immigration officials during your journey?

It is important to note that in most cases, the questions have a personal frame of reference, asking the respondent whether they themselves have experienced a particular type of protection incident. The exceptions are witnessing migrant deaths and *witnessing* or experiencing sexual assault or harassment, the latter so-phrased as to allow a respondent who does not feel comfortable divulging a personal experience the opportunity to report an incident at a further remove.

31 For more information on 4Mi and its methodology, see 4Mi [Frequently Asked Questions](#).

2.1.3 Limitations of survey data

Given that 4Mi's methodology is adapted to target people on the move – a population whose fluidity makes it both challenging to reach and difficult to count – 4Mi data collection uses a non-probability sampling approach, and therefore is not intended to be representative of the overall volume or characteristics of people on the move in the region.³² The extremely substantial sample size (10,338), however, does help to mitigate this limitation.

While this report seeks to capture key independent variables that could influence vulnerability, there may be other influencing factors that are not considered here, or not touched upon in the 4Mi survey itself. The independent variables of interest to this research were selected through consideration of earlier MMC studies, occasionally complemented by other sources, and thus have a basis in previous quantitative and qualitative analysis.

4Mi data may also be subject to response bias, as it is not possible to independently verify the responses of those who participate in the survey. Particularly in relation to protection incidents, which likely carry an element of trauma and may therefore be difficult to talk about, data may be subject to under-reporting. However, 4Mi monitors are trained and experienced in building trust with respondents and making them feel comfortable, which should lessen this effect.

One other limitation to bear in mind is that all 4Mi surveys in West Africa take place before the most significant desert crossing for those going north. While it is challenging to ascertain the full scope of protection incidents that occur in the Sahara, the harsh environment, general conditions of banditry and lawlessness, and the necessity to rely on smugglers make for an extremely dangerous crossing.³³ However, any protection incidents that occur in the desert after respondents have passed Agadez in Niger, or Gao or Timbuktu/Ber in Mali, are not captured in the 4Mi West Africa data.³⁴ In a similar vein, if a respondent falls victim to a protection incident in any city of survey after the survey has taken place, it will of course not be captured in the data.

Despite the limitations mentioned above, the unique and substantial nature of the 4Mi dataset affords the opportunity to undertake analyses which contribute important insights to the conversation on migrant vulnerability. To the best of the authors' knowledge, it is the first time that such a comprehensive assessment of the factors of vulnerability for people on the move has been conducted in West Africa.

2.2 Data analysis

4Mi data was exported and prepared for analysis. One new variable was computed (journey duration), and several variables were recoded (for example, nationalities were grouped in three categories), as will be explained in detail below in relevant sections. The number of observations and missing values for each variable are reported in Appendix A, and descriptive statistics of all variables used in analyses are reported in Appendices B to E. For all incidents, respondents who declined to answer were recoded as missing data. Extreme outliers (defined as observations that deviated more than three times the interquartile range) were discarded from analyses. Finally, respondents who reported more than one intended destination (or who were undecided) were discarded from analyses when using destination as a predictor.

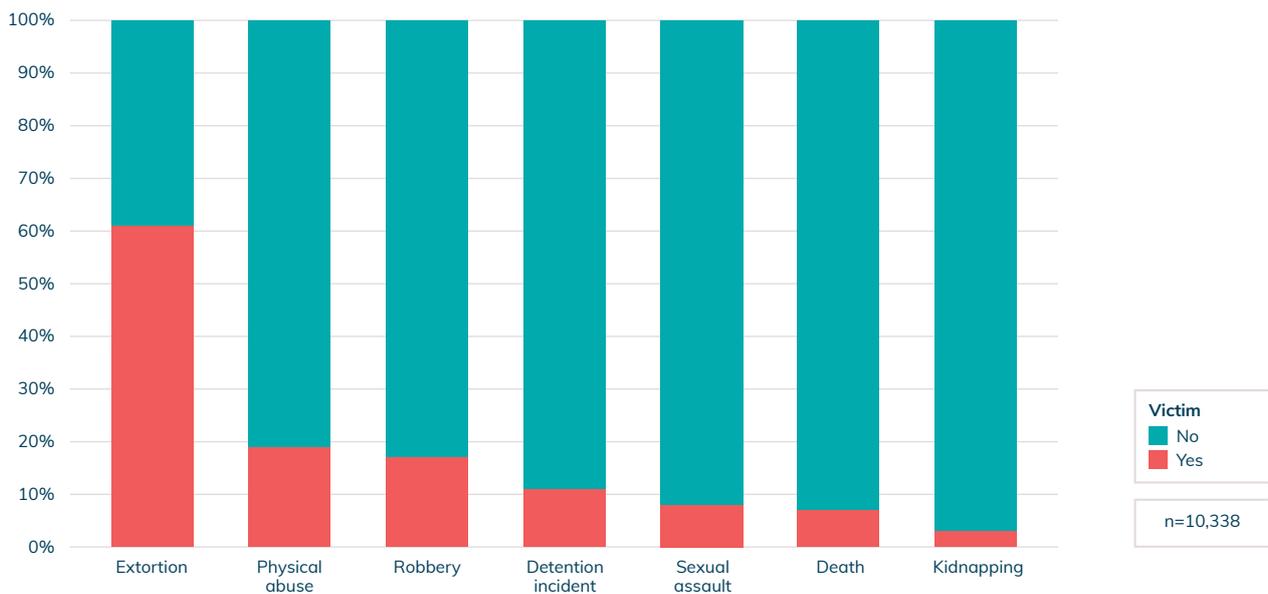
The first step in analysing the 4Mi dataset was to tally the prevalence of protection incidents reported by all survey respondents within the timeframe under review. As shown in Figure 1 below, the most frequently reported incident was extortion, with 61.2% of respondents reporting that they had experienced it at least once during their journey up to the point they completed the survey. All other incident types were reported by less than a fifth of respondents, with 19.1% reporting physical abuse, 16.8% robbery, 11.1% detention, 8% sexual abuse, 6.7% witnessing the death of a migrant or migrants, and 2.6% kidnapping.

32 MMC (2019) [Frequently Asked Questions \(FAQ\)](#)

33 Miles, T. & Nebehay, S. (2017) [Migrant deaths in the Sahara likely twice Mediterranean toll: U.N.](#) Reuters.

34 However, these are captured through 4Mi data collected in North Africa and Europe. MMC North Africa has conducted a parallel analysis on determinants of vulnerability: Mixed Migration Centre (2020) [op. cit.](#)

Figure 1. Reported protection incidents, by type (% of 4Mi respondents)



2.2.1 Assessing influence through regression analysis

In order to gauge whether and the extent to which the selected independent variables could serve as predictors of a migrant or refugee experiencing (or in some cases witnessing) a given protection incident, the 4Mi data were analysed using **binomial logistic regression**.³⁵

The 10 control variables used in the modelling fall into four categories:

1. **Demographics:** gender (where relevant)³⁶, age, and religion
2. **Family:** number of children, and marital status
3. **Social status:** education level, employment in country of origin, and urban vs. rural origin
4. **Other:** journey duration, and survey location (where relevant)

³⁵ Across all analyses, the lowest tolerance value observed was 0.65, whereas the highest variance inflation factor (VIF) observed was 1.52, meaning that there were no multicollinearity issues.

³⁶ In this analysis gender and survey location are used as control variables and as independent variables. They are not included as control variables in the models in which they are assessed as independent variables.

3. Findings

This section explores and assesses the predictive value of seven independent variables,³⁷ in each case setting out some brief background drawn mostly from previous MMC research, positing a hypothesis, illustrating the percentage of respondents for a given independent variable who have reported experiencing protection incidents (henceforth “descriptive statistics”), and summarizing the conclusions of the regression analysis.

Two MMC documents, *4Mi Snapshot on Protection incidents and levels of assistance for people on the move in Mali, Niger and Burkina Faso*, published in September 2019 (hereafter “the Protection Snapshot”) and *Navigating borderlands in the Sahel: Border security governance and mixed migration in Liptako-Gourma*, published in November 2019, (hereafter “Navigating borderlands”) are the main sources for the background material.³⁸ The Protection Snapshot is based on data gathered between October 2018 and March 2019 across all 13 4Mi data-collection locations across the region; Navigating borderlands on data gathered between July and December 2018 in the three 4Mi data-collection locations in the Liptako-Gourma (Dori (Burkina Faso), Gao (Mali), Tillabéry (Niger)).

Map 2. Liptako - Gourma area



Source: <https://issafrica.org/iss-today/insecurity-in-the-sahel-wont-be-solved-at-high-level-summits>

Table B below provides a summary of the background and hypotheses related to each independent variable.

37 The independent variable “survey location” was analysed both at country and city levels.

38 MMC (2019) *MMC West Africa 4Mi Snapshot September 2019*; Raineri, L. & Golovko, E. (2019) *Navigating borderlands in the Sahel: border security governance and mixed migration in Liptako-Gourma*. Mixed Migration Centre.

Table B: Summary of background information and hypotheses

Independent variable	Background ³⁹ (M&Rs = migrants and refugees)	Hypothesis
Gender	Across West Africa, a greater proportion of women M&Rs than men experience all types of protection incident (except detention and kidnapping) – by a factor of four in the case of sexual assault. ⁴⁰ This disparity is even more pronounced in the Liptako-Gourma region, where one in five female 4Mi respondents reported sexual assault, compared to one in a hundred males. ⁴¹	Women are more vulnerable than men to certain types of protection incident, especially sexual abuse.
Country of origin	Foreigners paid larger extortion fees at checkpoints in Liptako-Gourma and these discrepancies were generally larger in the case of citizens from outside the region's three states and from non-ECOWAS countries. ⁴² Almost all M&Rs who report discrimination by security forces attribute this to their (foreign) nationality. ⁴³ This may go beyond mere xenophobia: M&Rs who have travelled far may lack documentation and local troubleshooting know-how.	People on the move from countries outside the Central Sahel are more likely to be exposed to protection incidents in general than those from within the region.
Language	The absence of language barriers is a major boon for M&Rs in many ways, from understanding signage and spoken instructions to asking locals for help. While dozens of languages are spoken in countries with high rates of protection incidents (Mali, Burkina Faso Niger), French is also widely used (taught at school, used in officialdom) in these and other former French colonies. This common language likely mitigates risks when transiting Francophone countries.	Migrants and refugees originating from non-Francophone countries will be more vulnerable to protection incidents than those from Francophone countries when travelling through Burkina Faso, Mali, and Niger.
Use of smugglers	Contrary to dominant narratives that vilify smugglers as predatory, exploitative players in organized international criminal networks, the precise role of smugglers in M&Rs' journeys and the extent to which smugglers are responsible for protection incidents varies widely, notably by location. ⁴⁴ But even if not all smugglers are abusive, the use of smugglers tends to occur in high-risk environments, and may correlate with increased exposure to protection incidents (even if this is not necessarily a causal relationship). ⁴⁵	Whether a migrant or refugee engages a smuggler is a useful predictor of their likelihood of experiencing or witnessing protection incidents.
Stopping for paid work	Stopping to work to fund future travel may affect vulnerability to protection incidents. ⁴⁶ For women and girls in particular, sex work may be the only, or the most accessible option, and such "survival sex" is inherently risky. Exclusion from formal labour markets increases exposure to dangerous jobs and to human trafficking. ⁴⁷	Refugees and migrants who interrupt their journeys to obtain work to fund onward travel may be particularly vulnerable to protection incidents, particularly sexual or physical abuse which could be linked to dangerous work or to trafficking and exploitation
Intended destination	Intended destinations may serve as predictors of vulnerability to several protection incidents, including detention. ⁴⁸ M&Rs intending to reach Europe may have a distinct profile. ⁴⁹	Refugees and migrants on the move in West Africa who intend to reach Europe face a higher risk of protection incidents than those with other intended destinations.
Location	The number of reported protection incidents vary considerably by country; in several previous analyses, Mali had higher numbers than Burkina Faso or Niger across multiple categories of incident, notably detention. ⁵⁰ This suggests vulnerability may vary by route. While 4Mi data offers only limited information on precise routes taken, assumptions drawn from survey locations help bridge this gap.	Migrants and refugees who travel through the more northern cities where 4Mi surveys are conducted will show a greater vulnerability to protection incidents, and this trend is magnified in Mali.

39 Unless otherwise specified, all trends in this column relate to migrants and refugees on the move in West Africa. Incidents of sexual assault may have been witnessed as well as directly experienced.

40 MMC (2019) [MMC West Africa 4Mi Snapshot September 2019](#).

41 Raineri, L. & Golovko, E. (2019) [op.cit.](#)

42 Ibid.

43 Ibid.

44 MMC (2019) [MMC West Africa 4Mi Snapshot September 2019](#); Golovko, E. [op.cit.](#)

45 Raineri, L. & Golovko, E. (2019) [op.cit.](#)

46 Ibid.

47 David, F. Bryant, K. & Larsen, J. (2019) [Migrants and their vulnerability to human trafficking, modern slavery, and forced labour](#), IOM

48 Mixed Migration Centre (2020) [op.cit.](#); Lichtenheld, A. (2019) [What makes refugees and migrants vulnerable to detention in Libya? A microlevel study of the determinants of detention](#), Mixed Migration Centre,

49 MMC key informant interviews in West Africa.

50 MMC (2020) [Detention of migrants and refugees in Mali, Burkina Faso, and Niger](#); MMC (2019) [MMC West Africa 4Mi Snapshot September 2019](#).

