MIGNEX

MIGNEX Background Paper

A Qualitative Comparative Analysis of the determination of migration processes

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MIGNEX

MIGNEX (Aligning Migration Management and the Migration-Development Nexus) is a five-year research project (2018–2023) with the core ambition of creating new knowledge on migration, development, and policy. It is carried out by a consortium of nine partners in Europe, Africa and Asia: the Peace Research Institute Oslo (coordinator), Danube University Krems, University of Ghana, Koç University, Lahore University of Management Sciences, Maastricht University, ODI, the University of Oxford and Samuel Hall.

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MIGNEX Background Papers

The MIGNEX Background Papers are scientific papers containing the documentation and analyses that underpin the project results. Selected insights from background papers are also presented in non-technical form in other formats, including MIGNEX Policy Briefs and MIGNEX Reports.

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A Qualitative Comparative Analysis of the determination of migration processes

There is a strong interplay between root causes, policies, and networks driving migration aspirations and out-migration intensity among 26 MIGNEX research areas in 10 African and Asian countries.

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No single root cause is identified as strictly necessary nor sufficient for driving migration aspirations or actual migration behaviour, reflecting the complexity of migration determinants.

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Elevated international migration aspirations are shaped by a nuanced interplay of socio-cultural and political-economic factors, where a culture of migration and limited involvement of migration-related policies assume pivotal roles.

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A firmly ingrained culture of migration and strong migration aspirations are central, yet not sufficient on their own in generating high out-migration. Complementary local factors give rise to distinctive out-migration patterns.

Introduction

Addressing the drivers of migration has become a central strategy for the European Union (EU) to manage the movements of people from middle- or low-income countries. There is a widespread belief that poverty, conflict, and, more recently, environmental degradation and hazards are the primary drivers of migration and displacement. Hence, it is imperative to comprehend and address the social, economic, and political conditions that compel people to leave their homes. As a result, incorporating migration-related programming in development and foreign policy has become an integral aspect of the European Union's migration policy in its external dimension.

In light of this growing importance of addressing the drivers of migration, this research aims to provide a comprehensive understanding of the complex factors influencing migration aspirations and behaviour. The central question driving this study is: *What are the necessary and sufficient conditions that explain differences in migration intensity and aspirations?*

Background and state-of-the-art

European policy adopted the root causes doctrine in the 1980s, gaining momentum throughout the 1990s and becoming an integral part of migration and development policies by the 2000s (Castles and Van Hear 2011). While the idea of reducing migration pressure through humanitarian aid and development cooperation is therefore not new, it has gained renewed attention since 2015.

One of the significant policy measures implemented in the last decade is the 2015 the "European Union Emergency Trust Fund for stability and addressing root causes of irregular migration and displaced persons in Africa" (EUTF). This initiative allocates funds to projects with the aim of achieving multiple objectives, including enhancing stability, improving the management of migration, and tackling the fundamental factors behind destabilization, forced displacement, and irregular migration. These efforts focus, for example, on promoting resilience, creating economic and equal opportunities, enhancing security and development, and addressing human rights violations (EUTF 2016:2).

Thus, the establishment of the EUTF reflects the renewed interest in tackling the so-called root causes of migration. This is re-iterated in the new 'Neighbourhood, Development and International Cooperation Instrument – Global Europe' (NDICI – Global Europe) which was adopted in 2021 and where "Indicatively, 10% of NDICI – Global Europe should be dedicated to action supporting the management and governance of migration and forced displacement, and addressing the root causes of irregular migration and forced displacement when they directly target specific challenges relating to migration and forced displacement" (European Commission 2023).

This objective illustrates the European Union's intention to prevent, control and limit international out-migration from third countries, which entails reducing the numbers of asylum-seekers and 'irregular' migrants arriving in Europe. This approach is based on certain assumptions: first, that it is feasible to pinpoint these underlying 'root causes'; second, that policy measures designed to address them are effective; and third, that this will indeed lead to a decrease in the outflow of migrants.

However, the effectiveness of this approach remains a subject of debate. Critics of such a 'keep-in-place policy' argue that viewing migration and development in isolation from broader issues of global power, wealth, and inequality is a shortcoming (Castles and Miller 2009). They emphasise that 'development' itself is a multidimensional concept that influences migration in various ways, warranting a more comprehensive examination and policy approach.

In this context, the Migration-Development Nexus (MDN) is proposed as a multifaceted concept that frames the intricate relationship between

migration flows and development processes in both sending and receiving countries (Faist 2008). Initially introduced by Nyberg-Sørensen et al. (2002), the MDN encompasses a range of mechanisms through which migration and development dynamics influence each other. Recognising migration and development as individual as well as systemic phenomena, the MDN highlights the complexities inherent in understanding the interplay between these two critical aspects.

Additionally, the concept of migration drivers has emerged as a popular notion, suggesting more complex causal mechanisms at play rather than simple ‘root causes’ or basic ‘push and pull’ factors. In contemporary migration literature, it is evident that migration is often triggered by a combination of interrelated drivers, forming what scholars refer to as "driver complexes" (van Hear et al. 2018). People’s day-to-day decisions and longer-term life choices, relationships, and societal contributions are influenced by a complex array of economic, social, cultural, political, and environmental factors (Black et al. 2022). Thus, scholarly consensus has emerged on the complexity of migration and migration-decision making.

However, a precise and consistent definition of what constitutes ‘the root-causes of migration’ remains elusive. The MIGNEX project suggests the following definition to serve as a foundation for the subsequent analysis:

> Root causes of migration are widely experienced hardships to which migration is a possible response, that are perceived to be persistent, immediately threatening, or both (MIGNEX Background Paper 6.1).

Considering policy interventions, the notion that "development instead of migration" policies effectively reduce migratory flows faces challenges from academic literature and historical experiences. Economic studies have demonstrated that higher levels of economic and human development do not automatically lead to reduced migration but, rather, result in increased migration levels overall, at least in the short-to medium-term. This phenomenon, known as the "inverted U-curve" on emigration, suggests that migration decreases only after prolonged economic growth (Zelinsky 1971; Skeldon 2012; de Haas 2006; de Haas 2010b; Clemens 2014). Development initiatives have therefore been shown to either increase migration capabilities and aspirations or to have a limited impact on reducing people's propensity to migrate (Nyberg-Sorensen et al. 2002; Stalker 2002; de Haas 2006; Berthélemy et al. 2009; Parsons et al. 2014).

Despite this evidence, many countries in the global north continue to pursue development policies with the aim of reducing so-called ‘migratory pressure.’ However, these policies often rest on an inaccurate understanding of the developmental causes of migration. Research reveals that the primary drivers of relatively costly and risky international migration are not solely the hunger or poverty (de Haas 2006). For instance, poverty eradication policies have had limited success in curbing rural-urban or international migration (de Haas 2007; Clemens 2014) as other socio-economic forces play more significant roles. It becomes evident that relative deprivation, stemming from global disparities in life perspectives, rather than absolute or chronic poverty, emerges as a major driver behind migration (Czaika and de Haas 2014). This highlights the significance of adopting a comprehensive

developmental approach when conceptualising migration aspirations and outcomes.

Research gaps

Consequently, several research gaps exist that warrant further investigation and exploration. Addressing these gaps require a deeper understanding of the complex interactions between fundamental migration drivers, evolving migrant and migration networks, and migration-relevant policies, all of which may inform more effective policy interventions. Some research gaps this paper aims to address include:

1. *Individual aspirations and migration decision-making.* While the Migration Aspirations and Capabilities Framework provides valuable insights into migration aspirations and capabilities, there is limited research on how aspirations are formed and how they interact at an aggregated level with other factors in shaping migration decisions and outcomes. Investigating the role of personal, social, and cultural factors in shaping migration aspirations and behaviours can enhance our understanding of individual-level migration dynamics. There is still limited research on the determinants affecting the conversion of migration aspirations into actual migration.
2. *The role of social and cultural capital.* Migration capabilities are influenced by access to various resources or "capitals," including social and cultural capital. Further research is needed to understand the role of social networks, community ties, and cultural norms in shaping migration aspirations and facilitating or constraining migration outcomes.
3. *Contextualisation of "driver complexes".* Contemporary migration literature has introduced the concept of "driver complexes," which refers to the interplay and interrelatedness of multiple migration drivers. However, there is a lack of comparative empirical research on the specific configurations and interactions of such driver complexes in different contexts. Further studies are needed to unravel driver complexes and their implications for migration outcomes.
4. *Development drivers of migration operating in conflict and environmental crisis contexts.* Research on migration drivers often focuses on non-conflict and conflict scenarios separately, but there is a gap in understanding how development processes and policies interact with migration dynamics in conflict and environmental crisis contexts. Exploring the complexities of migration and developmental drivers in such settings can inform humanitarian and development responses.
5. *Migration-related policy interventions and migration outcomes.* Despite evidence challenging the effectiveness of "development instead of migration" policies in reducing migratory flows, there is a lack of research comparing different types of migration-related policy interventions and their specific impacts on migration outcomes. Examining the nuances of development policies and their differential effects on migration can offer valuable insights for policy design. More specifically, there is a need for rigorous evaluations of migration information campaigns and development aid policies to assess their actual impacts on migration aspirations and outcomes. Comparative

studies that examine the effectiveness of different policy interventions can provide evidence-based guidance for policymakers.

Furthermore, we advance a multidimensional thinking about development, because oftentimes “questions are posed about how migration affects the process of development, without asking what development means” (Bakewell 2008 1342). By following the definition of development as concrete ‘developments’ we aim to also bridge both non-economic and economic migration determinants. That is, "development" is not limited to economic growth or financial indicators alone. Instead, it refers to tangible, real-world changes and improvements in various aspects of life. These changes could encompass improvements in education, healthcare, infrastructure, social services, governance, and overall well-being and quality of life. In this context, development is seen as a multidimensional concept that includes both economic and non-economic aspects.

These different aspects may then impact migration directly or indirectly as well as in isolation or conjointly. For instance, consider a region that has witnessed significant economic development in recent years, leading to job growth, increased incomes, and enhanced infrastructure. These economic 'developments' may indeed dissuade potential migrants from leaving in search of better economic prospects within their region. However, development in this region may not be limited to the economy alone. There may have also been improvements in healthcare services, education services, and safety. This implies that out-migration (as much as in-migration) isn't solely driven by economic factors but is also influenced by improvements in various aspects of life, both economic and non-economic.

Using Qualitative Comparative Analysis (QCA), this paper seeks to shed light on the complexities surrounding migration aspirations and realisations in 26 locations across ten African and Asian countries, investigating the necessary and sufficient conditions that explain the differences in migration intensity and aspirations. QCA is a helpful method for explaining the relationship between certain conditions and an outcome through the concept of sets and their relations. With this method the paper aims to identify the fundamental, structural root causes, drivers, and factors that shape migration aspirations and realisation. In this endeavour, the impact of migration-relevant development policy interventions on migration processes, particularly aspiration formation and behaviour, will be scrutinised.

To guide this exploration, the paper will utilise the aspiration-capabilities framework and the two-step approach to migration as theoretical frameworks. By adopting a comprehensive approach, this research aims to enhance our understanding of the intricate root causes of migration and how they interact to influence migration aspirations and outcomes. Additionally, it tests the impact of specific policies on migration outcomes when considered as part of the broader landscape of migration drivers.

The subsequent sections of this paper are structured as follows: The next section presents an integrated framework for analysing the impact of structural migration drivers in their interaction with selected forms of policy interventions on the two-step process of forming migration aspirations and migration outcomes. The subsequent sections, “*The MIGNEX QCA*

Methodology" and "*MIGNEX QCA Model Specifications and Operationalisation,"* detail the fundamentals of out methodological approach and introduce the model specifications used in the analysis of complex driver-policy configurations in 26 research areas across ten African and Asian countries. The section "*Analysis and Results: Driver Configurations for Migration Aspirations and Intensity"* elaborates on the analytical findings, their robustness, and the insights gained from the multiple fuzzy set QCAs explaining the migration aspirations and actual migration outcomes at regional levels. The penultimate section, "*Synthesis and Discussion of Main Findings,"* delves into the most significant findings. Finally, the "Conclusion" section wraps up with a discussion of the implications for our understanding of the migration-development nexus.

Migration aspirations and decisions: the interplay of multiple driver domains

Migration drivers and determinants are the factors that influence a person's aspirations and decision to migrate from one place to another. Migration drivers and determinants are closely linked yet distinct concepts that shed light on why people may want to, and ultimately choose to migrate. *Migration drivers* are the overarching, broad forces that motivate individuals or groups to leave their place of origin. They serve as the primary catalysts for migration and often arise from macro-level factors like economics, politics, environment, or conflict. Common drivers include economic opportunities, political instability, armed conflict, environmental disasters, and the pursuit of a higher standard of living. Importantly, these drivers create the conditions for migration but don't dictate individual choices.

In contrast, *migration determinants* are specific, personalised factors influencing the migration decisions of individuals or households. They operate at a micro-level and interact with broader migration drivers. Examples include family circumstances, education, skills, personal networks, or financial resources. When people decide to migrate, their determinants can range from job offers to family reunification, social connections at the destination, or personal preferences. Migration determinants are individual filters that interpret and respond to the broader migration drivers and vary among migrants. Thus, migration drivers create the conditions for migration, while migration determinants are individual factors guiding the decision to migrate in response to those drivers.

At the individual level, the Migration Aspirations and Capabilities Framework (de Haas 2021), drawing inspiration from Amartya Sen's capabilities approach (2001), provides valuable insights into human mobility. Migration aspirations refer to individuals' perceptions of migration as a desirable life project, signifying a preference for migrating over staying. Unlike migrants' intentions, aspirations are abstract, dynamic, and influenced by information, perceptions, and value systems (Schapendonk 2011). On the other hand, migration capabilities represent people's ability to actualise their migration aspirations, influenced by regulations and access to various resources or "capitals" (Bourdieu 2021).

Conceptualising migration as a function of aspirations and capabilities to migrate aids in achieving a more meaningful understanding of agency and structure in migration processes. Furthermore, recognising the diversity of aspirations across societies and their continuous evolution, migration can be viewed as a driver for human development, enhancing freedom and capabilities.

In the field of migration studies, Jørgen Carling's "aspiration-ability framework" introduced in 2002 offers a valuable and nuanced perspective on understanding migration decisions (see Figure 1). This model focuses on the interplay between two key factors: migration aspirations and migration abilities, which jointly shape an individual's likelihood of undertaking international migration.

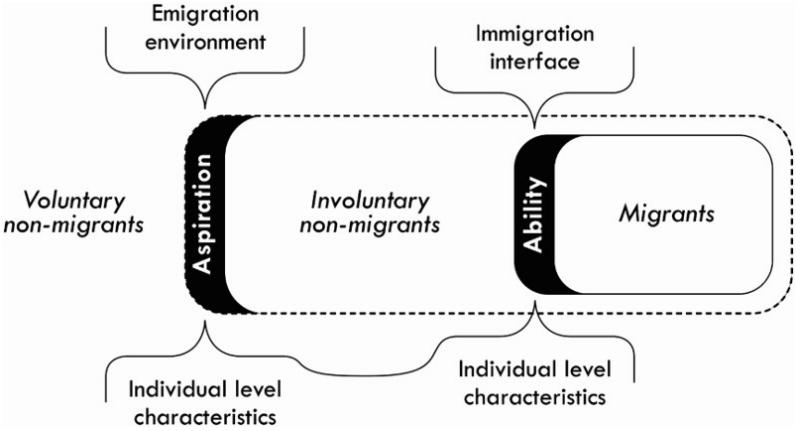

Figure 1. The aspiration-ability model (Carling 2002)

Migration Aspirations This component of the model refers to an individual's desire or aspiration to migrate to another country. Migration aspirations are influenced by various factors, including perceived opportunities abroad, expectations of a better life, and the influence of social networks. People may aspire to migrate for various reasons, such as economic opportunities, improved living conditions, or the desire to join family members who have already migrated.

Migration Abilities The concept of migration abilities encompasses the practical aspects that determine an individual's capability to migrate. This includes factors like access to resources (financial, social, and human capital), legal opportunities for migration, and the ability to overcome potential obstacles such as border restrictions, language barriers, and other logistical challenges.

Carling's framework posits that both aspirations and abilities are essential, and their interaction is crucial in explaining international migration. Specifically, the model suggests four potential scenarios:

- *Low Aspirations, Low Abilities: In this scenario, individuals lack both the desire to migrate and the means to do so. Consequently, they are unlikely to engage in international migration.*
- *High Aspirations, Low Abilities: This situation involves individuals who possess a strong desire to migrate but lack the necessary resources or*

access to legal avenues. While they may want to migrate, their actual migration remains constrained due to these limitations.

- *Low Aspirations, High Abilities: Individuals with ample resources and access to legal pathways may have the ability to migrate, but they lack the desire or motivation to do so. In this case, migration is less likely because aspirations are low.*
- *High Aspirations, High Abilities: This is the scenario where both strong aspirations and the ability to migrate align. These individuals are the most likely to engage in international migration because they have both the desire and the means to make it happen.*

The aspiration-ability model acknowledges that migration is a complex decision influenced by various personal, social, economic, and structural factors. It emphasises that the interaction between aspiration and ability is crucial for understanding why some individuals choose to migrate while others do not.

The Two-Step Approach to individual migration decision-making represents an analytical framework that shares the basic logic of the aspiration-ability model. It places significant emphasis on understanding the thoughts and emotions that precede migration outcomes (Carling and Schewel 2018). This approach recognises that migration aspirations, which encompass individuals' desires and intentions to migrate, may or may not translate into actual mobility. Therefore, to gain a comprehensive understanding of migration patterns, it is essential to delve into both the formation of migration aspirations and the subsequent realisation of these aspirations into actual migration (Carling 2019; Carling and Schewel 2018). Building on the premise of the two-step approach, that migration aspirations may not result in actual mobility, this paper delves deeper into the determinants which may affect such differences in outcomes.

As mentioned in the introduction, migration research has conceptualised such determinants also in terms of migration drivers or driver complexes, while policy actors more frequently refer to the root causes of migration. In the development of an extensive migration driver taxonomy, Czaika and Reinprecht (2022) introduce the concept of the "configured migration driver environment." This concept acknowledges that migration drivers can exert both direct and indirect influences on migration decisions. Czaika and Reinprecht delineate nine dimensions of migration drivers, encompassing various facets of the migration decision-making process: demographic, economic, environmental, human development, individual, politico-institutional, security, socio-cultural, and supranational (ibid). In this Background Paper, the focus centres on four overarching driver domains measured at the research area level, which have significant implications for migration aspirations and outcomes: economic, security and conflict, governance, and environmental factors. Additionally, the study incorporates a well-established culture of migration (hereinafter also referred to as ‘migration culture’) as a structural, facilitating driver of migration, recognizing the role of cultural norms and practices in shaping migration behaviour (Carling 2002; Massey et al. 1994). These core driver domains are then subjected to testing in conjunction with migration-related policy interventions, focusing on migration information campaigns and local

(micro-level) development aid. These interventions usually aim to address the root causes of migration and influence individuals' migration aspirations and capabilities (UNDP 2021; Carling 2008).

Utilizing the aspirations-capabilities framework as its conceptual cornerstone, this study formulates theoretical expectations to assess the outcome levels of migration aspirations and migration intensity under various conditions in 26 research areas. However, it is important to acknowledge that these relationships can be complex and subject to variation. For instance, while impoverished livelihoods and economic poverty are expected to increase migration aspirations due to the desire for improved opportunities, they may simultaneously diminish actual migration capabilities by imposing financial constraints and limiting access to resources (Stark and Taylor 1991; De Jong and Gardner 1981). Therefore, understanding the interplay between migration drivers, aspirations, and capabilities is essential for gaining insights into the complex dynamics of migration decision-making and its resulting outcomes (Carling and Schewel 2018; Massey et al. 1994; de Haas 2021).

In the subsequent section, we delve into a succinct literature review to expound on how migration outcomes and drivers of migration can be defined, conceptualised and what their expected theoretical relationship is. This preparatory step allows us to subsequently outline our models for the QCA analysis, which we refer to in “The MIGNEX QCA Methodology”.

Migration outcomes

Migration aspirations

Migration aspirations refer to individuals' desires and intentions to move from their current place of residence or origin to another location, often within the same country or to a different country. These aspirations are a fundamental aspect of the migration decision-making process and represent the first step in the complex journey from considering migration to taking concrete steps to move. Understanding migration aspirations is essential in migration research and policy, as they provide insights into why individuals or households contemplate migrating and what factors influence their decision-making.

Migration aspirations are inherently complex and multifaceted. They involve a combination of individual, household, and contextual factors that shape individuals' desires to migrate (Piper 2015). Scholars have conceptualized migration aspirations in various ways. Some view them as individual-level preferences, reflecting personal desires to seek better opportunities, improve living conditions, or escape unfavourable circumstances (de Haas 2010b).

Migration aspirations are dynamic and context dependent. They can change over time in response to changing circumstances, opportunities, and external influences (de Haas 2010b). Multiple factors influence migration aspirations. These factors can be categorized into economic, social, political, environmental, and informational drivers (Hugo 2019). Economic factors, such as income disparities and employment prospects, often play a significant role in shaping aspirations. Social factors, including family

members or peers who have migrated or encourage migration, can also influence individuals' desires to move. Political instability, conflict, and environmental degradation may drive migration aspirations, as individuals seek safety and stability. Additionally, exposure to migration-related information, often facilitated by digital connectivity, has emerged as a significant driver in recent years (Grubanov-Boskovic et al. 2022).

While migration aspirations represent the first step in the migration decision-making process, they do not always translate into actual migration. There can be a gap between aspirations and realized migration, influenced by various factors. Legal barriers, such as visa restrictions and immigration policies, can limit individuals' ability to fulfil their aspirations. Financial constraints, including the cost of migration and lack of resources, can also hinder migration. Changing life circumstances, such as marriage, parenthood, or career opportunities, may alter migration plans (Aslany et al. 2021).

Much of the literature on migration aspirations focuses on individuals from low- and middle-income countries aspiring to move to more developed regions. Researchers have explored how global economic inequalities, educational aspirations, and perceptions of opportunity impact these migration desires (Adams and Page 2005; Taylor 1999).

In summary, migration aspirations represent individuals' desires and intentions to migrate, serving as a crucial starting point in the migration decision-making process. These aspirations are influenced by a wide range of factors and can vary over time and across contexts. Understanding migration aspirations is essential for comprehending migration dynamics and designing effective migration policies and interventions.

Migration decisions and behaviour

Migration decisions represent a commitment to act on one's aspirations (Carling and Schewel 2020). These decisions entail a deliberate planning process that includes setting goals, assessing the feasibility of the move, and making necessary arrangements. Planning may encompass finding suitable housing, securing employment, or fulfilling legal requirements.

Migration decisions result in the realisation of migration aspirations. Once individuals or households make a decision and take the necessary steps, they physically relocate to their chosen destination to pursue their goals, whether that involves moving within their own country or across international borders. These decisions involve formalising the intent to migrate, including actions such as applying for a visa, securing employment or housing in the destination, and making transportation arrangements. This formalisation marks the point at which migration aspirations transition into concrete plans. Additionally, migration decisions necessitate practical considerations, including logistical planning, financial preparations, and compliance with legal requirements. Consequently, external factors play a significant role in shaping migration decisions. Government policies, visa regulations, and economic conditions can facilitate or hinder the realisation of migration plans (Czaika and de Haas 2013). Changes in immigration policies, for instance, can impact an individual's ability to move to a specific country.

Migration decisions often carry a degree of risk and uncertainty, with individuals and families facing uncertainties related to employment stability, cultural adaptation, and potential challenges in the new environment (Czaika et al. 2021). These uncertainties can influence the timing and nature of migration decisions. It's important to note that even after a decision is made, uncertainties and challenges can arise in the migration process. These may include unexpected legal hurdles, changes in economic conditions, or difficulties in adapting to the new environment.

Ultimately, migration decisions result in concrete outcomes, including the physical relocation of individuals or families to a new location. The impact of migration decisions can be profound, affecting not only the migrants themselves but also their families, communities, and the societies in both their origin and destination.

In summary, migration aspirations are the initial desires and intentions to move, influenced by motivations and perceptions. In contrast, migration decisions represent the commitment to act on those aspirations through planning and action. The transition from aspirations to decisions is a dynamic and complex process shaped by various internal and external factors. Migration, as a multifaceted phenomenon, encompasses both the inner aspirations that drive people to seek new opportunities and the practical decisions that enable them to embark on their migration journey.

Migration intensity serves as a metric to gauge the aggregation of individual migration decisions and the concrete migratory outcome within a population. Typically, it pertains to the volume or rate of people leaving from a specific area, such as a region, country, or rural community, over a designated timeframe. This measure is often quantified as the number of outmigrants per unit of the population. Therefore, while individual migration decisions are undoubtedly influenced by an array of factors encompassing economic, demographic, environmental, political, and social dimensions, the aggregated outmigration intensity equally results from the intricate interplay of some fundamental migration drivers.

Fundamental migration drivers

Traditionally, discourses surrounding migration have predominantly revolved around economic considerations, such as employment opportunities and income disparities. However, a comprehensive understanding of migration necessitates acknowledging the profound impact of non-economic drivers, including social, political, environmental, and also personal factors. All these factors play a substantial role in shaping migration outcomes.

Building upon our assessment of the current state of knowledge, we have identified six foundational domains of migration drivers. These domains wield significant influence over individual migration aspirations and decisions, thereby exerting a profound effect on the broader outcomes of migration.

Poverty and livelihoods

Neoclassical migration theory, as proposed by Harris and Todaro in 1970, posits that individuals and households embark on migration journeys in pursuit of improved economic opportunities, such as better-paying jobs and increased income. This perspective forms the foundation for understanding the role of economic factors in migration decision-making (Harris and Todaro 1970). Quantitative studies have corroborated the significance of economic factors in shaping migration outcomes. These studies reveal that migration flows are responsive to various economic indicators (incl. unemployment rates, wage differentials, job availability, or local amenities) in the home country or in potential destination countries, or both.

It is worth noting that economic factors are predominantly examined from the perspective of the destination country, which may introduce an inherent bias towards the receiving side of migration. In analyses on migration aspirations, individual-level factors, such as employment status, job satisfaction, and expectations regarding future career prospects, exert notable influences (Dustmann and Okatenko 2014). However, the relationship between unemployment and migration aspirations is nuanced. While economic hardship and unemployment can act as push factors, motivating individuals to seek better opportunities elsewhere, they can also impose poverty constraints that limit the feasibility of migration (ibid). Hence, it is imperative to acknowledge that economic factors do not operate in isolation; rather, they interact with other contextual elements to shape migration outcomes (Haug 2008).

In addition to monetary considerations, migration decisions are influenced by a spectrum of both material and non-material resources. These encompass educational attainment, access to information and technology, wealth, asset ownership, and property rights. These resources hold sway not only over the decision to migrate but also over the nature of the migration itself. They influence choices such as whether to undertake internal or international migration, the selection of a destination, and the choice of migration channels (Czaika and de Haas 2012; Stark and Taylor 1989).

Financial constraints, for instance, can pose significant barriers to migration, particularly among the most economically disadvantaged segments of the population. As such, the migration opportunities of the poor are different compared to non-poor populations. For example, among the poor there are fewer migrants, and they travel to more feasible destinations with possibly lower returns (Murrugarra et al. 2011).

Furthermore, migration is intricately linked to issues of inequality and relative deprivation, where individuals may be driven to migrate by a sense of feeling comparatively poorer than their peers (Stark and Taylor 1989; Czaika and de Haas 2012). Recent research by Carling et al. (2023) further highlights that low levels of well-being tend to positively influence migration aspirations.

Insecurity, violence and conflict

Civil, ethnic, and religious conflicts, as along with human rights violations, serve as significant drivers of migration, especially among vulnerable

populations, including asylum seekers, refugees, irregular migrants, unaccompanied migrant minors, and internally displaced persons (IDPs) (Moore and Shellman 2004). Initially, concerns for safety and security may dissuade individuals from considering migration, as they hold onto hope for improved conditions in their current location. However, when insecurity persist or crime levels escalate beyond a personal threshold, migration becomes an increasingly compelling option. Both direct violence and broader feelings of insecurity play pivotal roles in motivating migration, a phenomenon supported by studies conducted at both micro and macro levels (Naude 2010). Furthermore, conflict can indirectly fuel migration by affecting critical aspects of daily life, including infrastructure, economic opportunities, and livelihoods. While conflict can be a trigger for migration, it is important to recognize that environmental or political factors may also contribute to the emergence of conflict. In a recent study, Ruhe and Kuhnt (2023) observe that there is no consistent association between household income and an aspiration to emigrate in countries grappling with intrastate conflict. This finding suggests that socio-economic and demographic factors related to migration become less relevant in conflict-affected settings. Nevertheless, the socio-economic repercussions of conflict are not isolated factors but rather interact with various other elements, such as the duration of conflict. For instance, as conflict endures, factors such as market collapse or fluctuating income levels may impose greater strains on individuals and communities, further influencing migration decisions (Erdal et al. 2023).

Governance and public services

Ineffective governance can wield a direct influence on migration, either by depriving individuals of political and civil rights and liberties, or indirectly through its impact on development outcomes. When political conditions deteriorate, it can directly impact migration aspirations, leading residents to lose faith in their local prospects, particularly in cases where these issues are linked to poor economic conditions. Notably, corruption has emerged as a noteworthy driver of migration (Carling et al. 2015). Countries with much corruption are shown to encourage emigration and discourage immigration because they provide worse and unpredictable economic conditions, more insecurity, and a lower quality of life (Poprawe 2015).

The relationship between public infrastructure and migration is multifaceted. High-quality infrastructure can act in two ways, potentially increasing migration by reducing transportation costs while also decreasing migration by improving local economic opportunities (Gachassin 2013). In certain regions, contentment with local public services has been shown to reduce migration intentions (Dustmann and Okatenko 2014). Conversely, disparities in the access and quality of healthcare and education systems can stimulate migration, especially when individuals perceive better opportunities elsewhere. A quality public education system, for instance, can elevate both migration aspirations and capabilities by nurturing cosmopolitan ideals, individual skills and ambitions. However, negative perceptions of governance quality in countries of origin often amplify migration aspirations (Aslany et al. 2021).

Environmental stress and natural disasters

The role of climate change as a driver of both internal and international migration has been extensively studied at both macro and micro levels (Beine and Parsons 2015; Czaika and Münz 2022; Foresight 2011). Climate change can serve as a direct catalyst for displacement, although it is frequently intertwined with an array of social, political, demographic, and economic drivers. This complex relationship between climate change and migration is dynamic and not inherently directional (Parrish et al. 2020).

Slow-onset climate changes, such as variations in temperatures and precipitation, are often associated with emigration, particularly in countries with agrarian economies and rural regions. However, economic factors tend to exert a more pronounced influence when evaluated alongside climate-related factors. Individuals most adversely affected by climate change might find themselves financially constrained, limiting their capacity to migrate internally or internationally, thus curtailing migration as a viable adaptation strategy. Some studies even suggest that climate change may not directly explain migration intentions and behaviour, instead indirectly influencing migration through its impact on economic factors like income, livelihood opportunities, food security, health-related risks, and conflict (Beine and Parsons 2015).

Natural disasters and environmental shocks, such as floods, storms, droughts, and earthquakes, serve as tangible and identifiable triggers for migration. These events often lead to increased internal migration, particularly from rural to urban areas, as well as international migration. While natural disasters typically result in temporary migrations, they can also indirectly impact migration by fuelling conflicts (Naude 2010). Nevertheless, economic drivers, including employment prospects in urban centres, can also influence migration decisions. While economic reasons are frequently cited as migration motivators, it is important to recognise that underlying environmental stress often plays the more fundamental role.

Social networks and cultures of migration

A culture of migration takes shape as migrant networks expand and exert influence on attitudes toward migration among those who remain in their community (Cohen and Sirkeci 2021). Migration can become deeply ingrained in the local culture, perceived as a rite of passage (Conrad Suso 2020; Monsutti 2007). Emigrants often serve as social role models, compelling individuals to consider migration even in the absence of personal migrant networks (Massey 1990). This cultural imprint leads to migration becoming a self-perpetuating norm, the "thing to do" (de Haas 2010a). Numerous studies confirm the profound significance of a culture of migration, often driving individuals to desire migration, even when superior economic opportunities exist locally. Those who opt not to migrate may face social stigma, as well as feelings of shame and embarrassment. Notably, this cultural stigma appears to disproportionately affect men due to the association between migration and masculinity.

The influence of networks with current migrants can shape migration aspirations in communities of origin, both positively and negatively. However, most studies concur that familiarity with current or former

migrants heightens the likelihood of harbouring migration aspirations (Aslany et al. 2021). In general, the presence of international out-migration as a common facet of everyday life, discourses, experiences, and institutions within a research area tends to elevate migration aspirations. This effect is particularly pronounced when combined with robust transnational connections, where migrants and their counterparts in communities of origin establish and sustain links across national borders (Basch et al. 2003; Carling 2008). Well-established migration histories, relationships with current or former migrants, and remittances flows all contribute to encouraging migration aspirations.

Policy interventions: Development aid and information campaigns on migration

Development aid interventions aim to directly or indirectly contribute to various facets of development through initiatives such as technical and vocational education and training (TVET), microfinance schemes, or rural electrification. While these interventions can produce outcomes that affect migration indirectly, they may also yield direct effects on migration itself (Carling and Hernández-Carretero 2011). Residents' perception of their community and its future can be notably influenced by the levels and perceived impacts of these interventions. In cases where residents perceive numerous failed interventions, they may lose faith in local prospects, leading them to contemplate migration as a viable alternative.

Carling et al. (2020) have identified multiple ways in which aid interventions can impact migration. Firstly, aid may enhance the status and reputation of donor countries or affluent nations as desirable destinations for migration (Berthélemy et al. 2009). Secondly, development aid might alleviate the financial constraints of potential migrants, increasing their ability to move (Marchal et al. 2020). Thirdly, when development assistance fosters stronger social, economic, and political connections, migration can become a more viable option. Fourthly, if aid improves conditions within the home country, the opportunity cost of migration rises, making staying more attractive. For instance, improved public goods and services could reduce the inclination to migrate (Lanati and Thiele 2018). Gamso and Yuldashev (2018) have found that governance aid does reduce emigration rates from developing countries, while other types of aid appear not to affect migration.

Lastly, aid transfers provide donor countries with leverage to negotiate policy concessions that can enhance migration control, such as conditioning aid on cooperation with readmission and enforced return policies (Cassarino 2009). Consequently, aid has been found to increase emigration through its effects on incomes and transnational ties (Berthélemy et al. 2009). Although certain forms of aid, such as those targeting rural development or healthcare and education, may reduce emigration under specific circumstances. Nonetheless, these effects remain limited due to the overall limited impact of international aid on development, particularly in the short term (Hansen and Tarp 2000). As such, the extent to which development interventions affect migration aspirations and outcomes also depends on their design and delivery (regarding social protection programmes see Himmelstine et al. (2023) and on TVET see Hennessey and Hagen-Zanker (2021).

Information campaigns are deliberate efforts to inform, persuade, and motivate behaviour through organized communication activities. In the context of migration, these campaigns often aim to deter irregular migration (Pécoud 2010; Oeppen 2016) or more recently emphasize the potential and opportunities of staying in one's home country. However, it is crucial to acknowledge that while these campaigns can be seen as tools for "aspiration management" (Carling and Collins 2018), their effectiveness is constrained by the presence of other influential factors in migration decisions (Tjaden et al. 2018). Potential migrants may underestimate risks, overestimate their chances of success, or possess vague or inaccurate perceptions of life at their intended destination. Moreover, such messages are often dismissed as untrustworthy and biased. Consequently, the actual impact of this approach on influencing migrants' behaviour, decisions, and aspirations remains largely unclear (Rodriguez 2019).

In sum, while economic factors undoubtedly occupy a central role in migration aspirations and behaviour, their influence is mediated by a complex interplay of various non-economic and contextual conditions. Understanding how these factors interact is crucial for comprehending the multifaceted dynamics of migration decision-making (Haug 2008).

The MIGNEX QCA methodology

To analyse the intricate interactions among the identified foundational migration drivers which shape migration aspirations and influence migration behaviour, we have chosen to employ Qualitative Comparative Analysis (QCA) as the appropriate methodology for the following reasons.

Complex configurations of migration drivers. Migration is influenced by a multitude of interrelated factors, including poverty, conflict, environmental degradation, and more (cf. Carling et al. 2023). QCA is well-suited for analysing complex systems with multiple causal pathways, making it ideal for understanding the intricate mix of migration drivers and their interactions. It allows researchers to capture the complexity of the migration phenomenon, which traditional linear models may oversimplify.

Equifinality and conjunctural causation. QCA is particularly useful when there are multiple valid causal pathways (equifinality) and when several factors need to interact conjointly to produce an outcome (conjunctural causation). Given that migration drivers often result in various migration outcomes and require multiple conditions to manifest, QCA can help identify patterns in such scenarios. QCA offers a nuanced and context-dependent approach to causality, recognising that causation in social sciences is rarely a straightforward one-to-one relationship. Instead, it focuses on identifying patterns of explanatory conditions and their interactions (so-called 'configurational causality') that are associated with specific outcomes. This method is particularly useful when dealing with complex social phenomena where multiple factors contribute to the observed migration outcomes.

Necessity and sufficiency of configurational drivers. Migration outcomes, such as variations in outmigration rates, are often the result of complex configurations of driving factors. QCA's ability to assess the necessity and

sufficiency of individual factors within these configurations allows for a nuanced understanding of how different conditions interact to influence migration aspirations and behaviour.

Small and mid-sized datasets. QCA's fuzzy-set analysis is well-suited for research involving small to mid-sized datasets such as the 26 research areas in this study. It is especially relevant when dealing with specific case studies, as in this research, where traditional regression-based methods may not be as applicable or interpretable.

Beyond push and pull factors. QCA enables researchers to move beyond simplistic push and pull factor narratives. Instead, it delves into the interplay and combinations of factors, shedding light on how they collectively shape migration outcomes. This approach aligns well with the recognition that migration is influenced by a myriad of economic, social, cultural, political, and environmental factors.

Policy effectiveness assessment. Given the policy-oriented nature of the research, QCA can assess the effectiveness of various policy interventions in shaping migratory flows. It can explore under what conditions specific policies are necessary and sufficient to produce desired outcomes, offering valuable insights for policymakers.

Overall, QCA aligns with the need for a comprehensive understanding of migration drivers and outcomes, which involve multiple factors and their interactions. It can help identify which factors are essential (necessary) and under what conditions they are effective (sufficient), contributing to a holistic comprehension of the migration phenomenon. By systematically examining the complex interactions between migration drivers, networks, and policies, QCA can address the identified research gaps, such as the role of social and cultural capital, the dynamics of driver complexes, and policy impact on migration outcomes.