3.1 Gender: varying vulnerabilities

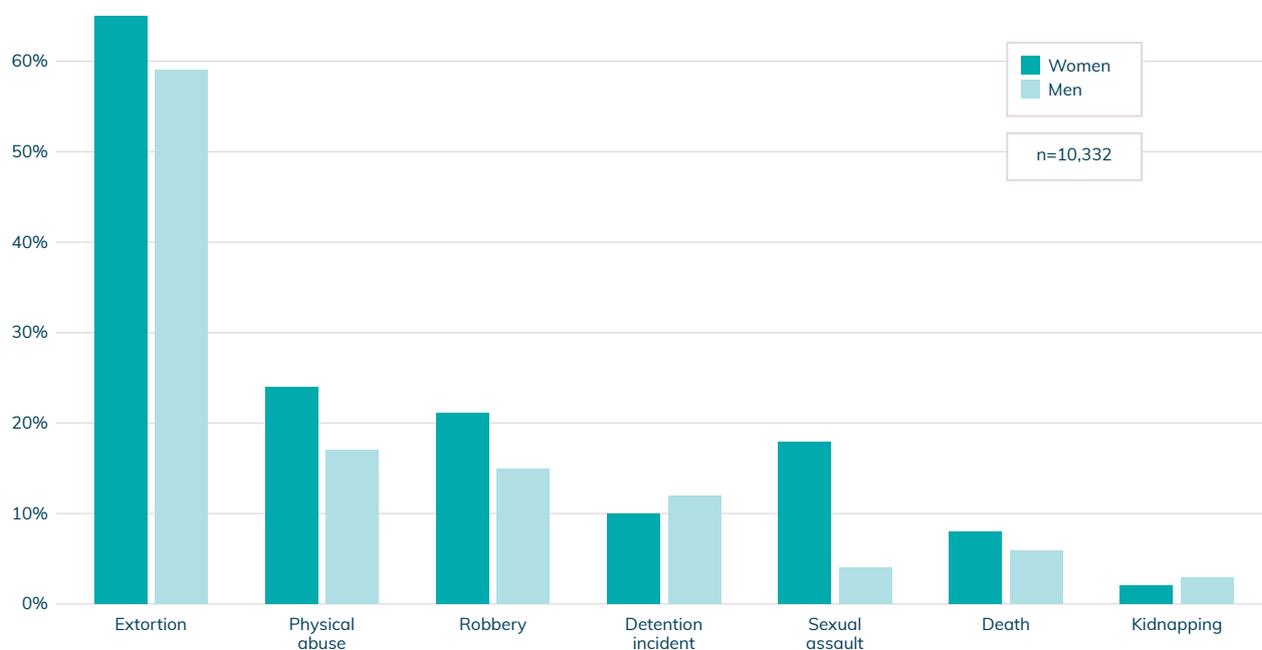
Men and women on the move in West Africa report experiencing or witnessing specific protection incidents to different degrees. In the *Protection Snapshot*, the percentage of female respondents who reported experiencing or witnessing a particular protection incident was greater than the percentage of male respondents across all incident types except detention and kidnapping. There was a particularly large difference with regard to physical abuse and sexual assault, with the proportion of females reporting the latter approximately four times greater than that of males.

This trend was echoed, and in several cases even more pronounced, in *Navigating borderlands*, which focussed on a region – the Liptako-Gourma – that straddles the borders of Burkina Faso, Niger and Mali. It showed a greater percentage of female respondents reporting having witnessed or experienced all types of protection incident with the exception of extortion, which was reported by 50% of both male and female respondents.⁵¹ The disparity was particularly pronounced in several categories of protection incident, with 20% of female respondents reporting having witnessed or experienced sexual assault, compared to 1% of male respondents; 25% of female respondents reporting having experienced physical abuse compared to 5% of male respondents; and 23% of female respondents reporting having experienced robbery compared to 9% of male respondents.

Hypothesis: women are more vulnerable than men to certain types of protection incident, especially sexual abuse.

The 4Mi descriptive statistics for the period of June 2017-December 2019, summarized in Figure 2 below, also bear out this gender gap. Reinforcing the findings of the *Protection Snapshot*, they show that a greater proportion of female respondents reported that they had witnessed or experienced all incident types except for detention and kidnapping. Once again, the difference is particularly striking when it comes to sexual assault, with 18% of female respondents reporting having witnessed or experienced this incident, as compared to 4% of male respondents.

Figure 2. Reported protection incidents, by type and gender (% of 4Mi respondents)



51 Raineri, L. & Golovko, E [op cit.](#)

Analysis of the 4Mi data using **logistic regression**, controlling for confounding variables confirms that:⁵²

- **The gender of a refugee or migrant is a significant predictor** of whether they will witness or experience protection incidents of all types, except death and kidnapping. More specifically:
- **Women are more likely to witness or experience sexual assault, physical abuse, and robbery than men – in the case of sexual assault, by a factor of 4.1.**
- **Men are more likely to experience detention and extortion than women.** Although a higher proportion of female than male 4Mi respondents reported experiencing incidents of extortion (see Figure 2), regression analysis that controls for confounding factors shows that men are in fact 1.5 times more likely to experience extortion than women.

3.2 Country of origin: grounds for discrimination

Findings from *Navigating borderlands* suggested that people on the move in the Liptako-Gourma region were often subjected to higher informal fees when passing a checkpoint if they were nationals of a country other than that in which the checkpoint was located. The extent to which the fee (in other words, the amount extorted) increased, appeared to be influenced by the person's region of origin, with those from other Liptako-Gourma states paying less than those from non-neighbouring or non-ECOWAS countries. Of respondents who felt they had been discriminated against by security forces, 85% indicated that nationality was the primary ground for discrimination.

This could be attributed to a variety of factors, such as lower social capital or lack of relevant documentation (although it is important to note that *Navigating borderlands* also found some respondents with valid ECOWAS identity cards who were forced to pay higher rates than locals at checkpoints), and these same factors could increase vulnerability to other types of protection incident as well. For instance, a person unfamiliar with the environment and norms in a particular location may be less equipped to avoid potentially dangerous situations, and a person without appropriate documentation may be subject to abuses besides or in addition to extortion as they try to navigate borders and checkpoints.

Hypothesis: people on the move from countries outside the Central Sahel are more likely to be exposed to protection incidents in general than those from within the region.

For the purpose of this analysis, countries of origin are grouped into three categories:

- The **Central Sahel** comprises the three West African countries where 4Mi data is collected (and which are the focus of *Navigating borderlands*): Burkina Faso, Niger and Mali. Around 82% of protection incidents reported by 4Mi respondents occurred within these three countries.
- **Other ECOWAS** denotes all members states of the bloc except the Central Sahel states mentioned above and Cape Verde (which was not identified as a country of origin by any respondent).⁵³
- **Other** denotes Algeria, Cameroon, Central African Republic, Chad, Congo, Gabon, Libya, Other, Mauritania, South Sudan, Sudan and other countries not listed here but mentioned as country of origin by very small numbers of respondents.

The descriptive statistics show that a lower percentage of respondents originating from countries in the Central Sahel reported witnessing or experiencing protection incidents (of all types) than those from the other two geographical categories. In turn, the percentage of respondents who came from Other ECOWAS countries who reported witnessing or experiencing protection incidents was lower than that of respondents from Other countries across all types of protection incident, except for physical abuse and sexual assault, in which cases they both differed by only one percentage point.

⁵² See Table 1 in Appendix A for statistical details.

⁵³ Benin, Ivory Coast, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Nigeria, Senegal, Sierra Leone and Togo.

Figure 3. Reported protection incidents, by type and country of origin (% of 4Mi respondents)



An analysis of the 4Mi data using **logistic regression** and controlling for confounding variables confirms that:⁵⁴

- **The country of origin of refugees and migrants is a significant predictor of all types of protection incident** with a remarkably similar pattern between the groups.
- **Refugees and migrants originating from Other ECOWAS states and Other countries are more likely to experience incidents than respondents from the Central Sahel.**
- **Refugees and migrants from Other countries are more likely to experience protection incidents than respondents from Other ECOWAS states, with the exception of extortion.**

An example of the pattern described above is seen in the fact that, respondents from Other ECOWAS and Other countries were, respectively, 1.5 and 2.4 times more likely to report sexual assault than those from the Central Sahel. In turn, in another model comparing Other ECOWAS and Other countries, respondents from Other countries were 1.6 times more likely than those from Other ECOWAS countries to report sexual assault. This is another example in which the regression analysis, which controls for confounding variables, helps to draw a more nuanced conclusion than the descriptive statistics alone.

3.3 Language: *parlez-vous français?*

Language is an aspect of social capital that could influence risk of exposure to protection incidents. The ability to easily communicate is a useful tool when traveling in an unfamiliar location, and may allow one to absorb verbal and visual cues from ambient conversations and written signage, ask for advice and help from locals, and understand requests or orders from officials and negotiate with them more effectively.

⁵⁴ See Table 2 in Appendix A for statistical details

As noted above, the majority of protection incidents in this 4Mi sample were reported to have occurred in the Central Sahel countries of Burkina Faso, Niger and Mali. While a variety of local languages are spoken across these three countries, they share a colonial legacy, and French is their official language of administration and a primary language of formal education.

For the purpose of this analysis, Francophone countries⁵⁵ were defined as countries which identify French as an official language as well as Algeria and Guinea-Bissau. Algeria has a French colonial legacy, and French is used significantly in administration and education, and widely understood. Although it is a former Portuguese colony and predominantly Lusophone, Guinea-Bissau is a member of the Francophonie organization and teaches French in schools.

Of course, there are multiple local languages and dialects that are also spoken across borders in the West African region more broadly, but 4Mi survey data does not lend itself to analysis at that level of detail. Still, it is safe to say that a person who originates from a Francophone country will have an easier time communicating in another Francophone country than someone who is not from a country in which French is widely spoken. This may help them mitigate risks in transit through the three Francophone 4Mi countries.

Hypothesis: migrants and refugees originating from non-Francophone countries will be more vulnerable to protection incidents than those from Francophone countries when travelling through Burkina Faso, Mali, and Niger.

The descriptive statistics show that a greater proportion of respondents from non-Francophone countries reported all types of protection incident (with the exception of kidnapping, which was equal at 3%), than respondents who do originate from Francophone countries. There is particularly notable disparity when it comes to extortion, with 72% of respondents who originate from non-Francophone countries reporting that they had experienced this kind of incident as compared to 58% of respondents from Francophone countries.

Figure 4. Reported protection incidents, by type and language of country of origin (% of 4Mi respondents)



55 Francophone: Algeria, Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Congo, Ivory Coast, Gabon, Guinea, Guinea Bissau, Niger, Mali, Senegal, Togo.
Non-Francophone: the Gambia, Ghana, Liberia, Libya, Nigeria, Other, Sierra Leone, South Sudan, Sudan

The **regression analysis**, by controlling for confounding variables, shows that:⁵⁶

Refugees and migrants travelling from non-Francophone countries are more likely to witness or experience a range of protection incident types, including death, sexual assault, robbery, and extortion. More specifically:

Such refugees and migrants are **1.6 times more likely to** report **extortion** than respondents from Francophone countries.

However, whereas a greater proportion of respondents who originate from non-Francophone countries reported physical abuse and detention (see Figure 4), after controlling for confounding variables, the regression analysis shows that **whether a refugee or migrant comes from a Francophone country is not a significant predictor of exposure to physical abuse, detention and kidnapping.**

3.4 Use of smugglers: risky business

Smugglers are often portrayed in the media and political discourse as operating within large-scale, transnational criminal networks which include human traffickers and which organise and oversee every stage of migrants' journeys, with a black-and-white picture of smugglers as predators and people on the move as prey.⁵⁷ While some smugglers do indeed take advantage of the vulnerable refugees and migrants with whom they interact, MMC West Africa data and research supports a more nuanced perspective that acknowledges the often complicated dynamics of these relationships.⁵⁸

MMC research focusing specifically on smuggling has found that the role smugglers play as perpetrators of protection incidents varies greatly from place to place. The MMC paper *Players of Many Parts: The evolving role of smugglers in West Africa's migration economy*, found that 45% of the protection incidents reported by respondents in Niger from August 2017 to August 2018 were attributed to smugglers, as opposed to only 6% of incidents in Mali.⁵⁹ In a later examination of this issue, also including data from Burkina Faso, the *Protection Snapshot* found smugglers were reported to be the perpetrators in less than 10% of overall reported protection incidents during the period under consideration (the proportion for incidents of sexual assault was 7%, physical abuse 5%, and migrant deaths 4%). This put smugglers behind other perpetrators such as unidentified individuals, security forces, criminal gangs, other migrants, and border guards.

However, regardless of whether a smuggler plays a direct role in perpetrating a protection incident, the use of smugglers generally implies that a journey is being undertaken irregularly, and, by extension, in a climate of increased risk. *Navigating borderlands* found that the widespread extortion of migrants and refugees in the Liptako-Gourma region could lead people on the move – especially those from outside the Central Sahel region – to resort to the use of smugglers in order to avoid border checkpoints where they feared being subjected to extortion. This in turn can expose people to heightened risk of other types of protection incident.