The following research process includes the selection of 26 research areas within the MIGNEX project, defining outcomes and explanatory conditions and calibrating relevant data, specifying QCA models for migration aspirations and intensity, generating truth tables, and conducting data minimization and sensitivity analysis. This rigorous process aims to gain deeper insights into the intricate causal relationships driving migration aspirations and behavioural outcomes. Annex 1: "Details of the QCA methodology" and MIGNEX Handbook Chapter 13 (Czaika and Weisner 2023) explains in more detail the technical aspects of the QCA methodology, while the following sections explain the conceptualisation and operationalisation of the various models specified in this study.

Case selection: the 26 MIGNEX research areas

The process of defining and selecting cases constitutes a pivotal phase in the QCA research methodology, exerting significant influence on the diversity of outcomes and conditions within the sample. This, in turn, carries substantial implications for the analytical outcomes and findings of QCA solutions, thereby shaping the contributions of the MIGNEX project towards a deeper comprehension of migration driver complexes spanning ten countries and encompassing 26 distinct research areas (Figure 2).

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In our QCA analysis, we treat each of the 26 research areas (RA) as individual cases. These cases may encompass diverse geographical regions, ranging from towns and city segments to rural areas, provided they meet specific criteria. Administrative boundaries are not a strict requirement. The selection of these research areas is conducted with the aim of ensuring diversity in both outcomes and conditions. The population size of these research areas typically falls within the range of 10,000 to 100,000 inhabitants, primarily determined by factors such as population density, security considerations, and infrastructure standards.

The MIGNEX research area selection process was further guided by the pursuit of dissimilarity in specific developmental aspects, with the objective of capturing unique configurations of these developments (see MIGNEX Handbook chapter 6). These developments encompass a wide spectrum, including severe environmental challenges, substantial shifts in livelihood patterns, fluctuations in security conditions (either improvements or deteriorations), reforms in social protection, expansion of educational opportunities, enhancements in infrastructure, or extended periods of economic stagnation. While certain research areas overtly display some of these developmental facets, others rely on presumed developments that necessitated empirical validation.

Figure 2. The 26 MIGNEX local research areas

MIGNEX data and data calibration

The MIGNEX survey aims to provide a reasonably accurate representation of the 18-39-year-old population in the 26 different research areas across ten countries (Figure 2). This was achieved by employing a complex three-stage probability-proportional-to-size (PPS) cluster sampling approach, combined with systematic random selection methods. The survey also incorporated individual-level weighting in its analysis. A detailed discussion of the survey's implementation, data cleaning and preparation of weights and

other variables can be found in MIGNEX Handbook Chapter 10 (Hagen-Zanker et al. 2023a).[1][2]

The RAIR coding scales originate from qualitative data sources, such as key informant interviews, focus groups, and in situ observations. For a more comprehensive understanding of these data collection tools and methodologies, readers can refer to the MIGNEX Handbook. Specifically, Chapters 7 and 10 (Hagen-Zanker et al. 2023a; Hagen-Zanker et al. 2023b) provide insights into the survey-related methodology, while Chapters 8 (Erdal and Carling 2020) and 11 (Erdal et al. 2023) delve into the nuances of qualitative data collection and the development of the RAIR coding scales.

To prepare the raw dataset for our QCA analyses, we processed both MIGNEX survey data and qualitative information from the research area interim reports (RAIR).

MIGNEX survey data

The survey adopted a three-stage probability-proportional-to-size cluster sampling strategy with random walks. Since the research area is the analytical unit (cases) for the QCA analyses, we aggregated micro-level data items using sampling weights, which account for the likelihood of selecting households in a cluster sample. Weighted means were calculated for each research area using selected survey items that could serve as measures for the conditions of interest. These survey items utilised various point scales, including 2-point[3], 3-point[4], 4-point[5], 5-point[6], or even 10-point[7] scales. In total, we utilised 39 survey items as raw data to represent the two different outcomes and eight conditions (as detailed in Annex 2: "Operationalisation of QCA model outcomes and conditions").

MIGNEX RAIR coding scales

Qualitative data collection resulted in Research Area Interim Reports (RAIRs) containing coding scales for 19 selected topics. Nine distinct coding scales were employed as raw data input for the outcomes and conditions (Annex 2). These coding scales employed an ordinal scale ranging from 1 to 4, where 1 indicated the relative absence of characteristics and 4 representing their full presence. Although our analysis remains at the research area level, this diverse dataset enables us to draw inferences regarding the relationship between individual/household perceptions and the broader socio-economic structures, as well as their impact on migration aspirations and behaviour.

[1] The MIGNEX survey data collection was piloted in October 2020 (Ghana) finished in February 2022 (Pakistan). In this sense, the MIGNEX survey is not a true cross-section, because the data was collected in different countries at different times (MIGNEX Handbook Chapter 10).
[2] The MIGNEX qualitative data collection was piloted in February 2020 (Cape Verde) and was finished in December 2021 in New Takoradi (Ghana).
[3] *Survey Item C3 "Would you like to go and live in another country sometime during the next five years, or would you prefer to stay in [RESEARCH COUNTRY]?"*
[4] *Survey item I04 "Thinking about your household's current financial situation, would you say your household is (a) difficult to get by, (b) coping, (c) living comfortably?"*
[5] *Survey item I04 "Thinking about your household's current financial situation, would you say your household is (a) difficult to get by, (b) coping, (c) living comfortably?"*
[6] *Survey item D04 "Generally speaking, would you say formal health care in RESEARCH AREA is (a) very bad, b) bad, c) fair, d) good, e) very good?"*
[7] *Survey item J11 "All things considered, how good a job does the municipality do in running RESEARCH AREA? 1 = terrible job to 10= excellent job?"*

Fuzzy-set concept formation of the MIGNEX data

In the context of Qualitative Comparative Analysis, the concepts of 'fuzzy sets' and 'calibration' play pivotal roles in analysing the necessary and sufficient conditions that underlie complex relationships between variables. A fuzzy set serves as a framework for representing the degree of membership of cases in various categories, enabling a detailed analysis of both qualitative data (MIGNEX research area interim reports) and quantitative data (MIGNEX survey).

In QCA, fuzzy sets are essential for depicting the degree of case membership, such as in MIGNEX research areas, within specific categories. Unlike traditional binary set theory, which classifies cases as either part of a set (1) or not (0), fuzzy sets acknowledge varying degrees of membership. They enable the representation of these degrees as values ranging from 0 to 1, indicating how closely a research area aligns with a specific category, such as 'poor livelihoods.'

Fuzzy sets prove highly advantageous in QCA when dealing with cases that don't neatly fit into discrete categories but instead exhibit varying levels of relevance or influence on an outcome. On the other hand, calibration is the process of assigning membership scores to cases (here, MIGNEX research areas) for each fuzzy set involved in a QCA analysis. This process involves determining how closely each case aligns with a particular category or set based on specific criteria or conditions. In the context of QCA, calibration often relies on expert judgment or the use of empirical data to gauge the level of membership of each case in the fuzzy sets. This process can be subjective and may involve qualitative assessments. In the MIGNEX QCA, we utilise raw data from qualitative research area reports and a quantitative household survey, both of which provide relatively objective descriptions of the migration and development phenomenon within and across the 26 MIGNEX research areas.

Based on the two MIGNEX data sources at hand, we implemented a three-step calibration process. First, we defined and calculate 23 indices based on 39 survey items and 9 RAIR coding scales using polychoric principal component analysis. The definitions and respective components of the 23 indices are provided in Annex 2: "Operationalisation of QCA model outcomes and conditions". In the second step, these 23 indices have been further combined into ten 'meta indicators' including two outcomes measuring migration aspirations and migration intensity, respectively, and eight conditions considered theoretically relevant in explaining these migration outcomes.

In each outcome and condition category, multiple indicators assess the scope and complexity of underlying issues. To ensure a high degree of comparability across these categories and indicators, we calibrate indicators according to our directional expectations (e.g., hardships in the case of root causes, 'migration-conduciveness' in the case of the other conditions). When choosing a single variable or constructing an index, we incorporate it in a

manner that aligns with the underlying concept related to migration aspirations (outcome 1) and behaviour (outcome 2).[8]

On both calibration steps, wherever more than two variables (step 1) or indices (step 2) are to be combined, we employ polychoric principal component analysis (PPCA) to operationalise these measures. PPCA is a statistical technique used for analysing relationships between two or more ordinal or categorical variables, which is an extension of traditional Principal Component Analysis, typically applied to continuous variables. The principal components can be interpreted similarly to how they are in traditional PCA, as linear combinations of the original variables. They represent patterns in the data, and we use the first component to reduce the multidimensionality in our variables and indices.

In the last step of this three-step calibration process, we convert the ten composite indices in the raw dataset into a QCA-compatible format known as fuzzy scores. The process of achieving this involves the 'fuzzification' of the 10 raw data indices, transforming them into a 0-1 scale using the min-max scaling technique. This procedure comprises the following steps:

- *Identify the data range: Determine the minimum (min) and maximum (max) values of each variable to be fuzzified within your dataset.*
- *Apply the min-max formula: For each data point (referred to as 'x'), employ the min-max scaling formula: Scaled Value (x_scaled) = (x - min) / (max - min). This formula computes the proportion of 'x' relative to the minimum and maximum values.*
- *Repeat for all data points: Calculate the scaled value for each data point in your dataset using the same formula.*

The outcome will be the fuzzy score matrix which includes for each of the 26 research area cases two outcome and eight conditions scaled within a 0-1 range. Here, 0 represents the minimum value in the original dataset (fully outside of set X), and 1 represents the maximum value (fully within set X). This fuzzy dataset was subsequently employed to represent outcomes and conditions as defined in the model specification for the QCA analysis.

[8] While many survey questions were designed to measure the level of hardship or difficulty experienced by respondents, this was not consistently the case. For example, the 'Perception of government index' averages two variables: 'Perception of the central government' and 'Perception of the local government.' Originally, both variables were rated on a scale of 1 to 10, with 1 indicating 'Terrible' and 10 indicating 'Excellent.' To align with the concept of hardship, we reversed the values of both variables, making 1 signify 'Excellent' and 10 signify 'Terrible,' thereby expressing the index in terms of hardship.

MIGNEX QCA model specifications and operationalisation

Model specifications

Model specification in QCA includes the definition of cases, outcomes, and conditions, as well as the operationalisation of the latter two. After having defined our cases, the second step involves defining the outcome of interest for the QCA analysis and selecting an appropriate measure for it. In alignment with our research questions, we focus on two primary outcomes: 1) the presence of a high level of international migration aspirations and 2) the presence of a high level of international out-migration. It is worth noting that, while our analysis also examines the negation of these outcomes, our primary focus is on their presence. However, this asymmetric analysis of both presence and absence of an outcome is a distinctive feature of QCA, aiding in explaining the factors that drive mobility versus immobility.

The third step entails the selection and justification of a unique set of conditions used in the analysis. As mentioned in the previous section, choosing conditions necessitates a theoretical understanding of the condition-outcome relationship and substantial background research based on empirical and case knowledge (Czaika and Godin 2019). Given the limited number of cases (26), and to maintain a manageable size of the truth table (as the number of conditions determines the number of truth table rows and potential configurations of conditions), our models should not exceed five conditions.

For this analysis, we construct our models in a stepwise manner. We begin by testing for Outcome 1 (aspirations) and then Outcome 2 (intensity). Within these steps, we initially assess the respective ‘core model’ (Model MIG1A and Model MIG2A), comprising five conditions representing the four fundamental root causes (poor livelihoods, weak governance and public services, high insecurity and conflict, high environmental stress) in addition to a strong migration culture. Subsequently, we expand this core model into an extended policy model. In Model MIG1B and Model MIG2B, we examine a combined root causes condition (‘strong root causes’) in conjunction with relevant policy conditions. Finally, in the most comprehensive Model MIG2C, we test the combined root causes condition in conjunction with a strong migration culture, high migration aspirations, high migration feasibility, as well as low level of policy interventions (Table 1).

Table 1. Model specifications

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	Model MIG1A	Model MIG1B	Model MIG2A	Model MIG2B	Model MIG2C
OUTCOME 1 & 2	High Migration Aspirations	High Migration Aspirations	High Migration Intensity	High Migration Intensity	High Migration Intensity
Condition 1	Poor Livelihoods	Strong Root Causes	Poor livelihoods	Strong Root Causes	Strong Root Causes
Condition 2	Weak Governance and Public Services		Weak Governance and Public Services		
Condition 3	High Insecurity and Conflict		High Insecurity and Conflict		
Condition 4	High Environ-mental Stress		High Environmental Stress		
Condition 5	Strong Migration Culture	Strong Migration Culture	Strong Migration Culture	Strong Migration Culture	Strong Migration Culture
Condition 6		Low Policy Interventions		Low Policy Interventions	Low Policy Interventions
Condition 7		High Migration Feasibility		High Migration Feasibility	High Migration Feasibility
Condition 8					High Migration Aspirations

The final step of model specification involves selecting measures to operationalise the outcome and the conditions. For example, in the case of Outcome 1 (Model 1), the “High prevalence of aspirations for international migration” is defined as the “extent to which international migration aspirations are widespread and well-developed.” From the available measures addressing this outcome, we have used a combination of three MIGNEX survey items addressing migration aspirations. This selection aligns with the MIGNEX project’s definition and operationalisation of migration aspirations (cf. MIGNEX Background Paper 6.1). Outcome 2 (Model 2), “High levels of international out-migration”, is defined as the extent to which there is a large outflow of international migrants from the research area. For all QCA models, along with their variants, names, definitions, and measurements of the two different outcomes and all conditions, can be found in Annex 2: "Operationalisation of QCA model outcomes and conditions” and are discussed in the following.

The conditions were chosen based on an extensive literature review on migration drivers (see section “Migration aspirations and decisions: the interplay of multiple driver domains”) and are conceptualised in terms of

their expected contribution (“directional expectations” in QCA) towards the two outcomes.

Outcome specifications

The 26 cases under examination exhibit significant diversity in terms of the two pivotal indicators central to the analysis in this paper, international migration aspirations and out-migration intensity. Drawing upon the extensive data collected through the MIGNEX household survey and the qualitative interviews and assessment that feed into the so-called research area interim report RAIR coding scales, we discern a broad spectrum of attitudes and behaviours towards international migration.

Outcome 1: High international migration aspirations

Data and measurement

For constructing a comprehensive indicator that captures migration aspirations, we use the following three MIGNEX Survey items as measures of a composite indicator of international migration aspirations of respondents:

- *Survey item C03 - "Would you like to go and live in another country sometime during the next five years, or would you prefer to stay in [RESEARCH COUNTRY]?”*
- *Survey item C06 – “During the past year, have you thought seriously about leaving [RESEARCH COUNTRY] to live or work in another country?”*
- *Survey item C08 – “If someone were to give you the necessary papers to live and work in a richer country, would you go, or would you stay in [RESEARCH COUNTRY]”*

These survey items assess individuals' migration aspirations by directly inquiring about their preferences regarding future international mobility. Respondents are given the option to express their desire to move abroad within a specified time frame (next five years) or their preference to remain in the research country. It measures the strength and immediacy of their aspiration to migrate. Thus, respondents who indicate a preference for or considered living in another country within the next five years are expressing a clear migration aspiration. Their affirmative responses signify a willingness and intention to undertake international migration during the specified period, highlighting the immediacy of their aspiration.

We have then generated fuzzy scores of the composite measure that indicates membership in the group of research areas with high prevalence of international migration aspirations. These fuzzy scores are based on the first component of a polychoric principal component analysis (PPCA) that combines the three above-mentioned survey items.

Case distributions

The diversity of research area fuzzy scores on migration aspirations (Figure 3) underscores the complexity of migration dynamics across the geographical scope of the 26 research areas. For instance, when considering the proportion of young adults who express a desire to "leave the country

within the next five years," we observe striking variations. In some research areas like Keti Bandar, PAK3, fewer than five percent of young adults harbour such aspirations. Conversely, in places such as Ekpoma, NGA3, this proportion surges to over 80 percent. This wide-ranging spectrum underscores the multifaceted nature of migration aspirations and their contextual sensitivity. These varying degrees of aspiration for international migration also reflect the unique socio-economic, political, and environmental landscapes within and across research areas.

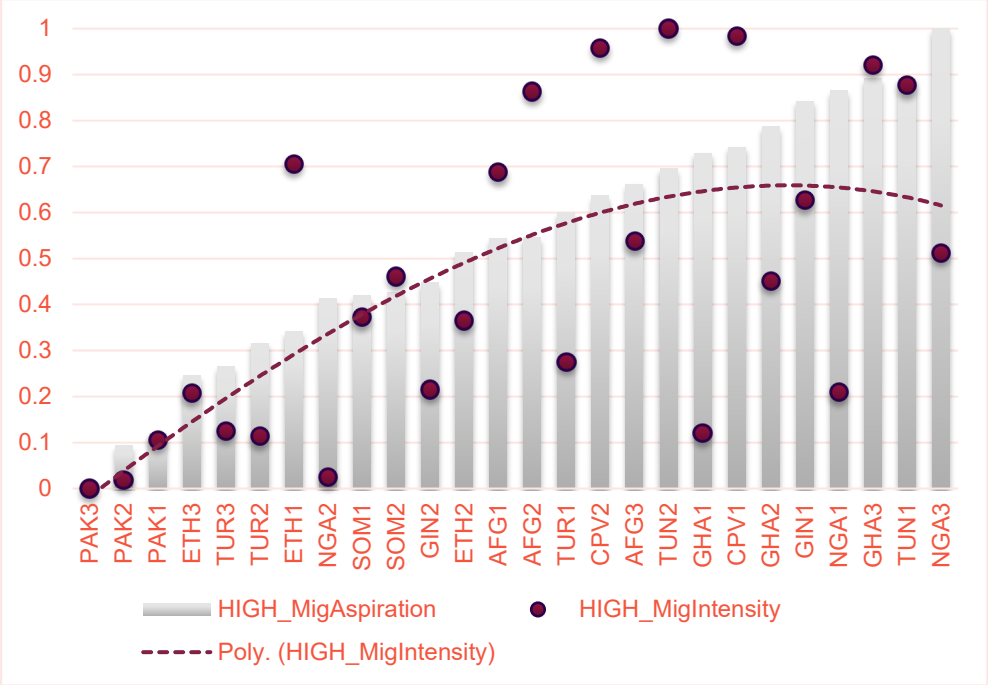

Figure 3. Migration aspirations vs. out-migration intensity

Note: Polynomial trend line is of order 3 (cubic). Raw data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta) and MIGNEX Coding Scales based on Research Area Interim Reports (MIGNEX Handbook Chapter 11).

Anchor cases

Keti Bandar (PAK3) represents the research area with very low international migration aspirations, while Ekpoma (NGA3) has the highest level of migration aspirations out of all research areas.

Keti Bandar is a coastal town on the Indus River Delta, located in south-east Pakistan, in Thatta district, Sindh. As a long-standing fishing port, the sea and the river have shaped the lives of those inhabiting the area. Both internal and international migration is not a widespread occurrence, nor an aspiration. The majority of young adults (95%) expected to stay in Keti Bandar in the next five years. Many young adults reported feeling a strong connection with Keti Bandar, and a sense of peace and safety there. In fact, Keti Bandar had been experiencing internal in-migration, increasingly from nearby islands that became uninhabitable due to rising sea levels (Erdal et al. 2022a).

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Ekpoma, a town in Edo State of Nigeria, is known nationally for its university and education institutions. Migration aspirations are near universal, particularly for international migration. Most surveyed young adults (86%) reported that they would prefer to leave Nigeria in the next five years and the large majority (92%) would migrate to a richer country if given the necessary papers (Aghedo et al. 2022).

Outcome 2: High international migration intensity

Obtaining accurate and comprehensive data on outmigration intensity, which can vary across regions and over time, comes usually with some fundamental challenges including:

- *Missing data in official records. In most countries, migrants may leave a country or their research area without deregistration or proper documentation, making it difficult to track their movements accurately.*
- *Underreporting and informal migration: Many migrants, particularly those engaged in irregular or unauthorized migration, may choose not to report their movements to authorities or in surveys. This can lead to underestimation of outmigration intensity, especially in regions with significant informal labour markets.*
- *Vulnerable or marginalized groups, such as refugees, internally displaced persons, or undocumented migrants, may be less likely to be included in official records or surveys due to their precarious legal status or living conditions.*

To estimate the intensity of outmigration from a specific research area, we choose an indirect way of measurement relying on two key survey items from the MIGNEX Survey.

Data and measurement

Two MIGNEX survey questions are instrumental in providing valuable insights into an approximation of the extent of population movement from the research area to other countries over the past five years.

- *Survey item G03 - "Do you know anyone who used to live here in RESEARCH AREA who has moved to another country during the past five years?"*

This question serves as a foundational indicator for gauging out-migration. Respondents are asked whether they are aware of individuals who were formerly residents of the research area but have since relocated to another country within the previous five-year period. By soliciting this information, we gain an initial understanding of the occurrence of outmigration at an individual level.

- *Survey item G05 -"Would you say that you know more than ten people who have moved to another country during the past five years?"*

This question takes the analysis a step further by exploring the breadth of respondents' knowledge regarding outmigration. It inquires whether individuals are acquainted with a substantial number of people (more than ten) who have embarked on international migration within the last five

years. This item helps us assess the dispersion and prevalence of outmigration knowledge within the community.

By leveraging the responses to these two survey items, we can formulate an informed estimation of the outmigration intensity within the research area. While G03 provides a foundational understanding of individual-level knowledge of outmigration, G05 offers insights into the broader awareness within the community, particularly when a significant number of respondents can identify multiple cases of international migration.

This allows us to gauge not only the occurrence of outmigration events but also the level of community awareness about such movements. Together, these indicators contribute to a more comprehensive picture of outmigration intensity, helping us better understand the dynamics of population mobility within the research.

Case distributions

In Figure 3, we've graphed migration intensity fuzzy scores alongside migration aspirations. The trendline in the graph highlights a significant correlation between these two outcome variables at the research area level, indicating that higher levels of migration aspirations are associated with increased actual migration behaviour.

However, this correlation weakens as aspirations rise. In other words, research areas with higher average aspirations tend to exhibit relatively lower levels of corresponding migration intensity. This points to a noteworthy aspiration gap in areas characterised by relatively high migration aspirations. Consequently, it suggests that involuntary immobility may be notably more prevalent in these research areas compared to others.

However, it is essential to emphasize that research areas characterised by high levels of migration aspirations do not necessarily correspond to those with elevated rates of international out-migration. This intriguing disconnect between migration aspirations and realized migration outcomes is visually represented in Figure 2. Understanding the causal factors contributing to this pattern in migration outcomes is the primary objective of the subsequent QCA analysis. By examining the intricate interplay of diverse migration drivers and contextual conditions, this analysis aims to unveil the nuanced relationships between migration aspirations and actual migration patterns within these distinct research areas.

Anchor cases

Redeyef (TUN2) and Keti Bandar (PAK3) serve as contrasting examples in the realm of migration intensity. Redeyef is a marginalised mining town nestled in Tunisia near the Algerian border. It grapples with a pervasive sense of stagnation, compounded by a longstanding history of international emigration. The prospects for the town's youth are limited, driving emigration to the forefront as a significant strategy. Consequently, a considerable 77% of its young adults maintain connections with family, relatives, or friends living abroad, primarily in historical destinations like France and Germany, with a particular affinity for the French town of Nantes, often affectionately referred to as 'Little Redeyef' (Kasavan et al. 2022b).

Conversely, Keti Bandar in Pakistan stands in stark contrast. As previously mentioned, it stands as an epitome of low migration aspirations and exhibits the lowest migration intensity. Emigration from Keti Bandar remains at a minimum, with a mere 3% of young adults having migrant family, friends, or relatives abroad. Notably, none of the young men or women participating in the survey had ever resided abroad for a period exceeding one year (Erdal et al. 2022).

Migration driver domains and condition specifications

Condition 1: Poverty and livelihoods

Data and measurement

To operationalise economic hardship, we initially construct two distinct indices: one to measure livelihoods hardships and the other to gauge absolute poverty. The livelihoods indicator is designed to capture the challenges individuals face, which may drive aspirations for migration or other migration-related outcomes. It delves into how individuals perceive difficulties within a specific research area, focusing on two crucial dimensions: the labour market and the ability to meet basic needs. Each of these dimensions corresponds to a specific MIGNEX survey item, and the livelihoods index is calculated as the average of these two dimensions.

- *Labour market: In this dimension, we assess individuals' perceptions of job availability in the area through their responses to survey item B1: "How easy or difficult is it to find a good job in [RESEARCH AREA]?" Responses range from 1 ("very easy") to 4 ("very difficult").*

- *Meeting basic needs: This dimension evaluates perceptions of earning a living and supporting a family within the research area, using survey item B6: "In general, do you find that earning a living and feeding a family in [RESEARCH AREA] is "Easy", "Manageable", or "Difficult."*

To assess overall poverty levels across research areas, we define poverty as households lacking sufficient income and resources to meet basic needs, leading to inadequate access to essentials like food, housing, healthcare, education, and essential goods and services. Our poverty variable is calculated as the mean of two dimensions: a household's financial status and hunger frequency.

- *Financial status: This dimension measures perceived household financial well-being through survey item I4: "How is your household's current financial situation?" Responses range from '1' for "Finding it difficult to get by" to '3' for "Living comfortably." Before merging this data with hunger frequency, we recode the responses to create an ordinal hardship scale with '1' indicating "Living comfortably" and rescale it to a 4-point scale.*

- *Hunger frequency: This dimension assesses food insecurity and hunger using survey item I8: "How often have you or your household gone to sleep without enough food to eat in the past month?" '1' means "Never," and '4' means "Always." No further transformations are required.*

By integrating financial status and the frequency of hunger, we have developed a holistic poverty index that considers not only the subjective evaluation of basic needs fulfilment but also the identification of severe poverty through hunger incidence. This poverty assessment is computed as the average of both aspects, each given equal weight.

Utilizing these two indices as metrics for gauging livelihoods and poverty, we have derived fuzzy scores that gauge inclusion within the category of research areas grappling with economic adversity, denoted as "POOR_LIVE". These fuzzy scores are derived from the primary component of a Polychoric Principal Component Analysis (PPCA), which amalgamates livelihood and poverty indicators.

Case distributions

The distribution of fuzzy scores indicating 'poor livelihoods' across the 26 research areas is illustrated in Figure 4, in relation to the two outcome indicators. The association between fuzzy scores of the poor livelihoods condition and the two migration outcomes appears somewhat nuanced. While there are several instances of low aspirations and low out-migration intensity at the lower end of the poor livelihoods distribution, we observe a weak (strong) positive link between escalating poverty and migration aspirations (actual out-migration). However, as we move towards the upper echelons of the 'poor livelihoods' spectrum, the pattern becomes more intricate. Here, with the rise in poverty and poor livelihoods, migration aspirations tend to decline, but actual outmigration re-surges, establishing again positive link with heightened economic adversity. It's evident that there is substantial variation across research areas, necessitating further in-depth investigation of this relationship.

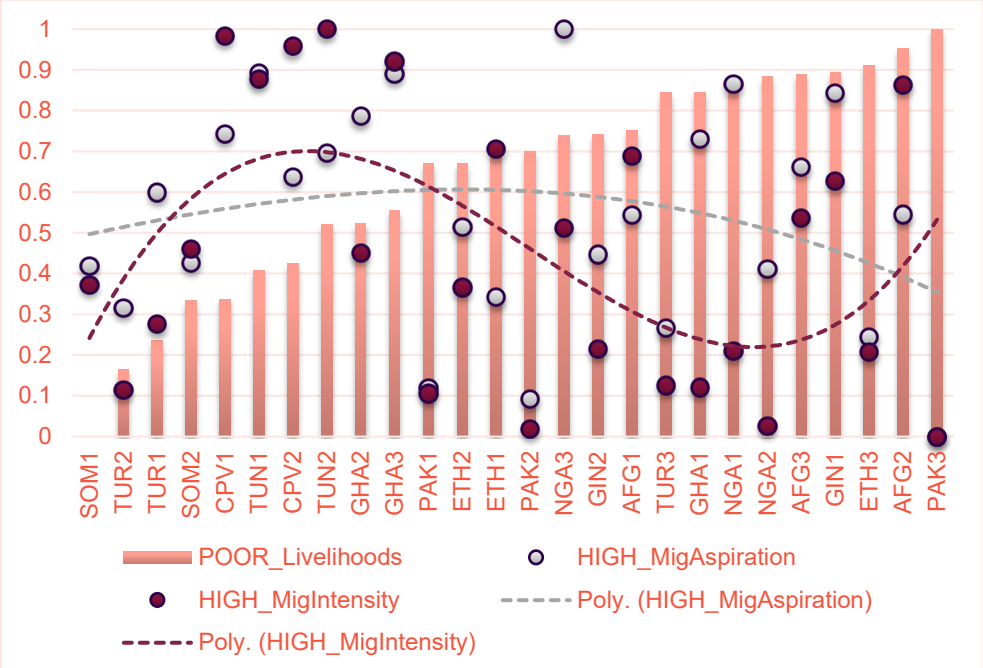

Figure 4. Poor livelihoods vs. migration aspirations and out-migration intensity

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Note: Polynomial trend line is of order 3 (cubic). Raw data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta) and MIGNEX Coding Scales based on Research Area Interim Reports (MIGNEX Handbook Chapter 11).

Directional expectation:

A high level of poverty and poor livelihoods (POOR_LIVE) is a sufficient condition for high migration aspirations.

The absence of a high level of poverty and poor livelihoods (poor_live) is a sufficient condition for high out-migration intensity.

Anchor cases

Keti Bandar (PAK3) and Erigavo (SOM1) represent the anchor cases for the presence of a high level of poverty and poor livelihoods and the absence of this condition respectively.

In Keti Bandar many livelihoods rely on the unique ecosystems of the Indus River Delta, including for sea fishing, crab farming and the harvesting of jellyfish. Over one-third (36%) of surveyed young adults worked in farming, fishing or rearing animals. Most (76%) considered it difficult to earn a living and feed a family (Erdal et al. 2022).

Erigavo is the capital of Sanaag, a semi-arid, rural region in the North of Somalia and Somalialand. Erigavo has also experienced significant development in road infrastructure, health and education –mainly due to local government or diaspora investments. Although the land remains relatively fertile, agriculture has been impacted considerably by droughts, with a significant loss of livestock. Climate change and a lack of infrastructure threaten agriculture and the future of farmer livelihoods. Just 2% of young adults surveyed in Erigavo were found to work in agriculture. Many young people are now seeking alternative livelihoods in construction, small-scale business, domestic work and government. Others work in gold and mineral mining, with many privately owned mining sites operational in the area since 2018. Despite ongoing developments, the town's employment rate is low and there are few reliable jobs. Over half (60%) of surveyed young adults consider it difficult to find a good job in Erigavo. One in two (53%) consider it manageable to earn a living and feed a family (Ahmed et al. 2022).

Condition 2: Insecurity and violence

Data and measurement

We address insecurity and violence as a root cause of migration aspirations and actual out-migration using two key components. First, the individual perception of insecurity is operationalised through survey item K1: "Do you think that here in [RESEARCH AREA] it is safe to walk the streets at night?"

Respondents could answer with "Yes," "No," "Don't know," or "Refuse to answer." This index is referred to as perception of insecurity.

Second, for assessing the 'objective' level of insecurity and violence at the research area level, we construct a violence and crime indicator using the first component derived from a polychoric principal component analysis (PPCA) of the following five MIGNEX survey items:

- *K3: "In the past five years, have you or anyone in your household experienced theft, burglary, or robbery?"*
- *K4: "In the past five years, have you or anyone in your household experienced assault or physical violence?"*

Additionally, three survey items begin with "Please tell me whether, in the past five years, you have ever personally feared any of the following types of violence:"

- *K5: "Violence at a political rally, public protest, or demonstration"*
- *K6: "An armed attack by armed forces or militias"*
- *K7: "Any other types of violence among people in [RESEARCH AREA]"*

For all these variables, respondents could answer "Yes," "No," "Don't know," or "Refuse to answer." We code "Yes" as "1" and "No" or "Don't know" as "0".

We insecurity and violence fuzzy scores are then constructed using again the first component derived from a polychoric principal component analysis (PPCA) of the two indicators, i.e., perceptions of insecurity and violence and crime.

Case distributions

Figure 5 illustrates the distribution of fuzzy scores reflecting insecurity and violence conditions alongside the two migration outcome indicators. The observed patterns in these fuzzy scores and their relationship with the two outcomes warrant a nuanced analysis.

At the higher end of the high insecurity and violence fuzzy score distribution, we observe research areas with relatively high out-migration intensities but significantly lower levels of migration aspirations. Conversely, at the lower end of the insecurity distribution, we find research areas that could be considered relatively safe, such as CPV1 and PAK3. However, these two areas exhibit distinct patterns of migration outcomes despite both being considered safe places. While São Nicolau (CPV1) is characterised by high migration aspiration and even higher out-migration intensity, Keti Bandar (PAK3) demonstrates rather the opposite trend, marked by the lowest levels of migration aspirations and actual out-migration in the entire sample.

For research areas that suffer higher levels of insecurity of violence, both aspirations and actual out-migration tend to be slightly higher than in the safest places, yet this positive correlation seems relatively weak and only existent for cases outside the set of highly insecure places. For research areas falling somewhere in the middle of the insecurity spectrum, we do not

discern a clear and consistent correlation with either of the two migration outcomes.

It's crucial to emphasise the substantial variation among research areas, underscoring the necessity for a more comprehensive investigation into this intricate relationship.

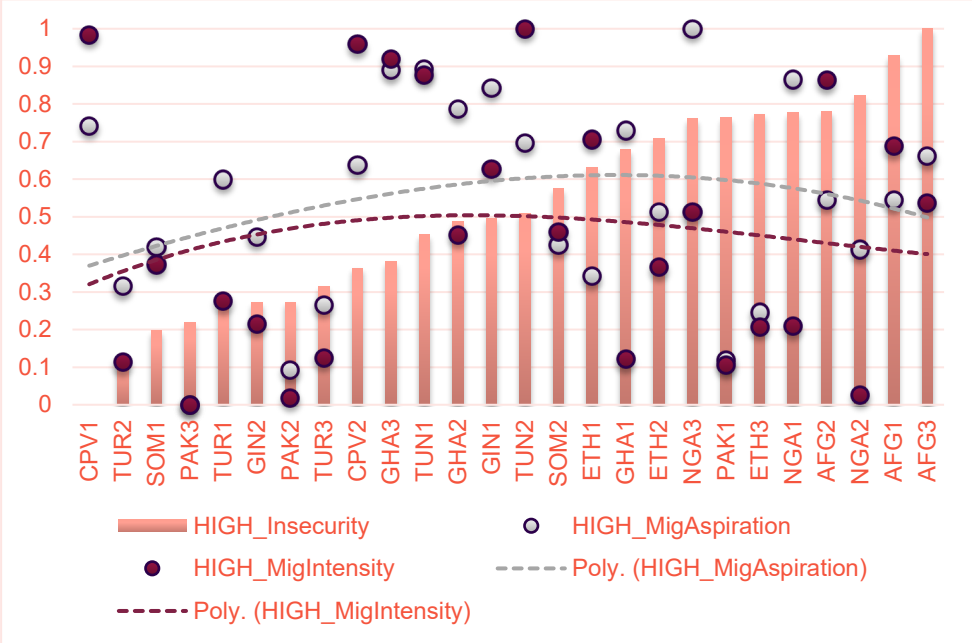

Figure 5. High insecurity vs. migration aspirations and out-migration intensity

Note: Polynomial trend line is of order 3 (cubic). Raw data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta) and MIGNEX Coding Scales based on Research Area Interim Reports (MIGNEX Handbook Chapter 11).

Directional expectation:

A high level of insecurity and violent conflicts (HIGH_INSECCON) is a sufficient condition for both high migration aspirations and high out-migration intensity.

Anchor cases

Shahrake Mahdia (AFG3) in Afghanistan represents the case that is most 'fully in' the set of cases with a high level of insecurity and violent conflicts, while São Nicolau (CPV1) in Cape Verde represents the case that is most 'fully out' of this set.

Shahrake Mahdia is a township (Shahrake) in Dashte Barchi, Kabul province, west of Kabul's city centre. Shahrake Mahdia is an informal, expanding urban neighbourhood of Kabul. During MIGNEX fieldwork in July 2021, the township was experiencing major livelihood collapse and protracted stagnation – a result of the third wave of the Covid-19 pandemic and the fall of Kabul. By the end of the fieldwork, the security situation had deteriorated

significantly, with the sudden presence of the Taliban approaching Darulaman, close to Shakrake Mahdia (Majidi et al. 2022).

São Nicolau is one of Cabo Verde's nine inhabited islands. Although São Nicolau struggles with stagnation and marginalisation, there is an atmosphere of tranquillity and friendliness that many inhabitants cherish, and acute poverty is rare (Carling and Hagen-Zanker 2022).

Condition 3: Governance and public services

Data and measurement

We assess the quality and trust in governance and public services using five key indicators, which are combined to the overall indicator of "WEAK_Governance" using the first component derived from a polychoric principal component analysis (PPCA).

Sub-index 1: Discontent with public services

This indicator gauges respondents' perception of public service quality. It comprises two dimensions: perceived school quality and perceived healthcare quality, each represented by a survey item. The variable's value is the mean of these two dimensions.

- *Quality of Schools: Respondents rate schools from "1" (very bad) to "5" (very good), with an average value of 2.7 across research areas. The scale is reversed to denote hardships.*
- *Quality of Healthcare: Respondents rate formal healthcare from "1" (Very bad) to "5" (Very good), with an average value of 3.0 across research areas. The scale is reversed to denote hardships, and the variable is rescaled to a 1 to 4-point scale for consistency.*

Sub-index 2: Distrust in institutions

This indicator measures trust in public institutions, including courts of law, police, armed forces, and perceptions of corruption. We use the first component from a polychoric principal component analysis of these four variables to construct the variable.

- *Trust in the Police, Courts, and Armed Forces: Respondents rate trust on a scale from "1" (Completely) to "5" (Not at all), with "Don't know" responses recoded as neutral.*
- *Assessment of Corruption: Respondents assess corruption on a scale from "1" (Not at all a problem) to "3" (A serious problem), with "Don't know" responses treated as neutral.*

The Distrust in Institutions variable is then rescaled to a 1 to 4-point scale.

Sub-index 3: Disapproval of government

This index captures respondents' perceptions of both local and central government performance. It is calculated as the mean of these two perceptions.

- *Perception of Local Government: Respondents rate local government performance from "1" (Doing a terrible job) to "10" (Doing an excellent job).*

- *Perception of Central Government: Respondents rate central government performance similarly. The perceptions are reversed to denote hardships, and the mean is converted to a 1 to 4-point scale.*

Sub-index 4: Infrastructure improvement

This sub-indicator is based on RAIR Coding scale A and refers to transportation (e.g., roads, airports, ports), utilities (e.g., electricity, water, broadband) and other physical investments that can facilitate economic activity and/or increase standards of living. Codes (1-4) indicate:

- ***1** = One or more forms of infrastructure has developed in ways that have transformed life in the research area.*

- ***4** = The existence and quality of infrastructure has generally remained unchanged or worsened.*

Sub-index 5: Corruption experience (%)

Another research area-level variable, this one estimates the rate of corruption experiences based on the survey item J14, which asks if anyone has asked or expected respondents to pay a bribe for services in the past year. The variable is calculated as the mean value for this binary variable in each research area.