Thus, previous MMC research has suggested two somewhat countervailing tendencies – on one hand, the finding that on average smugglers are not one of the more significant perpetrators of incidents of protection, and on the other hand, the suggestion that use of smugglers is often an indicator of a more irregular, and correspondingly more dangerous, route.

Hypothesis: Whether a migrant or refugee engages a smuggler is a useful predictor of their likelihood of experiencing or witnessing protection incidents.

Almost exactly half of respondents (50.7%) in the main 4Mi dataset reported having used smugglers during their journey up to the point of completing the survey. As shown in Figure 5 below, in almost all categories, a higher

56 See Table 3 in Appendix A for statistical details

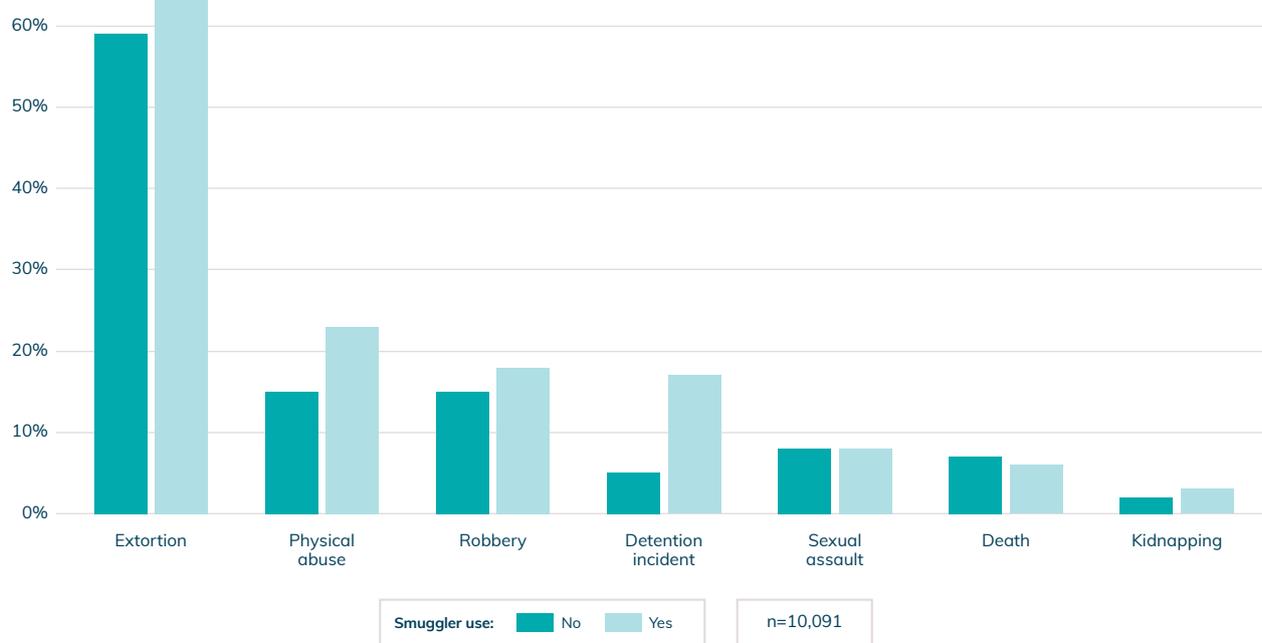
57 European Commission (2015) [A European Agenda on Migration](#); UN Office on Drugs and Crime (2020) [Smuggling of migrants: the harsh search for a better life](#).

58 Golovko, E. (2019) [Players of many parts: The evolving role of smugglers in West Africa's migration economy](#), MMC.

59 Golovko, E. (2019) [op.cit.](#)

proportion of respondents who used smugglers reported witnessing or experiencing protection incidents as compared to respondents who did not use smugglers. The exceptions were witnessing migrant deaths, reported by a slightly higher proportion of those who did not use smugglers (7% vs 6%), and witnessing experiencing sexual assault, where the percentage was 8% in both cases. The difference in reporting was particularly pronounced with regard to detention, cited by 17% of respondents who also reported using a smuggler, as compared to 5% of those who had not.

Figure 5. Reported protection incidents, by type and use/non-use of smugglers (% of 4Mi respondents)



By controlling for a range of confounding variables, **regression analysis** of 4Mi data suggests that:⁶⁰

- **Use of smugglers by refugees and migrants is a useful predictor of their likelihood of experiencing protection incidents of all types (except kidnapping) although it does not follow that the smuggler is necessarily responsible for these incidents, but that smuggler use is one of the factors increasing risks.**
- **Respondents who reported using smugglers were subjected to extortion and detention in greater proportions than those who did not use smugglers, by factors of 1.8 and 3.6 respectively.** Previous MMC West Africa research had suggested that migrants and refugees may use smugglers specifically to avoid extortion at (border) crossing points. There may also be a similar linkage to detention, as the 4Mi Detention Snapshot⁶¹ found that 74% of respondents who reported having been detained indicated that the reason given for their detention was “irregular entry into the territory.”⁶² To the extent that refugees and migrants use smugglers to facilitate smooth border crossings, and to evade two types of protection incident which appear to be strongly connected to these crossings, the results of the regression analysis suggest that this investment may not pay off. On the other hand, it is also possible that those who have been extorted or detained will be more likely to engage the services of a smuggler in future to avoid a repeat of the experience.
- While the raw 4Mi data shows that the percentage of respondents who report sexual assault is the same regardless of whether they used a smuggler (see Figure 5), the regression analysis, by controlling for a range of other variables, notably gender, shows that **the probability of experiencing or witnessing sexual assault is greater among those who use smugglers.**

60 See Table 4 in Appendix A for statistical details.

61 MMC West Africa (2020) [Detention of migrants and refugees in Mali, Burkina Faso, and Niger](#).

62 Respondents who had been detained had used smugglers during their journey at a much higher rate (81%) than those who did not report being detained (36%).

3.5 Breaking journeys for paid work: myriad pitfalls

Key informants interviewed during the research for Navigating borderlands suggested that stopping to work while in transit to raise money to continue a journey may be a factor of vulnerability for people on the move. As one key informant stated, “Today the town of Gao (in Mali) is filled with girls from Guinea, Ivory Coast and Burkina Faso who have failed at migration. They work in Gao in the restaurants as waitresses and others engage in prostitution.” According to another, “We often have Ivorian girls who come here and then remain in Dori (in Burkina Faso) to become prostitutes. I do not know if it’s for lack of money to continue their journey, or if it is the job they decided to do here, looking for new customers.” These quotes underscore the likelihood that accessible work while en route may be particularly risky, as survival sex clearly is.⁶³

An IOM study on vulnerability to human trafficking elaborates certain risk factors that also seem to apply to the type of protection incident under review in this paper.⁶⁴ For instance, it notes that a person in transit “may be stuck/stranded without funds, have limited options to earn funds, may be excluded from the legal labour market, (and) experience longer stays which permit more risk/desperation.” These factors by themselves could encourage someone to undertake dangerous labour, and/or may push someone into a situation of exploitation.

Hypothesis: refugees and migrants who interrupt their journeys to obtain work to fund onward travel may be particularly vulnerable to protection incidents, particularly sexual or physical abuse which could be linked to dangerous work or to trafficking and exploitation.

The descriptive statistics show that a greater proportion of respondents who stopped to work along their journey to fund subsequent legs (hereafter, “stop to work”) reported protection incidents of all types than respondents who did not stop to work (“no work”). For example, witnessing or experiencing sexual assault (stop to work:14%; no work: 4%), witnessing death (stop to work:11%; no work: 4%), experiencing robbery (stop to work: 27%; no work: 10%) and experiencing physical abuse (stop to work: 27%; no work: 14%) were all cited by a substantially greater proportion of respondents who stopped to work en route, which seems to support the above hypothesis.

The disparity is less pronounced in the cases of detention and extortion, which could be attributed to the fact that these incidents tend to be associated with crossing borders, and therefore have an inherent linkage to mobility. It is also less substantial in the case of kidnapping.

Figure 6. Reported protection incidents, by type and whether paid work sought en route (% of 4Mi respondents)



63 Brunovskis, A. & Surtees, R. (2017) [Vulnerability and exploitation along the Balkans route: Identifying victims of human trafficking in Serbia](#). FAFO.

64 David, F. Bryant, K. & Larsen, J. (2019) [op.cit.](#)

By controlling for the confounding factors, the **regression analysis** echoed the trend described above, suggesting that:⁶⁵

- Respondents who stop to work to fund the next stretch of their journey are more likely to witness or experience most types of protection incidents (with the exception of extortion and kidnapping) than those who keep moving.
- Those who stopped to work along the way are 2.4 times more likely to report sexual assault, 2.1 times more likely to report robbery, 1.9 times more likely to report witnessing migrant deaths and 1.8 times more likely to report physical abuse.
- The findings of the regression analysis seem to uphold the hypothesis that **while stopping to work along the route increases vulnerability to protection incidents, its effect is greater in relation to incidents which are less linked to movement.**
- Caveat: it is important to recall that the variable being analysed here is “stopping to work along the route.” While the analysis was motivated by the assumption that people on the move may be more susceptible to engaging in work in informal settings, with few safeguards, more dangerous tasks, and possibly in the context of trafficking, it was not possible to isolate the extent to which the vulnerability reflected here is attributed to the “work” or to the “stopping.” **It may be that stopping along the journey for reasons besides work is also a predictor of vulnerability.** Thus it would be useful to undertake further research/analysis to try to pinpoint further to what extent vulnerability is linked to being in one place for a longer period of time, and to what extent it is linked to working in potentially risky circumstances.

65 See Table 5 in Appendix A for statistical details.

3.6 Intended destination: the perils of Europe?

The paper *What makes refugees and migrants vulnerable to detention in Libya? A microlevel study of the determinants of detention*,⁶⁶ published by MMC North Africa, found that a respondent’s intended destination was a predictor of vulnerability to detention. A subsequent study, similar and conducted in parallel to the current one on West Africa, looking at determinants of vulnerability to protection incidents more broadly⁶⁷ suggests that this factor is also significant for experiencing or witnessing other protection incidents. While the circumstances in Libya are such that a linkage between destination and detention is quite clear – those who set off in boats to cross to Europe are often put into detention following interception at sea – discussions with migration actors in the region indicate that the profile of those with an intended destination in Europe may be somewhat distinct.

Hypothesis: Refugees and migrants on the move in West Africa who intend to reach Europe face a higher risk of protection incidents than those with other intended destinations.

The descriptive statistics shown in Figure 7 illustrate that a higher proportion of respondents who indicated Europe as their preferred destination reported witnessing or experiencing protection incidents of all types (with the exception of sexual assault, reported by a slightly higher proportion of respondents who indicated an “Other” destination in Africa – 9% vs 8%). This was particularly true for extortion (reported by 74% of respondents for whom Europe was the preferred destination), physical abuse (26%) and robbery (20%). In all three of these categories, respondents who had indicated “Other” (i.e. a destination outside of Africa or Europe) had the second highest percentage of reporting these incidents. This pattern also holds true for respondents indicating that they had witnessed the death of a migrant or migrants, although the percentages are smaller. The fourth most reported category was that of detention, showing a very small difference in proportion between respondents intending to go to Europe (14%) and those intending to go to North Africa (13%).

Figure 7. Reported protection incidents, by type and intended destination (% of 4Mi respondents)

(N=8,380)



66 Lichtenheld, A. (2019) [op.cit.](#)

67 Mixed Migration Centre (2020) [op.cit.](#)

By controlling for the confounding variables, the **regression analysis** found that:⁶⁸

- **Intended destination is a significant predictor of whether migrants and refugees will experience or witness all types of protection incident**, however not between all groups, and not always in the same direction.
- **Those headed for countries in North Africa, other African states, or countries outside Africa (but not in Europe) are all significantly less likely to experience robbery than those intending to end their journeys in Europe.**
- **Those destined for North Africa are less likely to experience physical abuse and kidnapping than those whose destination is in Europe** (results were not significant for “Other Africa” or “Other”).
- By contrast, **those whose destination is in North Africa are 1.5 times more likely to experience detention than those whose destination is in Europe.**
- **Those whose destination is in North Africa are 1.7 times more likely to report sexual assault**, but only in comparison with those whose destination is countries outside both Africa and Europe.

It could be surmised that differences in intended destination may somehow correlate to, for instance, a respondent’s profile, their route, and their attitude to risk. However, as the regression analysis attempts to control for profile and route (see Section 2.2.1), these seem to be largely ruled out (bearing in mind of course that some profile characteristics may not be captured in the controls, and that using the city where a respondent was surveyed as a proxy for their route may be inexact or missing some elements) as a means to further interpret the findings of the regression analysis. **These findings do not appear to provide a clear pattern that allows for a straightforward explanation based on an easily distinguishable profile characteristic that may unite respondents with a particular destination.** The regression analysis also presents a somewhat more complicated pattern than that illustrated in Figure 7 above.

A possible explanation for the increased vulnerability to robbery on the part of respondents for whom Europe is the intended destination might be that they are presumed to carry more money, as a journey to Europe is likely to cost more than one within the African continent. On the other hand, respondents who indicate that their intended destination is North Africa might be more likely to have taken a route – for instance through northern Mali – in which detention appears to be a greater risk (see Section 3.7.2). Or, they might be more likely to have used a smuggler, which also correlates with increased vulnerability to detention (see Section 3.4). Thus, the examination of intended destination as a determinant of vulnerability seems to invite additional analysis to further pinpoint the factors that contribute to this vulnerability.

3.7 Survey location: a useful proxy for migration route

Previous MMC research has shown variations between countries in the numbers and types of protection incidents reported by 4Mi respondents. One quite distinct example of this is found in *4Mi snapshot: Detention of migrants and refugees in Mali, Burkina Faso and Niger* (based on 3,094 surveys) which shows that from June to November 2019, 74% of incidents of detention affecting 4Mi respondents in West Africa were reported to have occurred in Mali, compared to 7% for both Burkina Faso and Niger).⁶⁹ The broader *Protection Snapshot* that focuses on a range of protection incidents found that from October 2018 to March 2019 more instances of witnessing migrant deaths, witnessing or experiencing sexual assault, and experiencing physical abuse were reported to have taken place in Mali (515) than in Burkina Faso (271) or Niger (99).⁷⁰

Both of these snapshots are based on data gathered over a six-month period, and given the statistically non-representative nature of 4Mi sampling, they should not be seen as necessarily indicative of a wider trend, nor can they be extrapolated to represent the entirety of protection incidents occurring in a given country. However, the findings do suggest that notable differences exist between countries of transit in terms of a person’s exposure to particular protection incidents, and that their vulnerability may therefore vary depending on their route.

68 See Table 6 in Appendix A for statistical details.

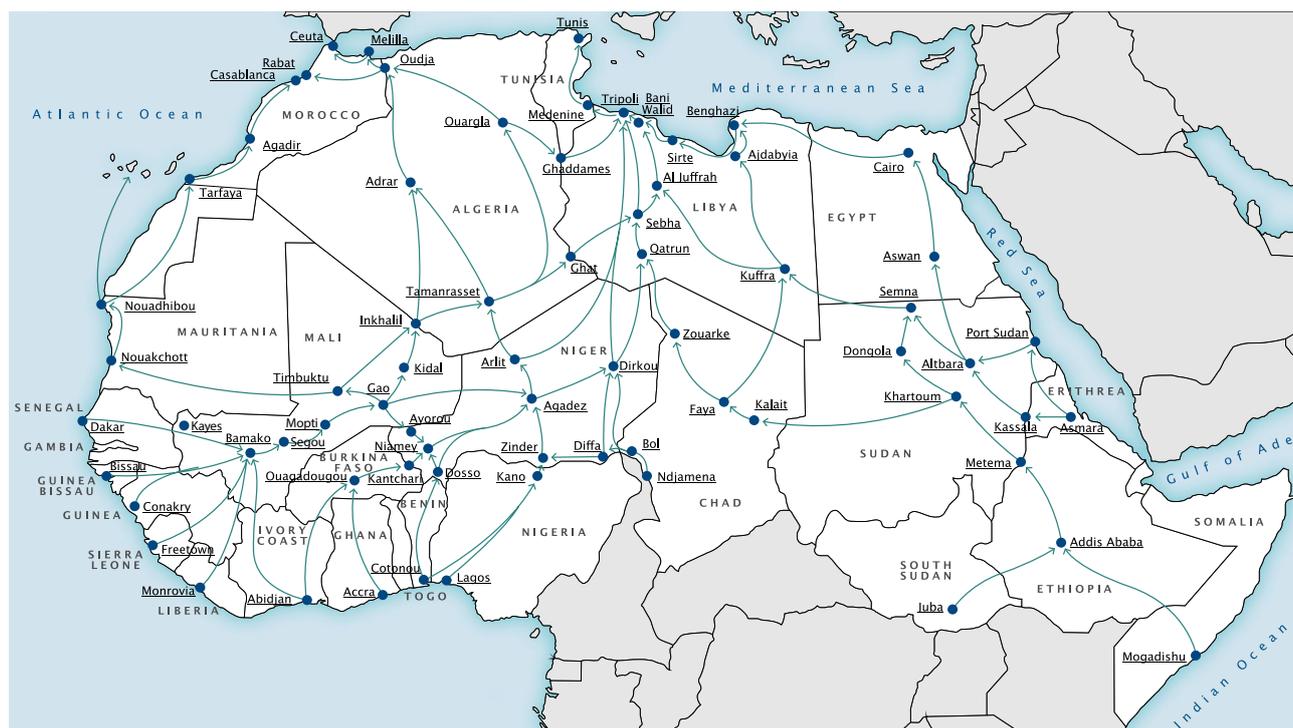
69 MMC (2020) [Detention of migrants and refugees in Mali, Burkina Faso, and Niger](#).

70 MMC (2019) [MMC West Africa 4Mi Snapshot September 2019](#);

Furthermore, in carrying out all other regression analyses in this study, the city where a 4Mi survey was conducted was one of the very few variables (alongside country of origin and intended destination) that was a significant predictor in all statistical models and for all incident types. This further reinforced the importance of investigating the effect of the location of the survey. To do so, the models focussed first on the country, then on the city where these took place. Afterwards, the city in which the 4Mi survey was carried out is used as a proxy for the migration route taken by the respondents. Separate models were devised for kidnapping.

This approach has limitations, as it is impossible to determine with certainty all the other cities a respondent passed through on their way to the city where they were surveyed. Nonetheless, the ability to pinpoint with certainty that a respondent passed through a particular city and country, and to analyse the protection incidents they have reported, provides some useful insights and sheds light on further avenues for inquiry.

Map 3. Mixed Migration Routes West Africa



Certain assumptions informed the regression modelling and hypothesis formulation (see below). For instance, while the onward direction of an individual migration journey cannot be determined with certainty, the current 4Mi methodology in West Africa is designed with an orientation towards northbound migration, with monitors located in key transit towns and cities along the Central Mediterranean Route. Of the 10,338 4Mi respondents whose surveys form this paper’s dataset, 45% indicated that their intended destination was a European country and 29.5% cited a North African country, which reinforces the underlying supposition that the majority of respondents are moving north.

Regular monitoring by the Danish Refugee Council (DRC) protection program in Mali along the Bamako-Gao axis has indicated that the route from Bamako to Segou is stable and controlled by security forces, and this holds true to a somewhat lesser extent from Segou to Mopti. Beyond Mopti, however, the security situation deteriorates, and there are many checkpoints, a significant presence of armed groups, and increased banditry. In short, the situation becomes more dangerous as respondents travel north on this particular route in Mali. As insecurity has grown along this route, the DRC protection program found that an increasing number of migrants and refugees have been opting to travel via Timbuktu.⁷¹

71 It is important to keep in mind that 4Mi monitors in West Africa do not carry out surveys further north than Agadez in Niger, or Gao, Timbuktu and Ber in Mali. Thus, any protection incidents that happen during the main desert crossing are not captured in these surveys.

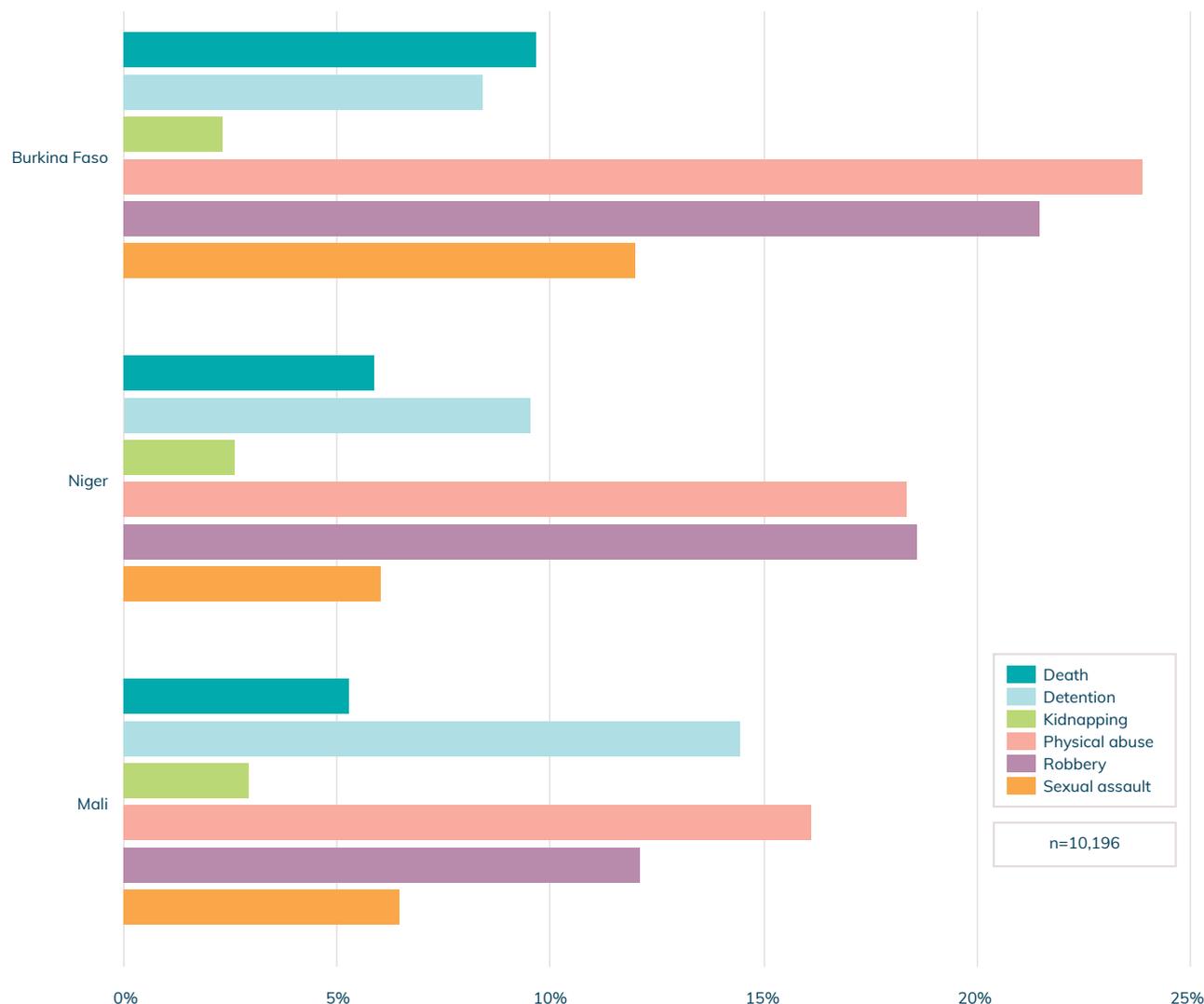
The conceptualization of this analysis entailed trying to capture a very loose approximation of northbound routes, with the idea that these could be split between one that passes through Agadez in Niger and two that pass through Mali (Gao or Timbuktu). The above considerations, along with previous 4Mi findings, led to the following working hypothesis:

Hypothesis: migrants and refugees who travel through the more northern cities where 4Mi surveys are conducted will show a greater vulnerability to protection incidents, and this trend is magnified in Mali.

3.7.1 Country

The **descriptive statistics** illustrated below (Figure 8) show that, of the three countries where 4Mi surveys are conducted, the highest percentage of respondents reporting four categories of protection incident – physical abuse, robbery, witnessing deaths, and witnessing or experiencing sexual assault – were surveyed in Burkina Faso. (To reiterate, this does not mean that the reported protection incident necessarily took place in Burkina Faso.) The highest percentage of respondents reporting detention were surveyed in Mali, which is in line with the previous MMC findings outlined above.

Figure 8. Reported protection incidents, by type and country of survey (% of 4Mi respondents)



Subjecting the descriptive statistics to **regression analysis** and controlling for confounding variables, led to the following findings:⁷²

- **The country where the 4Mi survey was conducted was a significant predictor of whether a migrant or refugee witnessed or experienced protection incidents of all types, except kidnapping.**
- When controlling for all other variables, including journey length, **Burkina Faso is the country where respondents are most likely to report incidents of death, sexual and physical abuse, and robbery**, which matches the pattern seen in the descriptive statistics above (Figure 8). Two exceptions are extortion and detention. For example, respondents surveyed in Mali and Niger are 1.3 and three times more likely to report extortion than respondents surveyed in Burkina Faso, respectively.
- The regression finding that **respondents surveyed in Mali are 2.3 times more likely to report detention than those surveyed in Burkina Faso** aligns with previous MMC research and descriptive statistics that suggested Mali is a particular hotspot for detention and that therefore people passing through Mali have a greater likelihood of being detained.
- However, the regression analysis finding that **respondents surveyed in Burkina Faso were more likely to report four categories of incident than those surveyed in Mali or Niger**, when controlling for confounding variables, is more surprising, and raises some interesting questions for further research and analysis. It would normally be assumed that respondents passing through Burkina Faso are at an earlier stage in their journey – in the case of those heading north – and proceeding via more “regular” means at that point, thus less likely to be exposed to as many dangers. As mentioned above, the routes initially considered for this research were differentiated by (northward) passage through either Niger or Mali, and Burkina Faso was not assumed to be as significant.