Case distributions

Figure 6 vividly illustrates the distribution of fuzzy scores, denoting the affiliation with research areas characterized by poor governance and low-quality public services, in connection to the two migration outcome indicators. The discerned association between these fuzzy scores and the two outcomes reveals a compelling pattern.

Throughout the entire spectrum of governance and public services a notably favourable correlation is observed. This signifies that as the quality of governance weakens and public services deteriorate, both migration aspirations and out-migration intensity surge. While this trend persists throughout for migration aspirations, extending to the most poorly governed research areas, it takes an intriguing turn for out-migration intensity in research areas characterized by moderate levels of governance quality. However, migration intensity resumes its ascent for research areas afflicted by most inadequate governance and public services.

Also in this domain, it is imperative to underscore the substantial variability among research areas, underscoring the necessity for a more comprehensive inquiry into this intricate relationship.

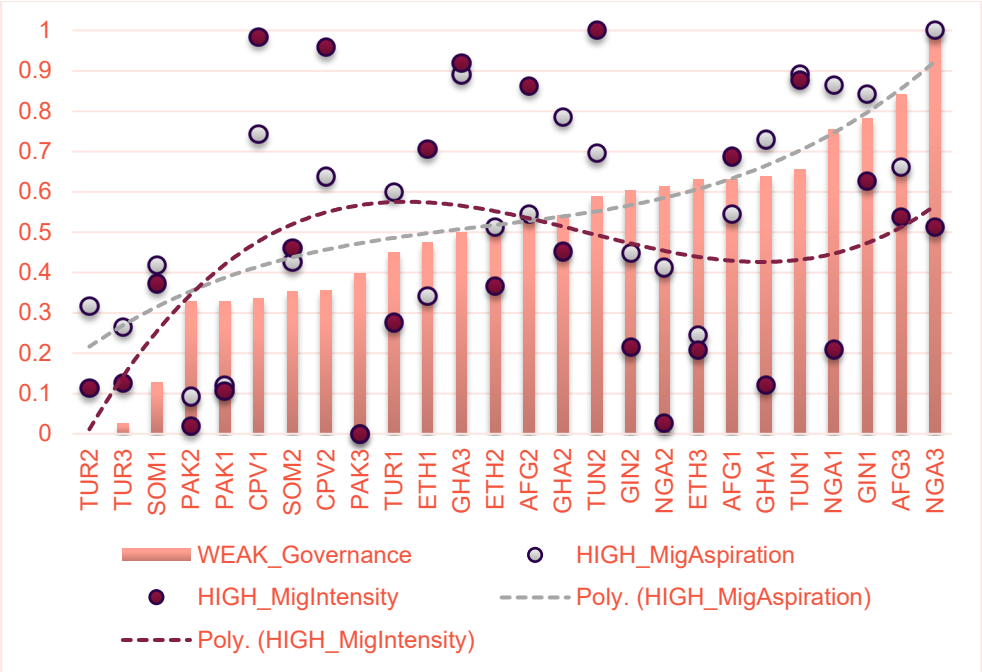

Figure 6. Weak governance and public services vs. migration aspirations and out-migration intensity

Note: Polynomial trend line is of order 3 (cubic). Raw data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta) and MIGNEX Coding Scales based on Research Area Interim Reports (MIGNEX Handbook Chapter 11).

Directional expectation:

Weak governance and quality of public services (WEAK_GOVPUBSS) is a sufficient condition for both high migration aspirations and high out-migration intensity.

Anchor cases

The anchor cases for the condition of weak governance and public services are Ekpoma (NGA3) and Yenice (TUR2), with Ekpoma representing a case that is 'fully in' the set of cases with weak governance and public services and Yenice being 'fully out'.

Ekpoma is a fast-growing town in Edo State, with around 95,000 inhabitants. The focal point of this town is Ambrose Alli University, founded in 1982 as Nigeria's first state-owned university. The expansion of the university and the policies of Ambrose Alli, a distinguished medical professor and politician, have led to significant educational expansion. Ekpoma is now home to various higher education institutions. Over one-third (36%) of the surveyed young adults are currently pursuing their studies, emphasising the educational influence of this prominent institution (Aghedo et al. 2022).

While the university has undeniably contributed to the town's growth and development, social structures, and livelihoods, it is essential to acknowledge

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some persistent challenges. Various reports highlight the prevalence of fraud, widespread corruption, and the high cost of governance.[9] For instance, about 72% of the young adult population reported being offered money in exchange for their vote during local elections. Moreover, about 40% of the population was expected to pay a bribe within the past year, marking the highest reported value among all 26 research areas. As a consequence, trust in the police is alarmingly low, with more than 55% of the young adult population expressing a complete lack of trust in law enforcement.

Yenice (TUR2) is a district in the inland part of the Çanakkale province, in the Biga Peninsula of Turkey. In contrast to neighbouring districts, the economy of Yenice is stagnating and there is a general scarcity of socio-economic opportunities. The majority of residents live in villages around the main town. Due to the small size of the district and close-knit relations, many feel life in Yenice is peaceful, stable, and secure - particularly in contrast to large, rapidly expanding urban areas in the country. There is some variance across the district, where rural areas lack IT infrastructure. Absolute poverty is rare, due to subsistence agriculture, animal husbandry, some factory work, and some degree of social solidarity across the district. The opening of the Çanakkale 1915 Bridge on 18 March 2022 provides an opportunity for economic development. There are high expectations that the bridge and its connecting highways will improve connections between Yenice and the surrounding areas, facilitating commuting and trade (Kavur et al. 2022).

Condition 4: Environmental stress and natural disasters

Data and measurement

In line with our well-established operationalization principles, we have developed an index to gauge the level of environmental stress within a specific research area. This comprehensive index comprises three distinct sub-indices, each designed to provide a nuanced perspective on the environmental challenges faced.

Sub-Index 1: Experienced environmental hazards and degradation

This survey-based sub-index rests upon four key survey items, which were introduced with the following contextual preamble: "Our investigation now turns to environmental concerns within the [RESEARCH AREA] that you may have encountered." These four survey items are specified as follows:

- *L02: Droughts: "Over the past five years, has your household been affected by droughts?"*
- *L03: Floods: "Have you witnessed the impact of floods?"*
- *L04: Soil Degradation: "Has your area experienced soil degradation?"*

[9] Cf. Cost of governance in Nigeria: An evaluative analysis (pp. 401–418). Ekpoma, Nigeria: Ambrose Alli University Publishing House.
See also: https://saharareporters.com/2023/05/11/nigerias-ambrose-alli-university-intervention-team-discovers-over-n2billion-tax-fraud, accessed 19 October 2023.

- *L05: Crop or Livestock Disease: "Have crop or livestock diseases affected your community?"*

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Respondents were given four response options: "Yes," "No," "Don't know," or "Refuse to answer." For analytical purposes, we have assigned a code of "1" to "Yes," "0" to both "No" and "Don't know," and treated "Refuse to answer" as a missing value, consequently excluding it from the principal component analysis. The resulting sub-index that gauges environmental hazards and degradation is derived from the first component generated via polychoric principal component analysis (PPCA).

Sub-Index 2: Environmental degradation

The second sub-index is based on RAIR Coding scale J, specifically tailored to capture the gradual negative changes to the environment, including the depletion of natural resources, habitat destruction, and pollution. This scale is discretely coded as follows:

- ***1:** Environmental degradation is insignificant or has minimal impact on people's lives and livelihoods.*
- ***4:** Severe environmental degradation is a widespread concern, negatively affecting lives and livelihoods significantly.*

Sub-Index 3: Vulnerability to natural disasters

Our third sub-index relies on RAIR Coding scale K, designed to assess vulnerability to natural disasters—those rare and sudden events with dramatic consequences, such as severe tropical storms, flooding, critical droughts, earthquakes, and volcano eruptions. This scale is discretely coded as follows:

- ***1:** No recent natural disasters have occurred, and there is no apparent risk of such events.*
- ***4:** Recent experiences and/or evident risk factors make the area prone to natural disasters, leading to apprehension among inhabitants.*

The overarching environmental stress index is synthesised from these three sub-indices and derived through the first component generated via polychoric principal component analysis (PPCA). To enhance interpretability, this index is rescaled between zero and one (indicating HIGH Environmental stress), offering a holistic assessment of environmental challenges in the 26 research areas.

Case distributions

The correlation between environmental stress and migration aspirations, as well as the intensity of outmigration, presents a complex, non-linear relationship (Figure 7). As we delve into this intricate interplay, we observe that as levels of environmental stress increase, both migration aspirations and actual migration rates tend to increase. However, this trend only holds until a certain point, beyond which the relationship takes an unexpected turn, becoming negative. These cases which are characterised by relatively high levels of environmental stress, out-migration intensity is relatively low (or starting to decline), while migration aspirations remain rather high. This aspiration-intensity gap is most striking for cases like GIN1, AFG3, and GHA1.

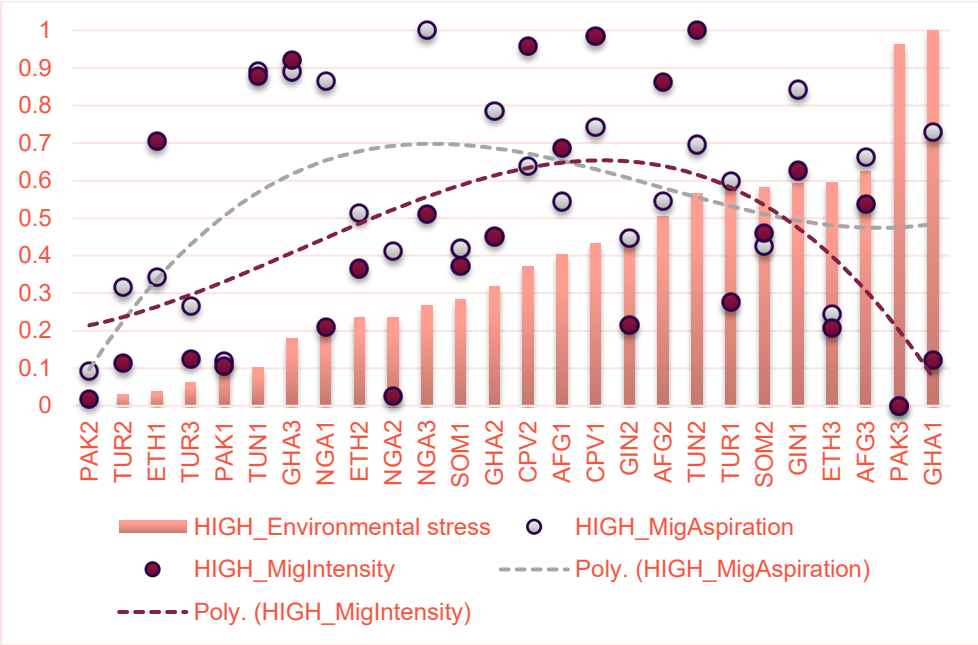

Figure 7. Environmental stress vs. migration aspirations and out-migration intensity

Note: Polynomial trend line is of order 3 (cubic). Raw data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta) and MIGNEX Coding Scales based on Research Area Interim Reports (MIGNEX Handbook Chapter 11).

Of particular note are two distinct research areas that stand out prominently in terms of their exposure to environmental stress: Keti Bandar (PAK3) and Gbane (GHA1). Notably, Keti Bandar and Gbane exhibit contrasting dynamics in their relationship between migration aspirations and actual outmigration intensity.

In Keti Bandar, we find that migration aspirations and outmigration intensity levels are relatively close to each other, both being very low, suggesting a strong alignment between the (lack of) aspirations to migrate and the actual act of migration. Conversely, the situation in Gbane is characterized by a stark discrepancy between (high) migration aspirations and relatively low levels of actual out-migration intensity. This intriguing contrast highlights the need for a more in-depth and thorough case investigation to understand the underlying factors driving this disconnect.

In sum, the intricate interplay between environmental stress, migration aspirations, and outmigration intensity showcases the multifaceted nature of these relationships. The unique dynamics observed in Keti Bandar and Gbane underscore the complexity of human responses to environmental challenges and underscore the importance of further research and analysis to unravel the underlying mechanisms at play.

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Directional expectation:

Environmental stress and exposure to natural hazards (HIGH_ENVIRONSTRESS) is a sufficient condition for both high migration aspirations and high out-migration intensity.

Anchor cases

Gbane (GHA1) represents a case being 'fully in' the set of cases with high environmental stress and exposure to natural hazards while Youhanabad (PAK2) represents a case the is 'fully out'.

Gbane is a farming and mining community in the Northern Talensi-Nabdam district of Ghana, with an estimated population of around 2,700 inhabitants. The climate is tropical, with two distinct seasons that have long influenced the community's livelihood activities, in particular farming. Since the discovery of gold in 1995, agricultural production in Gbane has declined and mining is now the major source of livelihood support. Significant environmental degradation during this time, including frequent drought, underground blasting and water pollution, are also having an increasing impact on agricultural production (Godin et al. 2022).

Youhanabad is an urban area of Lahore, the capital of the Pakistani province of Punjab. The general atmosphere in Youhanabad is one of optimism, confidence and dynamism – often stemming from major improvements in infrastructure (Erdal et al. 2022b).

Condition 5: Social networks and culture of migration

Data and measurement

Our comprehensive index, designed to operationalize the well-established culture of migration within a research area, draws upon the utilisation of two distinct RAIR coding scales. These scales have been chosen to capture the various dimensions of migration culture prevalent in the community.

Sub-Index 1: Salience of international out-migration (RAIR Coding Scale M)

The first sub-index, coded using RAIR coding scale M, is aimed at gauging the prominence of international out-migration within the research area. This scale offers discrete coding as follows:

- ***1:*** *International out-migration is exceedingly rare, with minimal relevance in the thoughts and daily lives of the community.*
- ***4:*** *International out-migration is a prominent and integral aspect of people's awareness and daily experiences.*

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Sub-Index 2: Attitudes towards international out-migration (RAIR Coding Scale N)

The second sub-index delves into the attitudes prevailing within the research area toward international out-migration. This index employs the four-point RAIR coding scale N, which encompasses a range of sentiments:

- ***1:** International migration, migrants, and their influence are consistently portrayed in negative terms within the community.*
- ***4:** International migration, migrants, and their influence are consistently portrayed in positive terms within the community.*

The overarching Migration Culture Index is thoughtfully derived from the synthesis of these two sub-indices. This synthesis is achieved through the utilization of the first component generated via polychoric principal component analysis (PPCA). Subsequently, the index is further rescaled to provide a clear and intuitive representation of the migration culture within the research area. It is rescaled between zero (indicating a weak migration culture) and one (indicating a strong migration culture), allowing for a nuanced understanding of the prevailing attitudes and perceptions regarding international out-migration in the community.

Case distributions

While the polynomial trend lines illustrating migration aspirations and outmigration intensity clearly demonstrate a consistent, gradual increase in response to ascending levels of relatively underdeveloped migration cultures, it is intriguing to observe that specific instances within research areas characterised by robust migration cultures, particularly at the higher end, exhibit elevated levels of migration aspirations (see Figure 8). These instances highlight the potential impact of a strong migration culture in cultivating heightened migration aspirations within a community.

Nonetheless, for certain research areas, like New Takoradi (GHA3) or São Nicolau (CPV1), where well-established migration cultures exist, we indeed observe elevated levels of migration aspirations and high out-migration. In contrast, we observe a contrasting pattern in two Pakistani research areas (PAK1 and PAK2), which are characterised by some prominent presence of migration cultures. Surprisingly, this does not align with the observed low levels of migration aspirations and out-migration intensity in those areas.

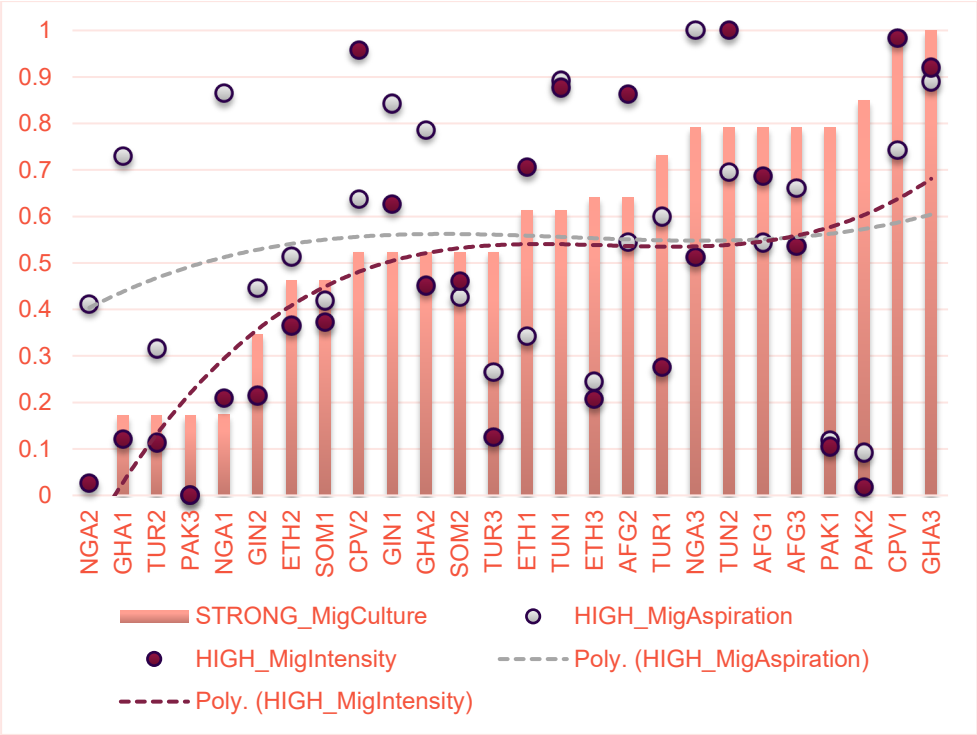

Figure 8. Well-established culture of migration vs. migration aspirations and out-migration intensity

Note: Polynomial trend line is of order 3 (cubic). Raw data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta) and MIGNEX Coding Scales based on Research Area Interim Reports (MIGNEX Handbook Chapter 11).

Directional expectation:

Well-established culture of migration (STRONG_MIGCULT) is a sufficient condition for both high migration aspirations and high out-migration intensity.

However, it is important to highlight that there are also research areas with substantial levels of migration aspirations that do not align with strongly established migration cultures. This observation suggests that the existence of migration aspirations is not solely contingent upon the presence of a well-entrenched migration culture. In these cases, other factors or motivations may be driving the aspirations for migration.

This nuanced exploration of the relationship between migration culture and migration aspirations underscores the complexity of human mobility dynamics. While a well-established migration culture can certainly play a role in shaping aspirations, it is not the exclusive determinant. Understanding the interplay of various factors that contribute to migration aspirations and behaviour is crucial for gaining a comprehensive view of migration dynamics in diverse research areas.

Anchor cases

New Takoradi (GHA3) in Ghana is a representative case of a region fully entrenched in a culture of migration. This coastal town, located within the Sekondi-Takoradi city in Western Ghana, has witnessed a surge in seasonal out-migration as residents seek new livelihood opportunities beyond their immediate community. International migration is widely perceived as a means to enhance livelihood prospects and escape poverty, with a substantial majority of young adults (82%) having family or friends residing abroad. Notably, New Takoradi has earned a reputation as a hub for stowaway migration, owing to its proximity to the Takoradi harbour. Over time, due to heightened security measures at the port, stowaway incidents have decreased, prompting more individuals to consider the perilous journey through Libya.