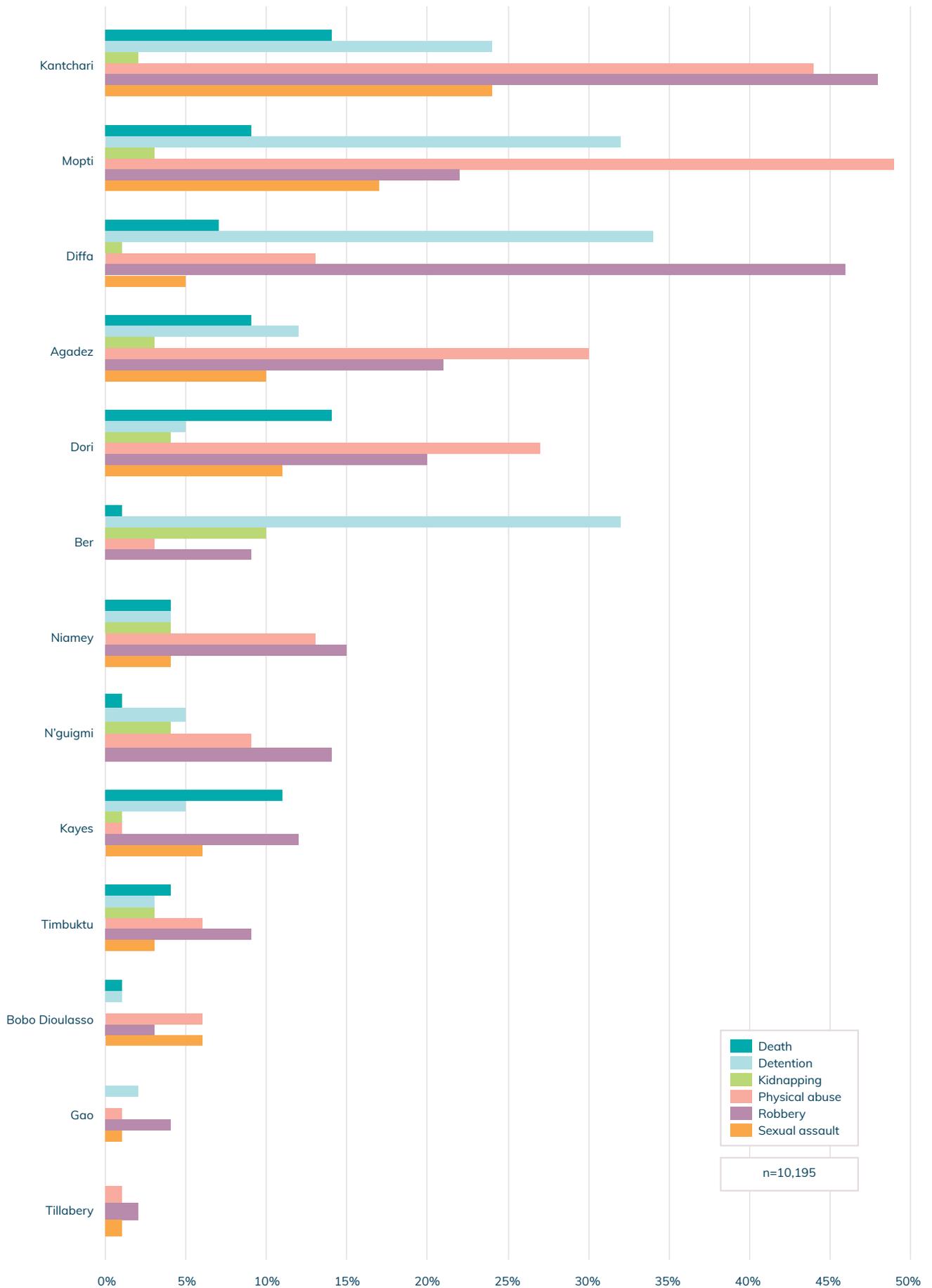
The regression findings raise a few possibilities which could run counter to those initial assumptions. Bearing in mind that just because an incident was reported in Burkina Faso doesn't necessarily mean it took place there, it could be postulated that Burkina Faso is seeing a greater number of people who are heading south, to coastal countries, and who may have experienced protection incidents in Mali or Niger before reaching Burkina Faso. Or, returning to the initial presumption that most respondents are heading north, it could also be surmised that more protection incidents are happening outside the Central Sahel countries than initially supposed. It is also possible that the significant deterioration in security in Burkina Faso from over the last several years could mean that respondents are exposed to certain protection incidents in Burkina Faso itself more than was previously the case.

3.7.2 City

Albeit with variation between the different types of protection incident, the **descriptive statistics** show that in the 4Mi surveys conducted in Kantchari (Burkina Faso), Mopti (Mali), and Diffa (Niger), the percentage of respondents who reported having experienced or witnessed protection incidents during the course of their journey was greater than in any other survey location. More specifically, in Kantchari, 14% of respondents reported witnessing migrant deaths, 24% reported witnessing or experiencing sexual assault, and 48% reported experiencing robbery. In Mopti, 49% reported experiencing physical abuse, and in Diffa 10% reported experiencing detention. Finally, 10% of respondents surveyed in Ber (Mali) reported experiencing incidents of kidnapping. In each case, these percentages are higher than in any other survey location.

⁷² See Table 7 in Appendix A for statistical details.

Figure 9. Reported protection incidents, by type and city of survey (% of 4Mi respondents)



Regression models assessed (using the same control variables as for interview country) in which specific cities where 4Mi surveys are conducted respondents were most likely to have experienced or witnessed protection incidents during their journey, and which protection incidents. The regression analyses confirmed that **the city where a 4Mi survey takes place is a significant predictor of whether migrants and refugees have witnessed and/or experienced protection incidents during the course of their journey to that city, but with variation across cities and incident types**.⁷³

- Of all the 4Mi survey locations, Dori and Kantchari (in Burkina Faso) and Agadez (in Niger) were the cities where respondents were most likely to report that they had previously witnessed **migrant death(s)**.⁷⁴ For example, respondents in Dori were almost four times more likely to report incidents of death than those in Niamey (in Niger).
- Kantchari is also the city where respondents were most likely to report having witnessed or experienced **sexual abuse**. For example, respondents in Kantchari were twice as likely to report having witnessed or experienced sexual assault than respondents in Dori, and 7.4 times more likely to report this compared to respondents in Timbuktu (Mali).
- Mopti (Mali) and Kantchari are the cities where respondents were the most likely to report having experienced **physical abuse**. For example, respondents in Mopti were more than five times more likely to report this than respondents in Niamey.
- Diffa (Niger) and Kantchari are the locations where respondents were most likely to report having experienced **robbery**.
- Kayes (Mali) is the city where migrants and refugees had the greatest likelihood of reporting extortion, followed by Agadez (Niger). (Curiously, Timbuktu ranks fourth in this category, even though the overall proportion of respondents in Timbuktu reporting protection incidents is quite low in comparison with other locations.)
- Finally, Ber and Mopti (both in Mali) are the cities where respondents were more likely to report having experienced **detention** during their journey. For example, respondents surveyed in Ber were no less than 23 times more likely to report this compared to respondents surveyed in Niamey.
- The modelling for other independent variables showed **kidnapping** to be the protection incident with the fewest significant predictors. In particular, migrants' and refugees' gender and language, their use or non-use of smugglers, and whether they interrupted their journey to find paid work, were not factors that helped predict the prevalence of their having experienced kidnapping. By contrast, the city where a 4Mi survey was conducted, (together with country of origin and intended destination) significantly predicted kidnapping, to an extent (according to additional modelling) greater than all other variables except the equally predictive control variable, duration of journey. The predictive effect of location of survey was due mainly to two cities, Ber and N'guigmi, where respondents were generally more likely to report having experienced kidnapping. For example, respondents in Ber were 2.9, 8.1, and 11 times more likely to report kidnapping than those surveyed in Agadez, Mopti, and Kantchari, respectively.

⁷³ It should be reiterated that protection incidents reported in 4Mi surveys may have taken place at any point in a migrant or refugee's journey up until the time of the survey, and not necessarily in the city where the survey was conducted.

⁷⁴ Kantchari is not on a route that is as typically associated with protection incidents for people in transit as routes further north, so the relatively high proportion of many types of protection incident reported among that city's 4Mi survey respondents was somewhat surprising. For a discussion of this finding, see Appendix G.

4. Summary of regression findings

Table C below summarizes which independent variables were found through logistic regression to be significant predictors of specific protection incidents.⁷⁵

Table C. Significant predictors by incident type - Findings of logistic regression analysis of 4Mi data

		Dependent variables / protection incident type						
		Death	Sexual assault	Physical abuse	Kidnapping	Robbery	Extortion	Detention
Independent variables	Gender		•	•		•	•	•
	Origin	•	•	•	•	•	•	•
	Language	•	•			•	•	
	Smuggler	•	•	•		•	•	•
	Working	•	•	•		•		•
	Destination	•	•	•	•	•	•	•
	Country	•	•	•		•	•	•
	City	•	•	•	•	•	•	•

Beyond this table's binary overview, by controlling for confounding variables, the regression modelling revealed a wealth of predictive data, set out below for each selected independent variable:

Gender: Female 4Mi respondents were 4.1 times more likely to report witnessing or experiencing sexual assault than male respondents. Male respondents were 1.5 times more likely than female respondents to report experiencing extortion.

Origin:

- **ECOWAS countries:** When compared to respondents from Central Sahel countries, respondents from other ECOWAS countries were twice as likely to report witnessing migrant deaths, 1.5 times more likely to report experiencing both physical abuse and experiencing or witnessing sexual assault, twice as likely to report having been kidnapped, and 1.8 times more likely to report robbery.
- **Other countries:** When compared to respondents from Central Sahel countries respondents from other (i.e. non-ECOWAS) countries were 4.3 times more likely to report witnessing migrant deaths, 2.4 times more likely to report witnessing or experiencing sexual assault, 1.9 times more likely to report experiencing physical abuse, 3.4 times more likely to report being kidnapped, 2.6 times more likely to report having been robbed and 1.8 times more likely to report experiencing extortion or detention.

Language: Respondents from non-Francophone countries were 1.6 times more likely to report experiencing extortion and 1.5 times more likely to report witnessing migrant deaths than respondents from Francophone countries.

Smuggler use: Respondents who used a smuggler were 3.6 times more likely to report having been detained, 1.9 times more likely to report witnessing or experiencing sexual assault and experiencing physical abuse, 1.8 times more likely to report having experienced extortion and 1.6 times more likely to report being robbed than those who did not use a smuggler.

⁷⁵ The regression modelling was binomial, that is, based on a protection incident having either been reported or not reported. It did not account for the number of such incidents. For further consideration of predictors of number of incidents, see Appendix F.

Stopping to work en route: Respondents who stopped to work during their journey were 2.4 times more likely to report witnessing or experiencing sexual assault, 2.1 times more likely to report being robbed, 1.9 times more likely to report witnessing migrant deaths and 1.8 times more likely to report being physically assaulted than those who did not stop to work en route.

Intended destination: Respondents with intended destinations in North Africa, other countries in Africa, or other countries (besides Africa or Europe) were less likely to report having been robbed than respondents whose intended destination was in Europe. Respondents whose intended destination was in North Africa were 1.5 times more likely to report having been detained than respondents whose intended destination was in Europe.

Location of 4Mi survey: Respondents surveyed in Burkina Faso were more likely than those surveyed elsewhere to report incidents of death, sexual and physical abuse, and robbery. Respondents surveyed in Mali and Niger were respectively 1.3 and 3 times more likely to report extortion as compared to respondents surveyed in Burkina Faso. Respondents surveyed in Mali were 2.3 times more likely to report having been detained than those surveyed in Burkina Faso.

5. Key observations

To complement the quantitative summary above, and as further evidence of the sharper lens offered by regression analysis, this section sets out a range of narrative observations that shed more nuanced light on the relationship between the selected independent variables and the risk of migrants and refugees experiencing or witnessing protection incidents during their journeys.

5.1 Geography matters

Among the independent variables under review, those related to geography – location of 4Mi surveys (more than all other variables), country of origin (more than language), and intended destination (with results slightly more difficult to interpret) – seem to be major determinants of protection incidents. These variables had significant predictive value across all incident types in the logistic regression model.

- **Country of origin** displayed a clear-cut pattern, with greater vulnerability to protection incidents shown by 4Mi respondents from outside the Central Sahel countries of Burkina Faso, Mali and Niger, and in most cases greater vulnerability of respondents from non-ECOWAS countries compared to respondents from ECOWAS countries.
- This contrasts with **intended destination**, whose survey options (namely, Europe, North Africa, Other Africa and Other) were significant in relation to each other in some cases, but not in others, and not always in the same direction. That is to say, one intended destination may relate to higher vulnerability to a particular type of protection incident as compared to another intended destination. This makes it difficult to say that any one intended destination is conclusively related to greater vulnerability
- It is nonetheless possible to pick out some interesting findings. For instance, respondents with an intended destination of Europe were more likely to report being **robbed** than respondents heading anywhere else, and respondents with an intended destination of North Africa were more likely to report being **detained** than those hoping to reach Europe.
- The same is true in the case of the **city where a 4Mi survey was conducted**. Given that there are 13 of these, the regression models are harder to interpret, and while again there are interesting findings to glean, discerning patterns of relationships is not easy.⁷⁶

5.2 Employment, religion, education and journey duration

Of the control variables used in the regression analysis, respondents' employment status, religion, level of education, and journey duration were found to be statistically important. By contrast, age does not seem to play an important role.