Despite the risks, nearly one-fifth of young adults (19%) in New Takoradi have acquaintances who have returned from international migration, particularly from Europe. For many of these young adults, international migration is viewed as a necessary step to earn a livelihood and provide for their families. Furthermore, the community exhibits strong transnational ties, with the majority of young adults (78%) maintaining regular contact with migrant family or friends (Kandilige et al. 2022).

In contrast, Awe is a town and administrative centre located in Nasarawa State, North-Central Nigeria, known as a long-standing migration destination. Out-migration is a rare occurrence, with a significant portion of young adults (84%) expressing their intent to remain in Nigeria over the next five years. Within this group, the majority (75%) have no plans to leave Awe. In Awe, international out-migration is considered a distant and perilous option, with potential low returns and significant dangers deterring residents from pursuing it. Additionally, there are limited social ties abroad, as a mere 6% of young adults surveyed have family or friends living in foreign countries. When residents do decide to relocate, it is most often to other regions within Nigeria (Genyi et al. 2022).

Condition 6: Feasibility of migration

To assess the feasibility of migration, a comprehensive examination of an individual's and a household's resources is essential, encompassing both tangible and intangible factors. These resources play a pivotal role in determining whether potential migrants ultimately embark on their migration journey and, if they do, the nature of that migration - be it internal or international, the chosen destination, and the mode of migration. Critical factors encompass elements like prior migration experiences and the relationships maintained with past or current migrants, which often exert a significant influence on forthcoming migration decisions. Consequently, a strong perception of migration feasibility is often closely associated with a well-entrenched migration culture and robust transnational connections.

At a macro-level, regional disparities among places of origin can profoundly affect opportunities for lawful migration. These disparities encompass aspects such as accessibility to visas or participation in labour recruitment programs, as well as the availability of illicit migration facilitation services that aid irregular migration. Additionally, the infrastructure supporting

migration (as articulated by Xiang and Lindquist 2014) and the geopolitical positioning of countries or regions may also have a substantial impact on both the perceived and actual feasibility of migration.

Data and measurement

To construct a comprehensive measure that captures the general perception of (un)constrained international migration, which inherently reflects the underlying level of policy restrictions in potential European or Western migration destinations, we employ two distinct sub-indices. These sub-indices are pivotal in shedding light on the prevailing sentiment surrounding international migration.

Sub-Index 1: Perceived feasibility of international out-migration (RAIR Coding Scale O)

The first sub-index is rooted in RAIR Coding scale O, which assesses the Perceived Feasibility of international out-migration. This scale discreetly codes the perception within research areas as follows:

- ***1:** Reflects the perception that international migration is generally considered nearly impossible for individuals aspiring to move.*
- ***4:** Indicates the perception that international migration is generally seen as a feasible option for anyone who desires to migrate.*

Sub-Index 2: Perceived possibility of households for international relocation

The second sub-index evaluates the perceived possibility of households to relocate internationally to a wealthier country based on survey item C22. This variable employs a four-point scale, ranging from "1" (indicating very easy) to "4" (signifying very difficult). It is calculated as the weighted research area average, providing a nuanced assessment of the perceived difficulty of international migration.

To derive a comprehensive measure, these two sub-indices are synthesized through the utilisation of the first component generated through a polychoric principal component analysis (PPCA). This analytical approach yields fuzzy scores ranging from 0 to 1, which effectively indicate the level of membership in the set of research areas characterised by a high perception of out-migration feasibility versus those where the perception leans towards the opposite end of the spectrum.

In essence, this overall measure offers valuable insights into the collective perception regarding the ease or difficulty of international migration to wealthier countries. It serves as a nuanced indicator of the general sentiment within research areas, shedding light on the perceived feasibility of realizing the dream of moving abroad, which in turn can be indicative of the policy landscape and opportunities for migration to European or Western destinations.

Case distributions

A noteworthy observation emerges as we examine the data presented in Figure 9: the eight research areas exhibiting the highest levels of perceived feasibility for international out-migration are dispersed across six different countries. This intriguing pattern highlights a common thread that

transcends national borders within the MIGNEX country sample—a shared perception regarding the ease or difficulty of pursuing migration to wealthier (Western) countries.

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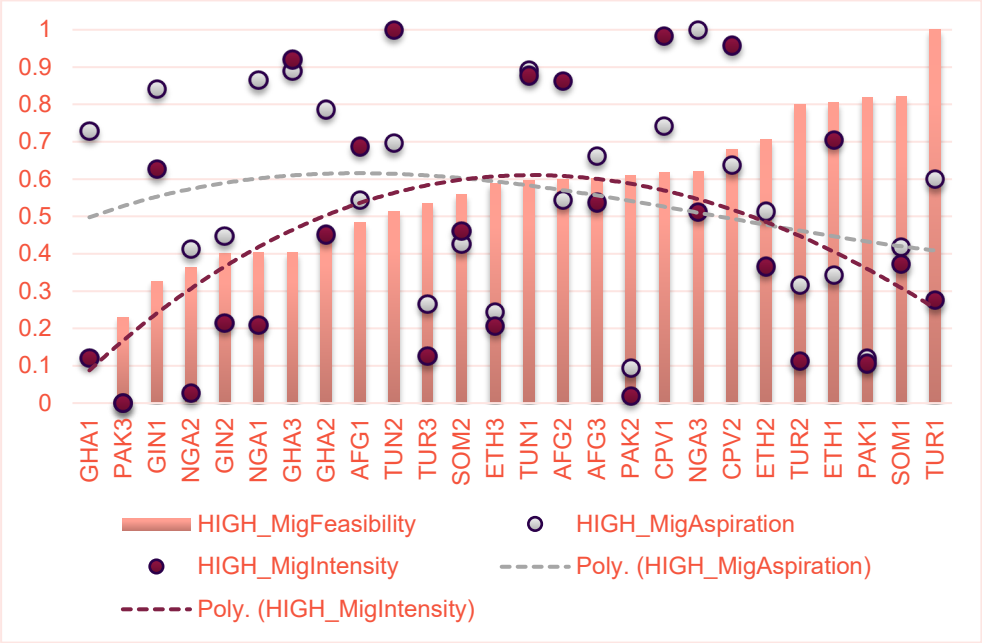

Figure 9. High migration feasibility vs. migration aspirations and out-migration intensity

Note: Polynomial trend line is of order 3 (cubic). Raw data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta) and MIGNEX Coding Scales based on Research Area Interim Reports (MIGNEX Handbook Chapter 11).

This unified perception regarding migration feasibility plays a pivotal role in shaping migration dynamics across these regions. As we delve deeper into the data, it becomes evident that this a rising perception of migration feasibility is closely intertwined with a decrease in migration aspirations.

On the other hand, the relationship between perceptions of feasibility and actual out-migration is more nuanced and follows a non-linear, inverted-U shaped pattern. While out-migration rates are at their lowest in areas characterized by either high or low migration feasibility, the highest out-migration intensity is observed in research areas where migration feasibility falls within the middle range. In other words, when the perceived feasibility of migration surpasses a certain threshold, there is a noticeable decline in out-migration rates.

Thus, the relationship between out-migration intensity and migration feasibility isn't linear. At the lower end of the feasibility spectrum, there is a clear positive association between feasibility and intensity. Yet, as we move into the middle range of feasibility, we encounter some ambiguity in the relationship. This nuanced interplay underscores the complexity of migration dynamics, where the perception of migration feasibility plays a crucial role but certainly isn't the sole determining factor.

In essence, these findings emphasise the significance of perceived migration feasibility as a driver of migration aspirations and actual migration

behaviour. It illustrates how this shared perception spans across diverse countries and its profound influence on the migration landscape. Moreover, it underscores the intricacies and non-linearity of these relationships, calling for a comprehensive understanding of the multitude of factors that shape migration dynamics across different contexts.

Anchor cases

Hopa (TUR1) and Gbane (GHA1) serve as the benchmark cases for distinct perceptions of migration feasibility.

Hopa, nestled on the Turkish-Georgian border with a population of approximately 28,000 residents, has a rich history of in-migration. A striking 37% of all respondents here consider the possibility of migrating to a more prosperous country as "easy" or "very easy," marking the highest values within the entire MIGNEX sample. Internal migration to other Turkish cities is the prevailing trend, while those who venture beyond the country often find themselves in Batumi, Georgia, a destination not typically perceived as 'going abroad.' Notably, in recent decades, a chain migration pattern has emerged from Hopa to England, with some men migrating under the framework of the Ankara Agreement, which established an Association between the European Economic Community and Turkey (Ensari et al. 2022).

In contrast, international migration remains a rare phenomenon in Gbane. Less than 1% of the surveyed young adults have spent a year or more living abroad. Despite the fact that more than half (58%) of young adults express a desire to leave Ghana within the next five years, international migration is generally regarded as an unattainable option. This perspective is rooted in perceptions of international mobility as fraught with danger, high expenses, and a sense of unattainability. Although only 5% of young adults report personal knowledge of someone who has been injured or detained while attempting migration to another country, these incidents are widely recognized within the community. A lack of social networks abroad further complicates the migration process, with just 27% of surveyed young adults having family or friends residing in foreign countries, primarily in the United States (18%), the United Kingdom (12%), and the United Arab Emirates (6%) (Godin et al. 2022).

Directional expectation:

Absence of a strong perception of migration feasibility (strong_migfeasibility) is a sufficient condition for high migration aspirations, while the presence of perceived high migration feasibility (STRONG_MIGFEASIBILITY) is a sufficient condition for high out-migration intensity.

Condition 7: Development interventions and information campaigns on migration

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Data and measurement

Our comprehensive measure for evaluating the impact of external policy interventions on migration aspirations and actual migration behaviour comprises two distinct sub-indices, each meticulously crafted to assess different facets of these interventions.

Sub-Index 1: Aid interventions

The first sub-index is specifically tailored to gauge the influence of micro-level development aid. This component delves into how targeted development initiatives and assistance programs at the community and individual levels shape migration aspirations and decisions. It encompasses a wide spectrum of factors, including economic development projects, educational opportunities, vocational training, and initiatives that bolster local livelihoods.

For measuring the prominence of micro-level international aid, we use RAIR Coding scale D, which is coded as follows:

- ***1:** Signifies the absence of any international development aid directly targeting households or community institutions.*
- ***4:** Indicates that international development aid directly targeting households or community institutions is prevalent in the area and is well-known among the population.*

Furthermore, we assess the proportion of respondents reporting awareness of foreign development interventions within the research area (*Survey item B15*). The composite Aid Interventions sub-index is then created by synthesizing these two measures, with the first component of a polychoric principal component analysis (PPCA).

Sub-Index 2: Information campaigns

The second sub-index, in contrast, focuses on the effectiveness of migration information campaigns. It examines the extent to which information dissemination, awareness programs, and communication efforts impact migration-related attitudes and behaviours. These campaigns might provide individuals with insights into the risks and opportunities associated with migration, offer guidance on legal pathways and regulations, or address the consequences of irregular migration. By assessing the influence of information campaigns, we seek to shed light on how these initiatives can sway migration aspirations and choices at the individual and community levels.

This sub-index is grounded in RAIR Coding scale P, which focuses on the Presence of migration information campaigns within research areas. This scale discretely codes research areas as follows:

- ***1:** Indicates the absence of any discernible migration information campaigns, with no informants reporting exposure to such campaigns.*

- ***4:*** *Points to the presence (or recent occurrence) of prominent migration information campaigns that a significant portion of the population is likely to have encountered.*

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Additionally, we measure the proportion of households (HH respondents) that have been exposed to various forms of migration campaigns, which encompass TV, events, radio, social media, and poster/newspaper advertising campaigns.

The composite Information Campaigns sub-index is derived through the integration of these two sub-indices, employing polychoric principal component analysis (PPCA).

The final step in our methodology for assessing external migration-related policy interventions involves combining sub-indices 1 and 2 through PPCA. The first component identifies research areas with a very high level of policy interventions, assigning them a fuzzy score of '0,' and those with a very low level of interventions with a score of '1,' with all other research areas distributed along this continuum in between.

This comprehensive approach allows us to effectively evaluate the impact of external policy interventions on migration aspirations and behaviour across a spectrum of research areas, offering valuable insights into the dynamics at play.

Case distributions

When examining the distribution of cases based on the extent of migration-relevant policy interventions, encompassing both aid initiatives and information campaigns, in conjunction with the overarching trends of migration aspiration and out-migration intensity, some noteworthy patterns emerge (Figure 10). Across the spectrum of research areas, there is a discernible (negative) correlation between migration aspirations and out-migration behaviour, respectively, and the degree of migration-reducing policy interventions. Essentially, this implies that as migration-related policy interventions, such as development aid and information campaigns, gain strength, both migration aspirations and out-migration intensity tend to decrease, particularly when policy interventions increase from a low level (from the high end of the distribution in Figure 10 to the left).

However, it's important to acknowledge a nuanced counterpoint to this trend. In a few exceptional cases, such as São Nicolau (CPV1), we observe high levels of both migration aspirations and out-migration intensity coexisting with equally high levels of migration-deterring policy interventions. On the other hand, a case like Youhanabad (PAK2) shows high levels of policy interventions but very low levels of migration aspirations and out-migration. These extreme cases challenge the conventional expectation that policy interventions consistently work and suggest the presence of intricate, multifaceted factors at play.

In summary, the interplay between external migration-related policy interventions and migration dynamics is multifaceted and intricate. While a broad negative correlation is evident, the presence of extreme cases with contrasting patterns underscores the complexity of migration behaviour and the intricate factors that influence it. Further investigation into these cases

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may provide valuable insights into the intricate dynamics of migration aspirations and behaviour within the context of external policy interventions.

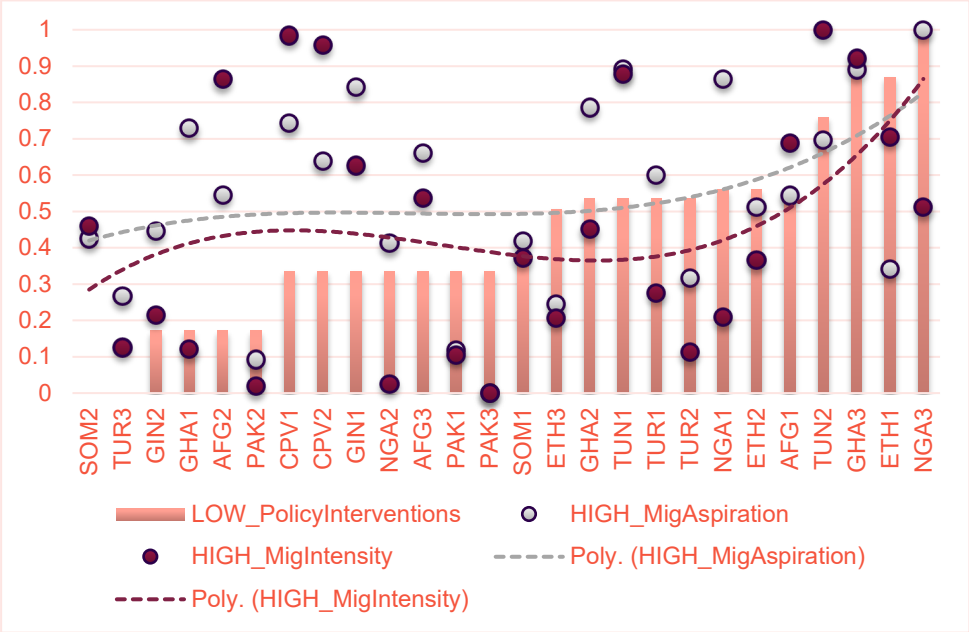

Figure 10. Level of policy intervention vs. migration aspirations and out-migration intensity

Note: Polynomial trend line is of order 3 (cubic). Raw data source: MIGNEX Survey (mxs-prep-merge-2023-01-20.dta) and MIGNEX Coding Scales based on Research Area Interim Reports (MIGNEX Handbook Chapter 11).

Directional expectation:

Low level of external policy interventions (LOW_POLICYINTERVENTIONS) in terms of development aid and migration-deterring information campaigns is a sufficient condition for both high migration aspirations and high out-migration intensity.

Anchor cases

Ekpoma (NGA3) and Edo State, often referred to as migration hotspots, have witnessed the implementation of donor-funded migration campaigns aimed at raising awareness about the perils of irregular migration, human trafficking, and migrant smuggling. These campaigns have gained significant visibility among young adults through various channels, with social media (39%), television (33%), and radio (24%) emerging as the most prevalent sources of information.

Return migration is a common phenomenon in this region, with many individuals having faced deportation from countries such as Libya or various European nations. These returns are often facilitated through

programs like the International Organization for Migration (IOM) return scheme. While there are specific initiatives aimed at reintegrating returnees, including vocational programs funded by international donors (Aghedo et al., 2022), awareness of micro-level aid projects remains very limited, with only 1.4% of MIGNEX survey respondents reporting knowledge of such projects.

Baidoa (SOM2) is a rapidly growing city in the Southwest State of Somalia, experiencing substantial in-migration that has significantly impacted the local economy, city development, and livelihood expansion. This influx of migrants has also attracted international humanitarian assistance. Foreign development interventions are prominent, with 74% of young adults being aware of interventions. A majority of respondents believe that these interventions have a substantial (37%) or moderate (61%) impact on Baidoa. Additionally, 70% of the respondents have been exposed to migration campaigns (Kasavan et al. 2022c).

Kilis (TUR3) is a city and province located in south-eastern Anatolia in southern Turkey, situated on the border with Syria. Since the arrival of Syrian refugees in Kilis, funding from the European Union and international non-governmental organisations has supported major development and social protection reforms in the region. These initiatives encompass psycho-social support, social cohesion programmes, and livelihood projects.

To conclude, this section has introduced the model specifications and operationalisation of the outcome and conditions. Through the application of this analytical framework and an exploration of the intricate interplay between migration aspirations and diverse migration drivers, the study aims to attain a comprehensive understanding of migration patterns and outcomes. The results of the various QCA models are presented in the following section.

Analysis and results: driver configurations for migration aspirations and migration intensity

In this section, we apply a fuzzy set Qualitative Comparative Analysis (fsQCA) to examine the core model for both migration outcomes. Model MIG1A represents migration aspirations, while Model MIG2A represents actual migration behaviour. Additionally, we evaluate the influence of migration-related policies in an extended model for each outcome, denoted as MIG1B and MIG 2B, respectively.

To maintain a structured approach, we follow the two-step migration methodology. Initially, we scrutinise all models for Outcome 1, which captures the level of migration aspirations. Subsequently, we proceed to analyse Outcome 2, focusing on the intensity of out-migration at the research area level.

In our analysis, we utilise the R software, specifically the ‘SetMethods’ (Oana and Schneider 2018) and ‘QCA’ (Dusa 2019) package. These software tools

enable us to conduct a range of operations and analyses aimed at uncovering patterns, relationships, and configurations among the conditions of interest. For a more detailed explanation, please refer to Annex 1: "Details of the QCA methodology".

Truth tables and truth table minimization

The primary analytical tool in the QCA process is the truth table, comprising all logically possible combinations of conditions within the respective model specification. Our analysis involves a total of five different models, which necessitates ten distinct truth tables (five for the presence of the outcome and five for its absence).[10] All truth tables can be found in Annex 4: "Truth tables." For more detailed information on the construction of the truth table, please refer to Annex 1: "Details of the QCA methodology".