Journey duration was significant across all regression models related to witnessing migrant deaths and experiencing kidnapping, and across all models (except stopping to work) related to witnessing or experiencing sexual assault and experiencing physical abuse. **In almost all cases, vulnerability to these incidents increased the longer the respondent travelled.** In most models, journey duration was not significant, however, in relation to incidents of robbery, extortion or detention.

⁷⁶ Given the inherent complexity of these models, with multiple levels of independent variable to analyse across multiple categories of dependent variable, and with significance apparent but not always straightforward to interpret, further analysis around geography could bear useful fruit. Keeping in mind that the regression analysis conducted for this paper strived to control for (i.e. discount the possible statistical influence of) several aspects of respondents' profiles and their migration route, it would be useful to consider what other geographical factors might increase vulnerability – such as the existence of checkpoints, types of transportation available, and the prevailing security situation – while still considering what additional non-geographic factors may be relevant with regard to country of origin and intended destination.

5.3 Kidnapping eludes prediction

Kidnapping was the hardest protection incident to explain in this analysis. Whereas for all other types of incident the independent variables being explored had significant predictive power (with either no exceptions or only one exception) **five of the eight independent variables failed to predict kidnapping**. Those variables that were significant – origin, destination and city of survey – are all tied to geography. Of these, city of survey was the strongest predictor, and this was driven particularly by those conducted in two cities: Ber in Mali and N'guigmi in Niger.

In 4Mi surveys conducted in Ber, nearly half of the overall incidents of kidnapping were reported to have taken place in Mali (131 of 267), with 24 reported in Bamako and 26 in Mopti, both of which are cities that a migrant heading north through Ber might be expected to transit. The case of N'guigmi may have a linkage to another variable seen to be significant: country of origin. Respondents from “Other” (ie non-ECOWAS) countries surveyed in N'guigmi were 3.4 times more likely to report having been kidnapped than respondents from the Central Sahel, and N'guigmi is an important transit city for people coming from Cameroon, Central African Republic, Chad and Sudan⁷⁷ – in other words, non-ECOWAS countries.

Kidnapping is a protection incident that is associated with North Africa to a much greater extent than with West Africa.⁷⁸ While this analysis has suggested that further research might lead to a better understanding of this phenomenon in the region, the overall prevalence of reported incidents of kidnapping is quite small (267 reported cases from 10,338 respondents) and perhaps too low to allow firm conclusions to be drawn.

5.4 Differences between descriptive statistics and regression results

There are several independent variables whose descriptive statistics (which show the proportion of 4Mi respondents who report a particular type of protection incident) diverge significantly from the regression analysis (which shows whether and to what extent an independent variable is useful in predicting a particular type of protection incident **when confounding variables are controlled for**). These are set out below:

- **Gender:** 65% of female 4Mi respondents reported having experienced **extortion**, as compared to 59% of men; however, the regression analysis showed that men are in fact 1.5 times more likely to experience extortion during their journeys.
- **Use of smugglers:** While the percentage of respondents who reported having witnessed or experienced **sexual assault** was the same (8%) regardless of whether they had used a smuggler, the regression analysis showed that respondents who used a smuggler were actually 1.9 times more likely to witness or experience sexual assault.
- **Destination:** Whereas 14% of respondents whose intended destination was in Europe reported experiencing **detention**, compared to 13% whose intended destination was North Africa, the regression analysis showed that those intending to go to North Africa were in fact 1.5 times more likely to experience detention when confounding variables were controlled for.

These examples demonstrate that while descriptive statistics are useful (and frequently relied upon in the humanitarian sector), they do not always tell the full story, and highlight the value of controlling for confounding variables.

⁷⁷ Discussion with 4Mi Supervisor for Niger.

⁷⁸ Molenaar, F., Tubiana, J. & Warin, C. (2018) [op.cit.](#)

6. Implications and recommendations

The findings of this study have various implications for protection programming, policy, and future research, and lead to the following recommendations:

6.1 Programming

- **Ensure that protection staff working with female refugees and migrants are trained to sensitively recognize and make referrals for SGBV concerns.** Female respondents were found to be 4.1 times more likely to witness or experience sexual assault or harassment than male respondents.
- **Explore the expansion of protection programming for refugees and migrants in transit through Burkina Faso.** Respondents were more likely to report four different types of protection incident (witnessing migrant deaths, witnessing or experiencing sexual assault or harassment, experiencing physical abuse, experiencing robbery) during 4Mi surveys carried out in Burkina Faso. While this does not mean that the incidents being reported necessarily occurred in Burkina Faso, it nonetheless suggests that respondents surveyed in Burkina Faso have faced challenges en route which could imply assistance needs, and that more attention should be paid to routes outside of Mali and Niger).
- **Provide information en route to refugees and migrants on their ECOWAS rights and ways in which these may be violated.** Some 61% of respondents reported having experienced extortion at least once during their journey, and previous MMC research⁷⁹ found that this frequently occurs at checkpoints and border crossings. This is despite the fact that ECOWAS citizens should enjoy the right to visa free entry and movement in other ECOWAS countries. In addition, non-Francophone and non-ECOWAS citizens are more likely to report having experienced extortion, thus materials should be available in a variety of languages to ensure broad understanding.

6.2 Policy

- **Expand legal pathways, through employment schemes and higher education for instance, and safeguards for migration within the region and to North Africa and Europe** to make migration more accessible and safer overall.
- **Assess and seek to address tensions between ECOWAS free movement in theory and high rates of extortion in practice.** Regional policymakers should seek to identify obstacles to the smooth implementation of the ECOWAS Free Movement Protocol (for instance lack of knowledge on the part of officials who come into contact with refugees and migrants en route, poor/irregular pay to such officials etc.) and pursue holistic solutions for these challenges.
- **Place human rights at the center of all approaches.** The human rights of refugees and migrants should be at the centre of programming and support in West Africa, taking into account the OHCHR Recommended Principles and Guidelines on Human Rights at International Borders. These principles recommend that legislative provisions be proportionate and that criminal penalties be applied, where appropriate, for offenses committed against migrants at international borders.

6.3 For further research

- **Further analyze how factors related to geography play a role in vulnerability.** Three independent variables related to geography (country of origin, intended destination and location of 4Mi survey as a proxy for route) had significant predictive value across all incident types. However, it would be useful to further pinpoint what specific factors en route (i.e. checkpoints) or in terms of refugees and migrant profiles (i.e. risk-taking behavior related to a particular intended destination) may lead to greater vulnerability.
- **Seek to better understand whether and to what extent stopping the journey to work puts refugees and migrants at greater risk than stopping the journey for other reasons.** Respondents who reported stopping to

⁷⁹ Raineri, L. & Golovko, E [op.cit.](#)

work to fund the next leg of their journey were found to be more likely to witness and/or experience multiple types of protection incident, but it is not clear from this analysis to what extent this is due to the work itself.

- **Use qualitative approaches to better understand the linkages between use of smugglers, detention and extortion.** Previous MMC West Africa research⁸⁰ has suggested that migrants and refugees in transit through the region may at times use smugglers as a means to avoid extortion or detention. This analysis found that respondents who used a smuggler were actually more likely to report having been detained or having experienced extortion than respondents who did not use a smuggler. However, it is not clear whether the strategy of enlisting a smuggler to help avoid border controls was ineffective, or whether respondents sought smugglers' assistance after having been subject to extortion or detention, perhaps as a response to that experience.

80 Raineri, L. & Golovko, E [op cit.](#)

7. Appendices

Table 0. How to read a logistic regression table

	Death	Sexual assault	Physical abuse	Kidnap-ping	Robbery	Extortion	Deten-tion
Gender:							
women	.134	1.409***	.164*	-.243	.0235**	-.172**	-.413***
	(.111)	(.107)	(.076)	(.190)	(.077)	(.064)	(.100)
	1.14	4.09	1.17	0.78	1.26	0.84	0.66
Demographics							
Age	No	No	Yes***	No	No	No	No
Religion	Yes***	Yes**	Yes**	No	Yes***	Yes***	Yes***
Family factors							
Children	No	No	Yes***	No	No	Yes***	Yes***
Marital status	No	Yes***	Yes*	Yes*	Yes**	No	Yes***
Social status							
Education	Yes**	Yes***	Yes***	No	Yes*	Yes***	Yes***
Employment	Yes**	Yes***	Yes***	No	Yes***	Yes***	Yes***
Urban vs rural	No	Yes***	Yes***	Yes**	Yes***	No	Yes***
Other							
Duration	Yes***	Yes***	Yes*	Yes**	No	No	No
4Mi survey city	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***
R²McFadden	.139	.217	.223	.121	.147	.214	.263

Reference levels: victim of incident: no; gender: men; *** p < .001, ** p < .01, * p < .05; standard error in parentheses; odds ratio in Italics

Independent variables (are used to explain/predict dependent variables)

This is the **standard error**, or 'typical' error. We can simplify by saying that the lower the error, the better the model.

Dependent variables (are explained/predicted by independent variables)

This is the regression **coefficient**, and provides 2 pieces of information:

- (1) Whether the association is positive or negative. A **positive** coefficient means being a woman **increases** likelihood of reporting sexual assault; if the coefficient is **negative**, as in Extortion, this means being a woman **decreases** likelihood of reporting extortion
- (2) Whether the association is **statistically significant**. In other words, whether or not the association is 'real' (as opposed to merely due to chance). Conventionally, 3 levels are used:
 *The chance that the finding is wrong is less than 1 in 20
 ** The chance that the finding is wrong is less than 1 in 100
 ***The chance that the finding is wrong is less than 1 in 1,000

A coefficient without an asterisk is statistically not significant. For example, women are less likely than men to report kidnapping, but not significantly so.

This is the odds ratio of the corresponding coefficient. For example, an odds ratio of 4.09 means that women are 4.09 times more likely to report sexual assault than men.

R² is a measure of how well the **whole** model explains the data. For example, a R² of 0.217 means that 21.7% of the variation in sexual assault is explained by all the independent variables (sex, demographics, family, social status, other) taken together.

For control variables, we do not report coefficient, error, and odds ratio, but only whether the predictor is significant (**Yes**) or not significant (**No**), and at which level (*, **, ***).

A. Logistic regression tables

Table 1.⁸¹ Gender as a predictor of protection incidents - Findings of logistic regression analysis of 4Mi data

	Death	Sexual assault	Physical abuse	Kidnap-ping	Robbery	Extortion	Detention
Gender: women	.134 (.111) 1.14	1.409*** (.107) 4.09	.164* (.076) 1.17	-.243 (.190) 0.78	.0235** (.077) 1.26	-.172** (.064) 0.84	-.413*** (.100) 0.66
Demographics							
Age	No	No	Yes***	No	No	No	No
Religion	Yes***	Yes**	Yes**	No	Yes***	Yes***	Yes***
Family factors							
Children	No	No	Yes***	No	No	Yes***	Yes***
Marital status	No	Yes***	Yes*	Yes*	Yes**	No	Yes***
Social status							
Education	Yes**	Yes***	Yes***	No	Yes*	Yes***	Yes***
Employment	Yes**	Yes***	Yes***	No	Yes***	Yes***	Yes***
Urban vs rural	No	Yes***	Yes***	Yes**	Yes***	No	Yes***
Other							
Duration	Yes***	Yes***	Yes*	Yes**	No	No	No
4Mi survey city	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***
R2McFadden	.139	.217	.223	.121	.147	.214	.263

Reference levels: victim of incident: no; gender: men; *** p < .001, ** p < .01, * p < .05; standard error in parentheses; odds ratio in Italics

81 Pink cells indicate that a variable was significant in the model, green cells indicate it was not. See Table 0 in this annex for explanatory annotations.