In accordance with the QCA methodology and adhering to established best practices (Schneider and Wagemann 2010), we examine both the presence and the absence (negation) of the outcome. This dual evaluation is essential for conducting the enhanced standard analysis in QCA (for more details, refer to Annex 1: "Details of the QCA methodology"). Results for the negated outcomes are presented in Annex 6: "Solution paths for the negated outcomes". In the following sections, we commence by scrutinising the necessity of specific conditions in achieving the outcome before proceeding to the sufficiency analysis.

Necessary and sufficient conditions for international migration aspirations

Test for necessity

Utilizing set-theoretic relationships, a necessity relation can be identified when the fuzzy-set scores of a condition consistently equal or surpass the fuzzy-set scores of the outcome. Our necessity analysis incorporates both the positive (affirmative) and negative expressions of the conditions. In adherence to the established QCA standards, we set the minimum threshold for the necessity test's level of consistency at 0.9.[11]

Upon conducting the analysis to identify necessary conditions, we discover that none of the conditions can definitively be categorized as necessary for the occurrence of "high international migration aspirations" (Model 1). This finding is consistent with the negated outcome, as detailed in Annex 5: "Test for necessary conditions".

In light of the existing literature and our theoretical framework, it is plausible that none of the conditions we examined can be unequivocally designated as necessary. This is because prior research and our theoretical reasoning suggest that migration aspirations can manifest under various circumstances and may not hinge on one specific enabling condition.

[10] We make use of the function truthTable() in package QCA (Dusa 2019). See Annex 1 for detailed information on the QCA procedure and construction of the truth table.

[11] Coverage and relevance of necessity were also checked, to avoid trivial necessary conditions.

Test for sufficiency for the 'core model' MIG1A

When the fuzzy-set scores of a condition consistently equal or remain below their fuzzy-set membership scores in relation to the outcome, it indicates that the condition is sufficient for the outcome. The process of truth table minimization yields three distinct solution types for sufficiency: the conservative, parsimonious, and intermediate solution. In the forthcoming analysis, we focus primarily on and discuss the intermediate solution, which offers a balanced trade-off between parsimony and complexity. For further details on other solution types, please refer to Annex 1: "Details of the QCA methodology" and Annex 9: "Conservative and parsimonious solutions for all models" for their respective results.

Key concepts and measures of fit

Consistency determines the accuracy of the approximation of the subset relationship and therefore provides information regarding the model's validity.

Coverage measures empirical relevance by evaluating the number of cases covered by the solution or solution path. S*olution coverage* indicates how much is covered by the solution term. *Raw coverage* signifies the share of the outcome that is explained by a specific alternative path, while the *unique coverage* refers to the share of the outcome that is *exclusively* explained by a specific alternative path.[12]

Proportional Reduction in Inconsistency (PRI) is a score which is used to avoid simultaneous subset relations of configurations. PRI consistency scores should be high and close to raw consistency scores (e.g., 0.7), while configurations with PRI scores below 0.5 indicate significant inconsistency.[13]

C*overed cases* represent the cases which empirically exhibit the combination of conditions of each solution path.

The results of our sufficiency analysis are presented through solution paths, which elucidate the combination of conditions contributing to the outcome of interest. One or more solution paths collectively constitute the solution formula, which may encompass conditions present (indicated in uppercase) and conditions absent (indicated in lowercase). Furthermore, the QCA analysis involves several measures to assess the strength and validity of results (see Box: "Key concepts and measures of fit").

Please take note that, in the interest of simplicity, we have opted not to delve into an extensive discussion of the measures of fit for each model within this section. However, it is important to highlight that all models included in our analysis conform to the acceptable thresholds as established by QCA

[12] Ragin 2010; Schneider and Wagemann 2012

[13] Greckhamer et al. 2018

standards of good practice, as suggested, for instance, by Schneider and Wagemann (2012).

Table 2 highlights the crucial aspects of our analysis, with a specific focus on the sufficiency conditions that lead to high migration aspirations within the framework of Model MIG1A. Our notation follows standard practice, with black circles denoting the presence of a condition and crossed-out circles signifying the absence of the respective condition. This analysis serves as a pivotal step in our effort to unveil the intricate factors influencing migration aspirations at the research area level.

Table 2. Sufficiency conditions for high international migration aspirations (Model MIG1A)

Intermediate Sufficient Solution for the Outcome HIGH MIGRATION ASPIRATION			
		Path 1	**Path 2**
		poor_live **AND** STRONG_MIGCULT	POOR_LIVE **AND** WEAK_GOVPUBSS
Conditions	**Label**		
Poor Livelihoods	POOR_LIVE	⊗	●
High Insecurity and Conflict	HIGH_INSECON		
Weak Governance and Public Services	WEAK_GOVPUBSS		●
High Environmental Stress	HIGH_ENVSTRESS		
Strong Migration Culture	STRONG_MIGCULT	●	
Consistency		0.931	0.835
PRI		0.769	0.677
Raw Coverage		0.516	0.716
Unique Coverage		0.132	0.333
Covered Cases		CPV1, CPV2; TUR1; TUN1; SOM2	GIN2; GHA2; GIN1; NGA1, NGA2, ETH2; NGA3, AFG1; GHA1; ETH3, TUN2, AFG2, AFG3
Solution Consistency	0.841		
PRI	0.690		
Solution Coverage	0.849		

Note: Black circles indicate the presence of a condition, crossed-out circles its absence. Condition names in lower caption mean the absence of the condition.

Solution formula for Model MIG1A:

Poor livelihoods * STRONG MIGRATION CULTURE + POOR LIVELIHOODS * WEAK GOVERNANCE and PUBLIC SERVICES

→ HIGH MIGRATION ASPIRATIONS

Within the framework of the core model MIG1A, dedicated to the examination of fundamental root causes of high migration aspirations, we uncover two significant solution pathways.

Path 1 combines a strong culture of migration with the absence of poverty and poor livelihood conditions. On the other hand, Path 2 involves the presence of high poverty and poor livelihood circumstances along with weak governance and lower quality of public services. Importantly, one pathway emerges in the absence of adverse livelihood situations, whereas the other occurs when such conditions are present. This intricate finding highlights the dual impact of fundamental migration drivers.

In the scenario where a robust migration culture thrives alongside the absence of unfavourable livelihood conditions, it propels high international migration aspirations (Path 1). Conversely, the coexistence of poor livelihood situations, in conjunction with weak governance, forms a separate pathway, representing two common yet competing explanations for international migration aspirations: the political-economic (Path 2) and the socio-cultural (Path 1) pathways.

Both of these pathways exhibit high consistency and coverage, affirming their empirically validity and relevance in our analysis.

Case analysis

The sufficiency plot (Figure 11) reveals how cases are distributed concerning their membership in the outcome and the solution formula. In the upper right quadrant, predominantly robust typical cases, such as NGA3, GIN1, and CPV1, are shown.

For example, consider São Nicolau (CPV1) in Cabo Verde, which perfectly exemplifies and is uniquely covered by Path 1. It aligns with the high migration aspirations outcome, with over half of its young adults (55%) expressing a desire to leave Cabo Verde in the near future. An even larger majority (79%) would do so if they were provided with the necessary documents. São Nicolau epitomizes the combination of conditions that signify the absence of absolute poverty and poor livelihoods, and a strong migration culture. Notably, 91% of survey respondents reported that no household member went to bed hungry in the past month, and only 5% reported financial difficulties. Additionally, residents of São Nicolau have been emigrating in significant numbers since the 1970s, and nearly everyone on the island (98%) has relatives or friends abroad (Carling and Hagen-Zanker 2022).

Besides ‘typical cases’, there are also deviant cases regarding consistency (DCC), situated in the lower right quadrant of the sufficiency plot. These

cases are part of the solution but not the outcome. Conversely, for deviant cases' coverage, they belong to the outcome but not the solution. These phenomena are puzzling, and a closer examination of these cases can shed light on potentially missing conditions that may also contribute to the outcome (Oana and Schneider 2021).

Examples of DCC for Model MIG1A include ETH3, NGA2, SOM2, and GIN2. Further investigation is needed to uncover the factors contributing to their divergence from the outcome.

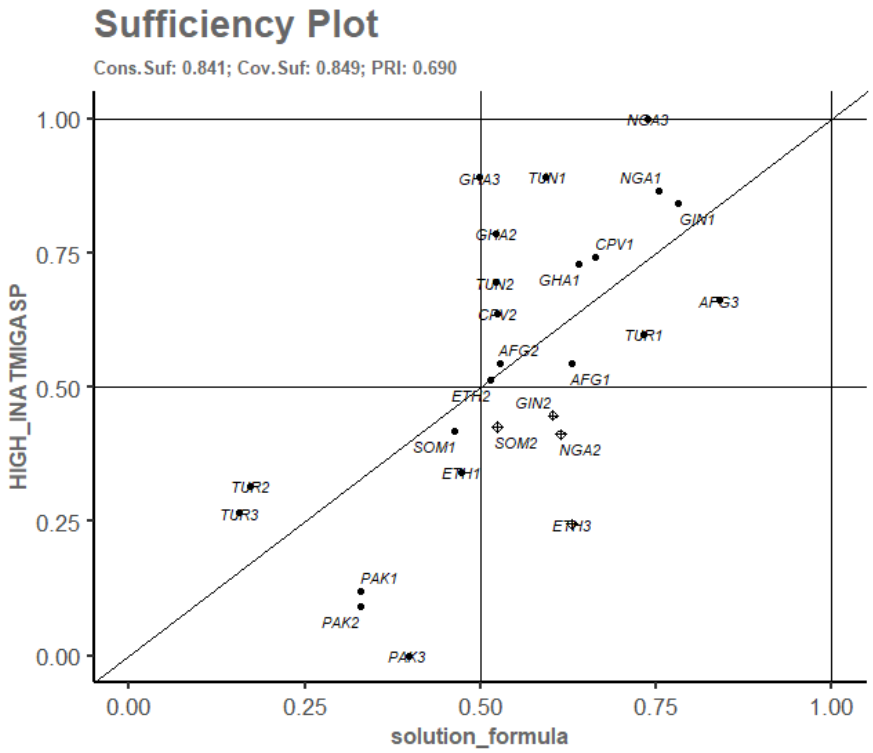

Figure 11. Sufficiency plot for the intermediate solution of model MIG1A

Our analysis brings to light an intriguing revelation: research areas within the same country may share similar overall conditions without necessarily yielding identical outcomes in terms of migration aspirations. Take, for example, the cases of Awe (NGA2) and Ekpoma (NGA3). Although they have certain shared conditions, a closer examination reveals significant disparities. Ekpoma, for instance, has witnessed substantial educational expansion in recent years. This expansion may amplify migration aspirations by enhancing awareness of migration and addressing limited employment opportunities for graduates (Aghedo et al. 2022). In contrast, Awe has historically served as an internal migration destination, with agriculture being a primary source of livelihood. In this context, despite local conflicts, international out-migration remains an infrequent choice, regarded as distant and perilous (Genyi et al. 2022). These nuanced distinctions underscore the importance of conducting qualitative background research to elucidate the contextual intricacies influencing divergent migration dynamics.

Test for sufficiency for the 'extended policy model' (MIG1B)

In our extended policy model, MIG1B, we have amalgamated the four root causes previously examined in Model MIG1A into a single encompassing condition, representing the presence of a high level of root causes ('HIGH_RC'). This consolidation enables us to scrutinize how these structural drivers interact with a well-established migration culture and the influence of low levels of migration-relevant policy interventions.

Within the framework of Model MIG1B, which explores the combined impact of a high presence of root causes along with migration culture, policy interventions, and migration feasibility, our analysis reveals the following solution formula:

Solution formula for model MIG1B:

STRONG ROOT CAUSES * LOW_POLICY INTERVENTIONS + STRONG MIGRATION CULTURE * LOW_POLICY INTERVENTIONS + LOW POLICY INTERVENTIONS * HIGH MIGRATION FEASIBILITY + STRONG ROOT CAUSES * STRONG MIGRATION CULTURE * high migration feasibility

→ HIGH MIGRATION ASPIRATIONS

Within this solution, we have identified four distinct solution pathways (see Table 3). The first three pathways notably highlight the role of low levels of migration-relevant policy interventions as contributing factors to high migration aspirations.

Path 1 combines a low level of migration-related policy interventions with the presence of strong root causes. Path 2 entails a low level of policy interventions alongside a well-established migration culture. Interestingly, these first two pathways resemble the results from Model MIG1A, where we found one pathway linked to structural root causes and another related to socio-cultural factors as drivers of high migration aspirations.

Path 3 involves a low level of policy interventions coupled with a high perceived feasibility of migration. This can be referred to as the "policy pathway" since migration feasibility encapsulates aspects of the migration policy environment, while migration-related policy interventions capture migration awareness campaigns and efforts to address root causes through aid.

While we cannot definitely discern whether the low level of micro-level aid or limited exposure to migration campaigns plays a more significant role, we can confirm our hypothesis that a scarcity of the combination of migration-relevant policy interventions contributes to elevated migration aspirations, possibly due to reduced confidence in local prospects and opportunities.

Notably, a low level of policy interventions contributes to heightened migration aspirations when combined with a strong presence of (combined) fundamental root causes, a well-established culture of migration, or a high perceived feasibility of migration.

Table 3. Sufficiency conditions for high international migration aspirations (Model MIG1B)

Intermediate Sufficient Solution for the Outcome HIGH MIGRATION ASPIRATION					
		Path 1	**Path 2**	**Path 3**	**Path 4**
		STRONG_RC **AND** LOW_POLINT	STRONG_MIGCULT **AND** LOW_POLINT	HIGH_MIGFEAS **AND** LOW_POLINT	STRONG_RC **AND** STRONG_MIGCULT **AND** high_migfeas
Conditions	**Label**				
Strong Root Causes	STRONG_RC	●			●
Strong Migration Culture	STRONG_MIGCULT		●		●
Low Policy Interventions	LOW_POLINT	●	●	●	
High Feasibility of Migration	HIGH_MIGFEAS			●	⊗
Consistency		0.872	0.886	0.841	0.904
PRI		0.716	0.748	0.623	0.732
Raw Coverage		0.563	0.596	0.570	0.503
Unique Coverage		0.017	0.036	0.010	0.096
Covered Cases		NGA1; ETH2; GHA2, AFG1; NGA3, ETH1,ETH3,TUN2	GHA3; TUN1, TUR1; GHA2, AFG1; NGA3, ETH1, ETH3, TUN2	TUR2; TUN1, TUR1; ETH2; NGA3, ETH1, ETH3,TUN2	GIN1; GHA2, AFG1
Solution Consistency	0.845				
PRI	0.667				
Solution Coverage	0.763				

Note: Black circles indicate the presence of a condition, crossed-out circles its absence. Condition names in lower caption mean the absence of the condition.

Path 4 consists of the conditions involving strong root causes, a well-established migration culture, and the absence of high migration feasibility. Interestingly, the feasibility of migration itself does not directly influence high migration aspirations. Rather, it's absence of such feasibility, when combined with strong root causes (acting as push factor) and a strong migration culture (serving as a facilitating factor), that contributes to heightened migration aspirations.

Case analysis

Ekpoma (NGA3) stands out as an archetypical example in our analysis, vividly illustrating various critical aspects. Ekpoma is an integral part of Path 1, 2 and 3, situated within the outcome (located in the upper right quadrant of Figure 12). These findings underscore the pivotal role played by the presence of low levels of migration-relevant policy interventions, consistently contributing to high migration aspirations when coupled with strong root causes, a robust migration culture, or high migration feasibility.

In Ekpoma, migration aspirations are notably pronounced, especially concerning international migration. A substantial majority of surveyed young adults (86%) express a preference to leave Nigeria within the next five years, with the vast majority (92%) indicating a willingness to migrate to a more affluent country if provided the necessary documentation.

A deeply ingrained culture of migration is readily apparent, as most young adults (95%) believe their families would endorse their decision to migrate to a wealthier country. The prevalence of international migration is further stimulated by prestigious social clubs for mothers of migrants who organise fundraising for social events like weddings. These groups also generate funds to support their children's migration endeavours. Furthermore, connections between residents at home and abroad remain active and robust. A significant proportion of young adults (68%) maintain regular contact with migrant family members or friends living abroad. Profound knowledge regarding various migration-related details, including legal and irregular channels, costs, requirements, and practicalities like exchange rates, is widespread.

With regards to migration-related policy interventions, Ekpoma hosts a thriving 'industry' centred around the reintegration of returnees, often facilitated through vocational programmes supported by international donors. Ekpoma and Edo State, known as migration hotspots, are the focus of donor-funded migration campaigns aimed at addressing irregular migration, human trafficking, and migrant smuggling. A significant number of young adults are well-informed about these campaigns, primarily through social media (39%), television (33%), or radio (24%) channels (Aghedo et al. 2022).

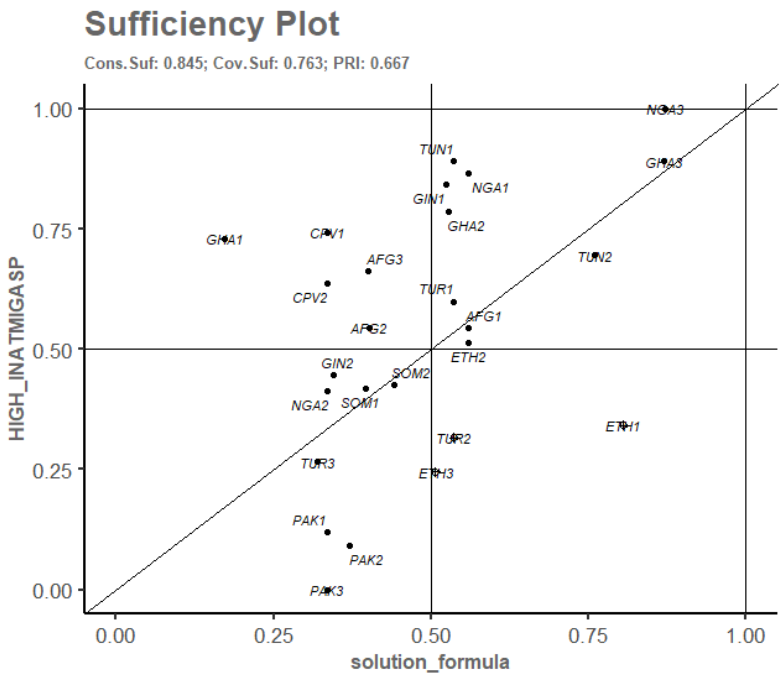

Figure 12. Sufficiency plot for the intermediate solution of model MIG1B

Conversely, ETH1 and ETH3 represent deviant cases in terms of consistency and are part of the solution formula but not of the outcome set. Moyale (ETH3) is a part of the solution formula due to its robust culture of migration, intertwined with strong socio-cultural, economic, and ethnic ties with border towns in Kenya, and the presence of conditions that might be categorized as 'root causes'.

In Moyale, a substantial 64% of the surveyed young adults face significant challenges in securing stable employment opportunities. Additionally, a significant majority, comprising 71% of respondents, find it difficult to sustain their livelihoods and provide adequately for their families. The economic hardships in Moyale have been exacerbated by a series of significant events. Since 2018, the region has grappled with severe security issues arising from renewed conflicts along the Oromo and Somali border. Moreover, recurrent periods of drought have intensified the strain on local development and exacerbated tensions and conflicts within the Moyale region.

However, despite these adverse factors, migration aspirations remain low in this research area. Less than half (47%) of surveyed young adults express a desire to migrate to a wealthier country, even if provided with the necessary documents. For those with aspirations, this often involves regular travel to Kenya. One possible explanation for these low aspirations could be the hopeful anticipation that the security situation will stabilize, potentially boosting the local economy through border trade, as suggested by Adhanom and Murray (2022).