Table 2. Origin as a predictor of protection incidents - Findings of logistic regression analysis of 4Mi data

	Death	Sexual assault	Physical abuse	Kidnaping	Robbery	Extortion	Detention
Origin:	.690***	.388**	.383***	.662**	.569***	.618***	.247*
ECOWAS	(.131) 1.99	(.131) 1.47	(.083) 1.46	(.211) 1.94	(.090) 1.76	(.064) 1.85	(.104) 1.28
Origin:	1.469***	.872***	.620***	1.231***	.943***	.611***	.596***
Other	(.196) 4.34	(.204) 2.39	(.141) 1.86	(.301) 3.42	(.141) 2.56	(.131) 1.84	(.173) 1.81
Demographics							
Age	No	No	Yes***	No	No	No	No
Sex	No	Yes***	No	No	Yes*	Yes**	Yes***
Religion	Yes***	Yes**	Yes**	No	Yes***	Yes***	Yes***
Family factors							
Children	No	No	Yes***	No	No	Yes***	Yes***
Marital status	No	Yes***	Yes*	Yes*	Yes*	No	Yes***
Social status							
Education	Yes**	Yes***	Yes***	No	No	Yes***	Yes***
Employment	Yes**	Yes***	Yes***	No	Yes***	Yes***	Yes***
Urban vs rural	No	Yes**	Yes**	Yes**	Yes**	No	Yes***
Other							
Duration	Yes***	Yes***	Yes*	Yes**	No	No	No
4Mi survey city	Yes***						
R2McFadden	.152	.221	.226	.130	.153	.222	.265

Reference levels: victim of incident: no; Origin: Central Sahel; *** p < .001, ** p < .01, * p < .05; standard error in parentheses; odds ratio in Italics

Table 3. Language in origin country as a predictor of protection incidents - Findings of logistic regression analysis of 4Mi data

	Death	Sexual assault	Physical abuse	Kidnap-ping	Robbery	Extortion	Deten-tion
Non-Francophone	.418***	.269**	.083	.230	.160*	.479***	.003
	(.101)	(.100)	(.072)	(.164)	(.071)	(.067)	(.090)
	1.51	1.30	1.08	1.25	1.17	1.61	1.00
Demographics							
Age	No	No	Yes	No	No	No	No
Sex	No	Yes***	Yes*	No	Yes**	Yes**	Yes***
Religion	Yes***	Yes**	Yes**	No	Yes***	Yes***	Yes***
Family factors							
Children	No	No	Yes***	No	No	Yes***	Yes***
Marital status	No	Yes***	Yes*	Yes*	Yes**	No	Yes***
Social status							
Education	Yes**	Yes***	Yes***	No	Yes*	Yes***	Yes***
Employment	Yes**	Yes***	Yes***	No	Yes***	Yes***	Yes***
Urban vs rural	No	Yes***	Yes***	Yes**	Yes***	No	Yes***
Other							
Duration	Yes***	Yes***	Yes*	Yes**	No	No	No
4Mi survey city	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***
R2McFadden	.143	.219	.223	.122	.147	.218	.263

Reference levels: victim of incident: no; Country of origin language: Francophone; *** p < .001, ** p < .01, * p < .05; standard error in parentheses; odds ratio in Italics

Table 4. Smuggler use as a predictor of protection incidents - Findings of logistic regression analysis of 4Mi data

	Death	Sexual assault	Physical abuse	Kidnap-ping	Robbery	Extortion	Deten-tion
Smuggler use:	.263*	.637***	.660***	.111	.488***	.573***	1.292***
yes	(.117) 1.30	(.113) 1.89	(.078) 1.93	(.0162) 1.11	(.081) 1.62	(.070) 1.77	(.103) 3.64
Demographics							
Age	No	No	Yes***	No	No	No	No
Sex	No	Yes***	Yes*	No	Yes**	Yes**	Yes***
Religion	Yes***	Yes**	Yes**	No	Yes***	Yes***	Yes**
Family factors							
Children	No	No	Yes***	No	No	Yes***	Yes**
Marital status	No	Yes***	Yes*	Yes*	Yes*	No	Yes**
Social status							
Education	Yes**	Yes***	Yes***	No	No	Yes***	Yes**
Employment	Yes**	Yes***	Yes***	No	Yes***	Yes***	Yes**
Urban vs rural	No	Yes**	Yes***	Yes*	Yes***	No	Yes**
Other							
Duration	Yes***	Yes***	Yes*	Yes**	No	No	No
4Mi survey city	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***
R2McFadden	.140	.225	.236	.123	.152	.226	.298

Reference levels: victim of incident: no; smuggler use: no; *** p < .001, ** p < .01, * p < .05; standard error in parentheses; odds ratio in Italics

Table 5. Stopping to work to finance onward journey as a predictor of protection incidents - Findings of logistic regression analysis of 4Mi data

	Death	Sexual assault	Physical abuse	Kidnap-ping	Robbery	Extortion	Deten-tion
Working:	.640***	.880***	.610***	<i>-0.154</i>	.726***	.097	.174*
yes	(.099) 1.89	(.101) 2.41	(.067) 1.84	(.151) 0.85	(.067) 2.06	(.057) 1.10	(.082) 1.19
Demographics							
Age	Yes*	No	Yes***	No	No	No	No
Sex	No	Yes***	No	No	Yes**	Yes**	Yes***
Religion	Yes***	Yes***	Yes**	No	Yes***	Yes***	Yes***
Family factors							
Children	No	No	Yes***	No	No	Yes***	Yes***
Marital status	No	Yes***	Yes*	Yes*	No	No	Yes***
Social status							
Education	Yes**	Yes***	Yes***	No	Yes**	Yes***	Yes***
Employment	Yes**	Yes***	Yes***	No	Yes***	Yes***	Yes***
Urban vs rural	No	Yes*	Yes*	Yes**	Yes**	No	Yes***
Other							
Duration	Yes***	No	No	Yes**	Yes*	No	No
4Mi survey city	Yes***						
R2McFadden	.148	.233	.232	.122	.161	.214	.264

Reference levels: victim of incident: no; working: no; *** p < .001, ** p < .01, * p < .05; standard error in parentheses; odds ratio in Italics

Table 6. Destination as a predictor of incident types - Findings of logistic regression analysis of 4Mi data

	Death	Sexual assault	Physical abuse	Kidnap-ping	Robbery	Extortion	Deten-tion
Destination:							
North Africa	<i>-.237</i>	<i>.204</i>	<i>-.238**</i>	<i>-.570**</i>	<i>-.434***</i>	<i>-.093</i>	<i>.434***</i>
	(.137) <i>.78</i>	(.136) <i>1.22</i>	(.089) <i>.78</i>	(.204) <i>.56</i>	(.091) <i>.64</i>	(.077) <i>.91</i>	(.107) <i>1.54</i>
Destination:							
Africa (other)	<i>-.762***</i>	<i>.309</i>	<i>.020</i>	<i>.112</i>	<i>-.424***</i>	<i>-.342***</i>	<i>-.004*</i>
	(.181) <i>.46</i>	(.163) <i>1.36</i>	(.116) <i>1.02</i>	(.271) <i>1.11</i>	(.120) <i>.65</i>	(.096) <i>.70</i>	(.010) <i>.99</i>
Destination:							
Other	<i>-.535**</i>	<i>-.343</i>	<i>-.259</i>	<i>-.219</i>	<i>-.584***</i>	<i>-.347**</i>	<i>-.496*</i>
	(.195) <i>.58</i>	(.205) <i>.70</i>	(.139) <i>.77</i>	(.342) <i>.80</i>	(.139) <i>.55</i>	(.121) <i>.70</i>	(.205) <i>.60</i>
Demographics							
Age	No	No	Yes**	No	No	No	No
Sex	No	Yes***	Yes**	No	Yes**	No	Yes***
Religion	Yes***	No	Yes**	Yes*	Yes***	Yes***	Yes***
Family factors							
Children	No	No	Yes***	Yes*	No	Yes***	Yes***
Marital status	No	Yes***	Yes*	Yes*	Yes**	No	Yes***
Social status							
Education	No	Yes***	Yes***	No	No	Yes***	Yes***
Employment	No	Yes*	Yes***	No	Yes**	Yes***	Yes***
Urban vs rural	No	Yes*	Yes***	Yes*	Yes***	No	Yes***
Other							
Duration	Yes***	Yes***	Yes***	Yes**	No	Yes*	Yes*
4Mi survey city	Yes***	Yes***	Yes***	Yes**	Yes***	Yes***	Yes***
R2McFadden	<i>.153</i>	<i>.211</i>	<i>.239</i>	<i>.128</i>	<i>.150</i>	<i>.256</i>	<i>.290</i>

Reference levels: victim of incident: no; destination: Europe; *** p < .001, ** p < .01, * p < .05; standard error in parentheses; odds ratio in Italics

Table 7. Country of 4Mi survey as predictor of protection incidents - Findings of logistic regression analysis of 4Mi data

	Death	Sexual assault	Physical abuse	Kidnap-ping	Robbery	Extortion	Deten-tion
Location:							
Mali	<i>-.707***</i>	<i>-.849***</i>	<i>-.647***</i>	<i>.084</i>	<i>-.822***</i>	<i>.232***</i>	<i>.825***</i>
	(.116)	(.117)	(.073)	(.178)	(.079)	(.056)	(.090)
	.49	.42	.52	1.08	.43	1.26	2.28
Location:							
Niger	<i>-.442***</i>	<i>-.639***</i>	<i>-.361***</i>	<i>.263</i>	<i>-.119</i>	<i>1.12***</i>	<i>.228*</i>
	(.110)	(.110)	(.072)	(.181)	(.079)	(.065)	(.101)
	.64	.52	.69	1.30	.88	3.06	1.25
Demographics							
Age	No	No	Yes***	No	Yes***	Yes***	Yes***
Sex	Yes**	Yes***	Yes***	No	Yes***	No	No
Religion	Yes***	Yes***	Yes**	No	Yes***	Yes***	Yes***
Family factors							
Children	No	No	Yes***	No	No	Yes***	No
Marital status	No	Yes***	Yes***	No	Yes***	Yes***	Yes***
Social status							
Education	Yes***	Yes***	Yes***	No	Yes***	Yes***	Yes***
Employment	No	Yes***	Yes***	Yes*	Yes**	Yes***	Yes***
Urban vs rural	No	Yes*	Yes***	Yes***	Yes**	Yes*	Yes***
Other							
Duration	Yes***	Yes***	Yes**	Yes*	Yes***	Yes***	No
R2McFadden	.081	.177	.075	.038	.060	.090	.088

Reference levels: victim of incident: no; Location: Burkina Faso; *** p < .001, ** p < .01, * p < .05; standard error in parentheses; odds ratio in italics

B. Number of observations and missing values

Variable	n	Missing
Age	10,308	30
Children	10,332	6
City	10,195	143
Country	10,196	142
Death	10,241	97
Destination	8,380	1958
Detention	10,092	246
Duration	9,668	670
Education	10,332	6
Extortion	9,858	480
Gender	10,332	6
Kidnapping	10,156	182
Marital status	10,332	6
Occupation	10,328	10
Origin	10,331	7
Physical abuse	10,130	208
Religion	10,332	6
Robbery	10,121	217
Sexual abuse	10,151	187
Smuggler use	10,091	247
Urban vs. rural	10,279	59
Working	10,331	7

C. Frequencies of incidents

Incident	Frequencies	
	No	Yes
Death	9,552	689
	93.3 %	6.7 %
Sexual abuse	9,339	812
	92.0 %	8.0 %
Physical abuse	8,194	1,936
	80.9 %	19.1 %
Kidnapping	9,889	267
	97.4 %	2.6 %
Robbery	8,416	1,705
	83.2 %	16.8 %
Extortion	3,828	6,030
	38.8 %	61.2 %
Detention	8,976	1,116
	88.9 %	11.1 %

D. Frequencies of predictor variables

Gender	n	Percent
Female	3,152	30.5 %
Male	7,180	69.5 %
Origin	n	Percent
Central Sahel	2,859	27.7 %
ECOWAS	6,607	64.0 %
Other	865	8.4 %
Language	n	Percent
Francophone	7,979	77.2 %
Non-Francophone	2,352	22.8 %
Smuggler use	n	Percent
No	5,112	50.7 %
Yes	4,979	49.3 %
Working	n	Percent
No	6,196	59.9 %
Yes	4,142	40.1 %
City	n	Percent
Agadez	1,417	13.9 %
Ber	432	4.2 %
Bobo Dioulasso	1,054	10.3 %
Diffa	337	3.3 %
Dori	1,253	12.3 %
Gao	695	6.8 %
Kantchari	780	7.7 %
Kayes	473	4.6 %
Mopti	1,086	10.7 %
N'guigmi	146	1.4 %
Niamey	798	7.8 %
Tillabéry	519	5.1 %
Timbuktu	1,204	11.8 %
Zinder	1	0.0 %
Destination	n	Percent
Europe	3,774	45.0 %
North Africa	2,471	29.5 %
Other	588	7.0 %
Other Africa	1,547	18.5 %
Country	n	Percent
Burkina Faso	3,087	30.3 %
Mali	3,890	38.2 %
Niger	3,219	31.6 %

E. Frequencies of control variables

Religion	n	Percent
Agnosticism/atheism	1	0.0 %
Animism	109	1.1 %
Buddhism	2	0.0 %
Christianity (Orthodox)	84	0.8 %
Christianity (Roman catholicism)	3,054	29.6 %
Christianity (protestant)	701	6.8 %
Islam (Shia)	947	9.2 %
Islam Sunni	5,132	49.7 %
Judaism	1	0.0 %
Other	66	0.6 %
Refused	235	2.3 %

Children	n	Percent
No	5,587	54.1 %
Yes, I have eight or more children	12	0.1 %
Yes, I have four-seven children	179	1.7 %
Yes, I have one child	2,518	24.4 %
Yes, I have two-four children	2,036	19.7 %

Marital status	n	Percent
Divorced/Separated	742	7.2 %
Married	2,800	27.1 %
Refused	18	0.2 %
Single	6,588	63.8 %
Widowed	184	1.8 %

Urban vs. Rural	n	Percent
Refused	14	0.1 %
Rural	1,141	11.1 %
Suburban/Periurban	339	3.3 %
Urban	8,785	85.5 %

Education	n	Percent
Advanced/Master degree	238	2.3 %
Associate or bachelor degree	792	7.7 %
No education	1,278	12.4 %
Primary school	2,577	24.9 %
Refused	29	0.3 %
Religious education	1,190	11.5 %
Secondary or high school	2,800	27.1 %
Vocational training	1,428	13.8 %

Occupation	n	Percent
Business owner	154	1.5 %
Civil servant (government official)	32	0.3 %
Farmer/farm worker	1,143	11.1 %
Labourer	2,478	24.0 %
Other	1,282	12.4 %
Police/military	16	0.2 %
Professional	132	1.3 %
Refused	76	0.7 %
Service industry	1,914	18.5 %
Student	734	7.1 %
Unemployed	2,367	22.9 %

F. Descriptive stats on control variables

Statistic	Variable	
	Age	Duration
Mean	28.8	161
Median	28	15
Mode	25	3
Standard deviation	6.45	411
Minimum	18	0
Maximum	74	3,650
25th percentile	24	5
50th percentile	28	15
75th percentile	32	90

G. Significant predictors of number of protection incidents

Predictors of number of incidents experienced

One limitation of binomial logistic regression is that it groups respondents into just two categories – in this case 4Mi respondents who reported protection incidents and those who did not – without considering the number of incidents that were reported. To address this limitation, further analyses were conducted to identify the predictors of the number of incidents reported by each respondent, using multiple regression analysis, in hopes of confirming and/or bringing more nuance to the above analyses. The intention in doing so is to pinpoint factors that make people more susceptible to experiencing multiple incidents, which shows a higher level of overall vulnerability.

Method

In all models discussed below, we first entered our main predictor variables of interest, as one bloc (gender, origin, language in country of origin, use of smuggler, working to fund next stretch of journey, intended destination, and the city where the 4Mi survey was conducted), followed by the control variables (by block): demographics, family factors, social status, and journey duration. As with the logistic regression analyses, no multicollinearity issues were detected (see statistics in Appendix I).

Results

The table below identifies instances where the results of the logistical and multiple regression analyses diverged.

Table 8. Significant predictors of number of incidents - Multiple regression analysis of 4Mi data

	Death	Sexual assault	Physical abuse	Kidnapping	Robbery	Extortion	Detention
Gender	No	Yes	No	Yes	No	Yes	No
Origin	Yes	Yes	No	No	Yes	Yes	Yes
Language	Yes	No	No	No	No	No	No
Smuggler	Yes	Yes	Yes	No	Yes	Yes	Yes
Working	Yes	Yes	Yes	No	Yes	Yes	No
Destination	Yes	Yes	Yes	No	Yes	Yes	Yes
City	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note. Cells in yellow denote results that differ from logistic regression results.

Across analyses, the multiple regression findings were similar to those of logistic regression. For example, amongst the independent variables of primary interest, survey location (a proxy for route) was again one of the strongest predictors of reporting protection incidents, being significant for all incident types, even when all confounding variables were entered in the models. Likewise, smuggler-use significantly predicted the number of all incident types except kidnapping, as in the logistic regression analyses.

There were also interesting differences, however. For example, contrary to the logistic regression findings, the multiple regression analysis did not find language to be a significant predictor of sexual assault, robbery, and extortion (but origin was, as previously found). Furthermore, gender was not a significant predictor of the number of physical abuse, robbery, and detention incidents, but was a significant predictor of kidnapping, with women being less likely to report a high number of incidents than men. Taken with the findings above, this suggests that although men are not more likely than women to experience kidnapping, those men who do report it are more likely to experience a higher number of incidents than those women who report it. The results also differed with regard to stopping for work to fund the next stretch of the journey. Contrary to what was found in logistic regression analyses, working was not a significant predictor of detention, but was a significant predictor of extortion, with those working being less likely to report extortion than those who did not work.

Finally, linear regression was applied to the total number of incidents experienced by respondents, without regard for incident type (descriptive stats are in Appendix H, and model results are in Appendix I), using the same predictor variables and controls. Except language, all the variables of primary interest were significant predictors of the total number of incidents reported (when controlling for all confounding variables), and the whole model explained roughly 40% of the total variance in number of incidents. It can therefore be concluded that, based on several statistical methods and measures, the independent variables selected for this study seem to be important determinants of migrants' vulnerabilities, although not for all incident types and with some differences in terms of likelihood of experiencing protection incidents vs. predicted number of incidents. In particular, the role of geography emerges as a strong predictor of vulnerability in both logistic and linear regression.

H. Kantchari's proportionally high levels of reported protection incidents – a discussion

Kantchari is not on a route that is as typically associated with protection incidents for people in transit as routes further north, so the relatively high proportion of multiple types of protection incident reported in that city's 4Mi surveys was somewhat surprising to the authors of this report. Because of this, several tests were run to check for potential monitor bias. In doing so, the overall pattern of results did not change, and thus monitor bias did not appear to be an issue.

However, further discussion with the 4Mi supervisor in Burkina Faso, as well as some additional targeted analysis of the data, has suggested some other factors which might help explain the prominence of incidents among those taking the route through Kantchari in this particular model. First of all, Kantchari is a major crossroads, and a significant number of migrants and refugees pass through who are coming from Niger, and to a lesser extent from Mali, and may have experienced incidents further north.

This is reinforced by a second layer of analysis carried out on the Kantchari survey data, which sought to cross-reference the incident location given for cases of physical abuse that were reported in Kantchari and found that the third most frequently cited location was Agadez, in northern Niger.

Additionally, as mentioned in the analysis relating to Burkina Faso more broadly, it is also important to consider the possibility of incidents happening outside the Central Sahel. The second most frequently cited location of incident for physical abuse being reported in Kantchari was Abidjan, in Ivory Coast, which supports this idea.

The first most frequently cited location of incident for physical abuse that was reported in Kantchari was in fact Kantchari itself. Given its substantial distance from both Niamey and Ouagadougou, it is common for migrants and refugees to spend the night in Kantchari, a time when vulnerability to protection incidents may be increased. Additionally, even before the more recent increase in conflict in Burkina Faso more generally, the area around Kantchari was known for banditry and insecurity.

On the flip side, it is still surprising that some more northerly cities in Mali, such as Gao, Ber (other than detention) and Timbuktu, show such a relatively small proportion of protection incidents being reported. Indicative of the prevailing insecurity in northern Mali, Gao itself has been given a score of 7.1 (very high risk) on the Index for Risk Management (INFORM) Sahel,⁸² and it is a location where previous MMC research has pointed to problematic conditions faced by people on the move.⁸³ Monitoring carried out by a DRC protection program operating on the Bamako-Gao road has suggested that the general insecurity on this route provides fertile ground for protection incidents.

At the same time, Mopti, which is further south than Ber, Gao or Timbuktu, is the city in which the second highest proportion of respondents reported incidents of protection. This could indicate that a higher proportion of respondents than may be expected are moving south, and have been exposed to incidents further north (a person traveling south towards Bamako from any of the three more northerly cities could expect to pass through Mopti). Reporting from the DRC protection team does allude to many returnees from Algeria traveling south towards Bamako. Or, it may suggest that locations further south in Mali are more problematic in terms of protection incidents than would be assumed based on the security situation alone, and this is supported by discussion with the MMC supervisor in Mali, who points to specific areas on the route between Bamako and Mopti which are prone to protection incidents. It may also be that methodological considerations come into play as no 4Mi surveys are carried out further north than Timbuktu/Ber and Gao, meaning that there is less chance to report incidents that occur in these cities.

82 IASC/European Commission (2019) [Mali - INFORM Risk Index 2019](#)

83 Raineri, L. & Golovko, E. (2019) op. cit.

I. Descriptive statistics on total number of incidents

n	10,239 – 9,827
Missing	99 – 511
Mean	2.24
Median	2
Mode	0
Standard deviation	2.62
Minimum	0
Maximum	43
25th percentile	0
50th percentile	2
75th percentile	3

J. Multiple linear regression results

Predictor	Estimate	SE	t	p
Intercept ^a	2.45075	0.21366	11.4705	< .001
Gender:				
Female – Male	-0.24417	0.06644	-3.6749	< .001
Origin:				
ECOWAS – Central Sahel	0.62132	0.07006	8.8677	< .001
Other – Central Sahel	0.44267	0.13002	3.4045	< .001
Origin Language:				
Non-Francophone – Francophone	-0.03962	0.06687	-0.5925	0.554
Smuggler Used:				
Yes – No	0.92175	0.07253	12.7085	< .001
Working for next stretch:				
Yes – No	0.15715	0.05902	2.6629	0.008
Destination:				
North Africa – Europe	0.17132	0.06687	2.5617	0.01
Other – Europe	-0.46922	0.10508	-4.4653	< .001
Other Africa – Europe	0.23782	0.0928	2.5628	0.01
4Mi survey city:				
Ber – Agadez	-3.81643	0.14786	-25.8114	< .001
Bobo Dioulasso – Agadez	-2.73626	0.13393	-20.4301	< .001
Diffa – Agadez	-3.16694	0.21575	-14.6787	< .001
Dori – Agadez	-2.75152	0.12246	-22.4684	< .001
Gao – Agadez	-3.53194	0.13161	-26.8363	< .001
Kantchari – Agadez	-2.73553	0.13308	-20.5547	< .001
Kayes – Agadez	-0.72356	0.17055	-4.2426	< .001
Mopti – Agadez	0.32269	0.1209	2.669	0.008
N'guigmi – Agadez	-3.43191	0.22729	-15.0992	< .001
Niamey – Agadez	-2.48279	0.1347	-18.4317	< .001
Tillabéry – Agadez	-2.99455	0.20204	-14.8213	< .001
Timbuktu – Agadez	-3.4416	0.11366	-30.2785	< .001
Age	0.01243	0.00592	2.1	0.036
Religion:				
Animism – Islam Sunni	-0.25953	0.26074	-0.9954	0.32
Buddhism – Islam Sunni	-0.79687	1.52189	-0.5236	0.601
Christianity (Orthodox) – Islam Sunni	0.32354	0.31875	1.015	0.31
Christianity (Roman catholicism) – Islam Sunni	-0.16649	0.06683	-2.491	0.013
Christianity (protestant) – Islam Sunni	-0.10145	0.11647	-0.871	0.384
Islam (Shia) – Islam Sunni	0.27919	0.09577	2.9153	0.004
Other – Islam Sunni	0.13182	0.3486	0.3781	0.705
Refused – Islam Sunni	0.1287	0.18464	0.6971	0.486

Children:				
Yes, I have eight or more children – No	-1.50477	1.08868	-1.3822	0.167
Yes, I have four-seven children – No	0.32365	0.24446	1.3239	0.186
Yes, I have one child – No	0.44464	0.07419	5.9935	< .001
Yes, I have two-four children – No	0.08139	0.10405	0.7822	0.434
Marital status:				
Divorced/Separated – Single	-0.34419	0.11808	-2.9148	0.004
Married – Single	-0.45288	0.08695	-5.2085	< .001
Refused – Single	0.11052	0.58355	0.1894	0.85
Widowed – Single	-0.3386	0.24407	-1.3873	0.165
Education:				
Advanced/Master degree – No education	-0.00207	0.18795	-0.011	0.991
Associate or bachelor degree – No education	0.13225	0.13002	1.0171	0.309
Primary school – No education	0.23659	0.08925	2.6507	0.008
Refused – No education	0.69096	0.52877	1.3067	0.191
Religious education – No education	0.21306	0.10596	2.0107	0.044
Secondary or high school – No education	0.73139	0.09358	7.8152	< .001
Vocational training – No education	0.31477	0.10576	2.9763	0.003
Occupation:				
Business owner – Unemployed	0.80136	0.24403	3.2839	0.001
Civil servant (government official) – Unemployed	1.82295	0.50251	3.6277	< .001
Farmer/farm worker – Unemployed	0.34588	0.09779	3.537	< .001
Labourer – Unemployed	0.04066	0.08067	0.504	0.614
Other – Unemployed	0.24454	0.09648	2.5345	0.011
Police/military – Unemployed	0.78602	0.96625	0.8135	0.416
Professional – Unemployed	0.12783	0.24735	0.5168	0.605
Refused – Unemployed	0.03895	0.33386	0.1167	0.907
Service industry – Unemployed	0.96646	0.08144	11.8668	< .001
Student – Unemployed	-0.12687	0.11656	-1.0885	0.276
Departure area:				
Refused – Rural	-0.53552	0.76856	-0.6968	0.486
Suburban/Periurban – Rural	0.06934	0.1529	0.4535	0.65
Urban – Rural	0.17701	0.08327	2.1256	0.034
Journey duration (days)	7.92E-04	8.19E-05	9.6663	< .001

Note. Dependent variable: Total number of incidents. Model measures: $F = 81.6$, $df1 = 59$, $df2 = 7,436$, $p < .001$, $R^2 = .393$. Highest VIF = 1.49, lowest tolerance value = 0.67.



The MMC is a global network consisting of seven regional hubs and a central unit in Geneva engaged in data collection, research, analysis and policy development on mixed migration. The MMC is a leading source for independent and high-quality data, research, analysis and expertise on mixed migration. The MMC aims to increase understanding of mixed migration, to positively impact global and regional migration policies, to inform evidence-based protection responses for people on the move and to stimulate forward thinking in public and policy debates on mixed migration. The MMC's overarching focus is on human rights and protection for all people on the move.

The MMC is part of and governed by the Danish Refugee Council (DRC). Global and regional MMC teams are based in Amman, Copenhagen, Dakar, Geneva, Nairobi, Tunis, Bogota and Bangkok.

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