Necessary and sufficient conditions for international migration intensity

Test for necessity

In our pursuit to understand the intricate conditions driving the level of international out-migration from a research area, we continue our investigation of the multifaceted interplay of factors shaping this phenomenon, differentiating between 'high' and 'not high' levels of out-migration. While it is evident that no single condition can unequivocally determine the presence or absence of high international out-migration intensity, our analysis sheds light on specific factors that demonstrate a profound connection with both scenarios, providing valuable insights into the complex dynamics at play.

Beginning with the concept of necessity, one notable condition that emerges is the presence of a robust and thriving migration culture. This condition comes remarkably close to attaining the status of a necessary condition, with a consistency rate of 0.882 and a 'relevance of necessity' of 0.727 (Annex 5.3. "Test for necessity for the outcome of Model MIG2A, MIG2B and MIG2C"). However, as it narrowly misses the conventional 0.9 threshold for consistency, we refrain from designating it as the sole necessary condition, recognising the importance of acknowledging a slight margin of uncertainty. Nonetheless, it is essential to underscore that, when compared to Models MIG1A and MIG1B, a strong migration culture assumes a more prominent role in influencing actual out-migration behaviour rather than shaping initial migration aspirations. This aligns with existing literature on migration networks and cumulative causation, as discussed by scholars such as Massey et al. (1993) and de Haas (2010b).

Test for sufficiency for the 'core model' MIG2A

As we shift our focus to the sufficiency analysis for the 'core model', Model MIG2A, our initial step entails establishing directional expectations for the conditions employed in both Models MIG2A and MIG2B. These theoretical expectations are laid out in Annex 3: "Directional expectations for the intermediate solutions" and are rooted in the insights from our literature review in the section "Migration aspirations and decisions: the interplay of multiple driver domains".

Our theoretical expectations for the core set of root causes closely correspond with the directional expectations for Model MIG1A and Model Mig1B. The only notable difference pertains to the condition 'High poverty and poor livelihoods.' Here, we anticipate a negative causal relationship with the out-migration outcome. This expectation is grounded in our understanding that high levels of absolute poverty tend to impede the ability to migrate, even when migration aspirations are high (de Haas 2021; McKenzie 2018). Consequently, we hypothesise that lower levels of poverty contribute to higher levels of out-migration.

In addition to the core set of root causes, we incorporate migration aspirations and perceived feasibility into Model MIG2C as additional conditions. For those conditions, we anticipate a positive causal relationship

with the presence of high out-migration. This expectation is based on the propositions of the aspirations-capability framework, which suggest that individuals with greater migration aspirations and a perception of feasible migration options are more likely to engage in (international) out-migration.

In essence, our sufficiency analysis is guided by a nuanced understanding of how the core set of root causes interacts with the strong presence of a migration culture (Model MIG2A) in combination with migration aspirations and feasibility perceptions of potential migrants and the presence of migration-related policy interventions (Model MIG2C).

Table 4 reveals the solutions derived from our evaluation of the sufficiency conditions for high migration intensity and its absence within Model MIG2A. This analysis culminates in the formulation of an overall solution formula, which encapsulates the interplay of and impact of key factors on out-migration intensity.

Solution formula for model MIG2A:

poor livelihoods * STRONG MIGRATION CULTURE + WEAK GOVERNANCE and PUBLIC SERVICES * STRONG MIGRATION CULTURE

→ HIGH MIGRATION INTENSITY

This core model uncovers two distinct solution pathways that shed light on the complex dynamics of migration patterns. In Path 1, we find the absence of poverty and poor livelihoods in combination with a strong and vibrant migration culture. Path 2, on the other hand, involves the interplay of weak governance and public services alongside a strong culture of migration.

Consistent with our findings from the necessity analysis, a robust migration culture emerges as a pivotal factor in both pathways. Much like the factors shaping migration aspirations, the convergence of improved living conditions (i.e., the absence of poor livelihoods) and a well-established migration culture emerges as sufficient conditions for high migration intensity. This underscores the critical role played by migration capabilities, where the absence of impoverished living conditions acts as a reliable indicator (de Haas 2010a). Hence, the synergy of a culturally ingrained desire to migrate with the means to do so becomes a driving force behind a high migration intensity in the research areas.

The second ‘equifinal’ pathway entails the combination of weak governance with a strong migration culture. Therefore, the persistent presence of a strong and robust migration culture in both solutions paths highlights the essential role played by social networks in translating migration aspirations into tangible migration outcomes.

In addition to these identified pathways, it is particularly striking to note the absence of environmental stress, insecurity, and conflict as contributing factors in any of the solutions we have unveiled. This is a noteworthy

observation, especially considering the prevailing global belief that conflict and climate change are major drivers behind the significant and potentially rising numbers of migrants and refugees across the world. However, upon closer examination of research areas in ten developing countries, our findings do not provide substantial evidence to support the notion that these fundamental root causes exert a significant influence on actual out-migration in these specific regions.

Regarding the measures of fit, this model is deemed acceptable but not as consistent as the other models (see Table 4). This indicates that additional conditions are necessary to provide a comprehensive explanation for the phenomenon of a high migration intensity.

Table 4. Sufficiency conditions for high international migration intensity (Model MIG2A)

Intermediate Sufficient Solution for the Outcome HIGH MIGRATION INTENSITY			
		Path 1	**Path 2**
		poor_live **AND** STRONG_MIGCULT	WEAK_GOVPUBSS **AND** STRONG_MIGCULT
Conditions	**Label**		
Poor Livelihoods	POOR_LIVE	⊗	
High Insecurity and Conflict	HIGH_INSECON		
Weak Governance and Public Services	WEAK_GOVPUBSS		●
High Environmental Stress	HIGH_ENVSTRESS		
Strong Migration Culture	STRONG_MIGCULT	●	●
Consistency		0.835	0.786
PRI		0.654	0.599
Raw Coverage		0.564	0.684
Unique Coverage		0.091	0.211
Covered Cases		CPV1, CPV2; TUR1; TUN1; SOM2	TUN1; GHA2; GIN1; NGA3, AFG1; ETH3, TUN2, AFG2, AFG3
Solution Consistency	0.771		
PRI	0.581		
Solution Coverage	0.775		

Note: Black circles indicate the presence of a condition, crossed-out circles its absence. Condition names in lower caption mean the absence of the condition.

Case analysis

A noteworthy case that merits attention is TUN1, as it consistently emerges in both solution paths and plays a crucial role in the final outcome. Situated in

the upper right quadrant of Figure 13, this case represents the research area of Enfidha in northeastern Tunisia. Despite is abundant agricultural potential and significant infrastructure developments, including the construction of an international airport in 2009 and the recent establishment of an industrial zone, the local community, particularly the younger generation, grapples with a complex set of challenges.

Enfidha's young adults face limited economic opportunities, harbour scepticism towards government institutions, and notably possess high aspirations for migration. In this specific context, where nearly 90% of the young population has family or friends residing abroad (as reported by Kasavan et al. 2022a), international out-migration remains a prevalent phenomenon. This underscores the self-perpetuating nature of a robust migration culture in Enfidha, where a history of emigration and the presence of a supportive network abroad continue to fuel the desire to seek opportunities beyond their homeland.

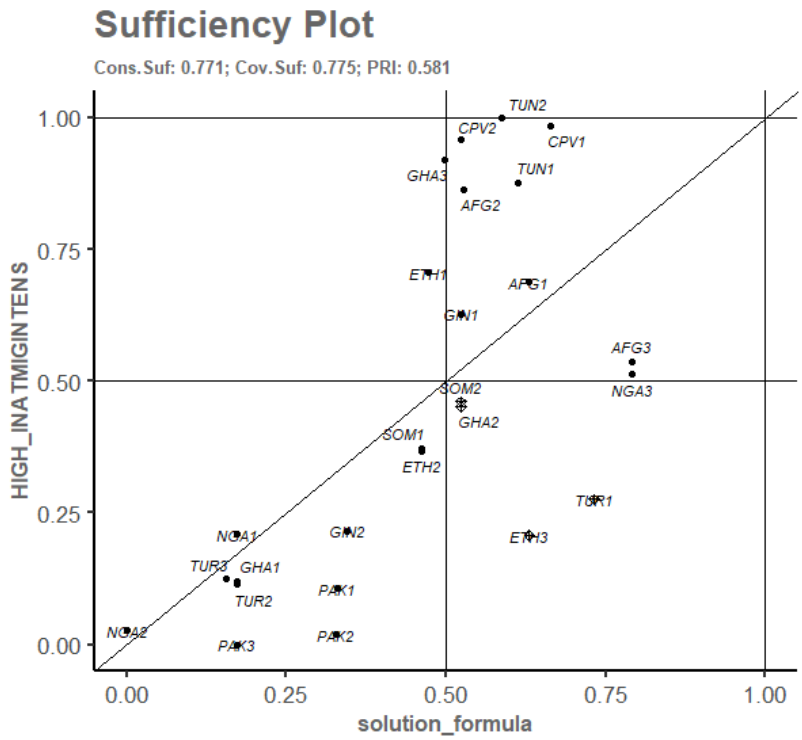

Figure 13. Sufficiency plot for the intermediate solution of model MIG2A

Nonetheless, it is crucial to recognise and delve into particular deviant (outlier) cases, such as SOM2, TUR1, GHA2, and ETH3, which exhibit outcomes that do not conform to the typical pattern. For instance, let's take the case of Hopa (TUR1). Here, there is a well-established and deeply ingrained migration culture, with a significant proportion (58%) of young adults having relatives and acquaintances living abroad. Surprisingly, despite this strong migration culture, the predominant realisation of migration aspirations in Hopa tends to be through domestic migration. This

counterintuitive phenomenon is attributed to unique internal opportunities, as elucidated by Ensari et al. (20223).

MIGNEX Background Paper

Test for sufficiency for the 'extended policy model' MIG2B

In a manner akin to Model MIG1B, we investigate the conditions of strong root causes, a robust migration culture, low policy interventions, and high migration feasibility in Model MIG2B. In this model, the outcome is specified as the presence of high migration intensity. Our analysis yields the following solution formula:

Solution formula for model MIG2B

Strong root causes * STRONG MIGRATION CULTURE * LOW POLICY INTERVENTIONS + STRONG MIGRATION CULTURE * high migration feasibility * LOW POLICY INTERVENTIONS

→ HIGH MIGRATION INTENSITY

This result shows that two distinct pathways may contribute to high migration intensity (Table 5). Path 1 is characterised by a strong migration culture, combined with a low level of migration-deterring policy interventions and the absence of strong root causes. Path 2, on the other hand, comprises a strong migration culture in tandem with low policy interventions and the lack of high migration feasibility.

Both pathways prominently feature a well-established culture of migration and a low level of migration-related policy interventions. However, they differ in their inclusion of either the absence of strong root causes or the absence of high migration feasibility. This underscores the importance of a well-established culture of migration and the scarcity of migration-related development interventions as key facilitators for out-migration in diverse contexts.

In one context, the absence of strong root-causes suggests research areas without a high prevalence of poverty, governance issues, or insecurity. In the second context, the absence of a high feasibility of migration implies that people may find out-migration challenging or risky. Notably, the second pathway stands out as it demonstrates that even in contexts with low feasibility, a high migration intensity is attainable due to the presence of strong international connections and a firmly established migration culture, along with the absence of migration-related development interventions.

Table 5. Sufficiency conditions for high international migration intensity (Model MIG2B)

Intermediate Sufficient Solution for the Outcome HIGH MIGRATION INTENSITY			
		Path 1	**Path 2**
		strong_rc **AND** STRONG_MIGCULT **AND** LOW_POLINT	STRONG_MIGCULT **AND** high_migfeas **AND** LOW_POLINT
Conditions	**Label**		
Strong Root Causes	STRONG_RC	⊗	
Strong Migration Culture	STRONG_MIGCULT	●	●
Low Policy Interventions	LOW_ POLINT	●	●
High Feasibility of Migration	HIGH_ MIGFEAS		⊗
Consistency		0.856	0.882
PRI		0.687	0.729
Raw Coverage		0.477	0.504
Unique Coverage		0.080	0.106
Covered Cases		GHA3; TUN1, TUR1	GHA3; GHA2, AFG1
Solution Consistency	0.846		
PRI	0.660		
Solution Coverage	0.583		

Note: Black circles indicate the presence of a condition, crossed out circles its absence. Condition names in lower caption mean the absence of the condition.

Case analysis

In Ghana, two research areas stand out as distinctive cases – one exemplifying a typical scenario and the other a deviant one (see Figure 14). New Takoradi (GHA3) represents the typical case and is encompassed by both solution pathways. It stands out as a prime example of high out-migration intensity, with a significant majority of young adults surveyed (82%) having family or friends residing abroad. Moreover, New Takoradi exhibits a pronounce inclination towards international out-migration, often seen as a crucial means of improving livelihoods and escaping poverty. Remarkably, 52% of its residents have been actively encouraged by others to migrate to a richer country.

However, within the context of Path 2, international migration is not perceived as very feasible in new Takoradi. Many young adults maintain close ties with male migrant family or friends who have become trapped in Libya while attempting to reach Europe. Over half of the surveyed young adults (51%) have personal knowledge of someone who lost their life during their journey to another country, and approximately 40% have encountered

someone who has been injured or have themselves experienced injuries while travelling to another country within the past five years.

Despite numerous development interventions and investments, New Takoradi grapples with prolonged economic stagnation, primarily due to a sustained lack of job opportunities. This may explain the low presence of migration-related development interventions in both solution paths, as they are not well-known by the target population despite their actual salience. It may also have to do with the type of development intervention, which have included partnerships with international oil and energy firms, the reconstruction of the market circle and harbour, and therefore have not targeted people at the micro-level. Additionally, absence of strong root causes is evident, with 47% of residents finding it relatively easy to earn a living in New Takoradi, and 81% expressing satisfaction with the quality of schools (Kandilige et al. 2022).

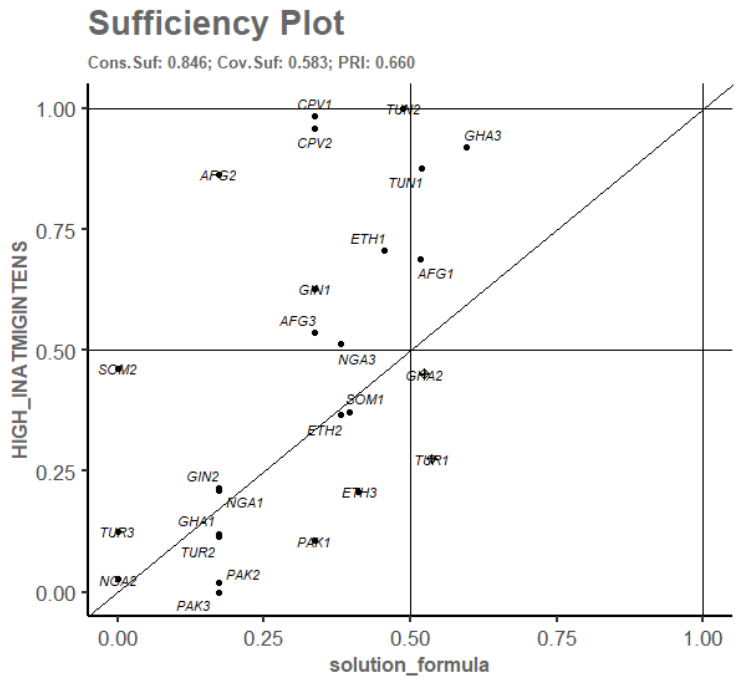

Figure 14. Sufficiency plot for the intermediate solution of model MIG2C

On the other hand, Golf City (GHA2) represents a deviant case in terms of consistency, as it is part of the solution formula but does not display a high level of out-migration intensity. While international migration is an aspiration for many, it is perceived as a distant and less attainable option. Most residents of Golf City (72%) anticipate remaining in the area for the next five years, reflecting a sense of hope for the community's future despite ongoing challenges. A significant majority of young adults (76%) who prefer to stay in Ghana instead of migrating abroad would choose internal migration within the country over staying in Golf City. Half of the surveyed young adults (50%) have seriously considered domestic migration within Ghana in the past year (Godin et al., 2022). These internal migration aspirations may explain the relatively lower rates of international out-migration compared to New Takoradi.

Exploring the differences between these two research areas and understanding why internal migration is not perceived as a viable option in New Takoradi would be a valuable avenue for further research. An intriguing puzzle emerges when we consider that most young adults in Golf City (75%) are internal migrants themselves while expressing further aspirations for internal migration. Past research has suggested that previous internal migration is significantly associated with the intention to migrate internationally (Cirillo et al. 2022). This opens exciting opportunities for deeper investigations into the interplay of factors that shape internal and international migration aspirations and decisions in these communities.

Test for sufficiency for the 'aspiration-capability' Model MIG2C

As we conclude our analysis, our attention shifts to the 'aspiration-capability model', MIG2C, which is the most comprehensive among all the models. It encompasses all the conditions found in Model MIG2B, including strong root causes, a robust migration culture, high feasibility of migration, and a scarcity of migration-related policy interventions. In addition to these, Model MIG2C introduces the crucial condition of high international migration aspirations.

The sufficiency analysis for this model yields an intricate solution formula with three distinct pathways:

Solution formula for model MIG2C:

STRONG ROOT CAUSES * STRONG MIGTRATION CULTURE * HIGH MIGRATION ASPIRATIONS + STRONG MIGRATION CULTURE * HIGH MIGRATION ASPIRATIONS * HIGH MIGRATION FEASIBILITY + STRONG MIGRATION CULTURE * HIGH MIGRATION ASPIRATIONS * LOW POLICY INTERVENTIONS

→ HIGH MIGRATION INTENSITY

Path 1 is characterised by the convergence of a strong migration culture, high migration aspirations, and the presence of strong root causes. Path 2 comprises a strong migration culture, high migration aspirations, and high migration feasibility. Path 3 represents a combination of strong migration culture, high migration aspirations, and minimal migration-reducing policy interventions (Table 6).

A striking observation is that all these solution paths necessitate the presence of a strong and robust migration culture and a high level of migration aspirations. Moreover, each integrate one additional factor: strong root causes, high migration feasibility, or a low level of migration-related policy interventions. This underscores the profound significance of high migration aspirations within the two-step migration framework. It illustrates that regardless of the specific interplay of other conditions, the presence of high

migration aspirations consistently emerges as a pivotal driver of high migration intensity. This finding underscores the central role of individual aspirations in shaping migration outcomes and offers valuable insights into the complex dynamic of international out-migration.

Table 6. Sufficiency conditions for high migration intensity (Model MIG2C)

Intermediate Sufficient Solution for the Outcome HIGH MIGRATION INTENSITY				
		Path 1	**Path 2**	**Path 3**
		STRONG_ MIGCULT **AND** HIGH_ INATMIGASP **AND** STRONG_RC	STRONG_ MIGCULT **AND** HIGH_ INATMIGASP **AND** HIGH_MIGFEAS	STRONG_ MIGCULT **AND** HIGH_INATMIGASP **AND** LOW_POLINT
Conditions	**Label**			
Strong Root Causes	STRONG_RC	●		
Strong Migration Culture	STRONG_ MIGCULT	●	●	●
High Migration Aspirations	HIGH_ INATMIGASP	●	●	●
High Migration Feasibility	HIGH_ MIGFEAS		●	
Low Policy Interventions	LOW_ POLINT			●
Consistency		0.874	0.882	0.884
PRI		0.791	0.740	0.747
Raw Coverage		0.659	0.703	0.630
Unique Coverage		0.016	0.041	0.043
Covered Cases		GIN1; GHA2, AFG1; AFG2, AFG3; NGA3, TUN2	CPV1, CPV2; TUN1, TUR1; AFG2, AFG3; NGA3, TUN2	GHA3; TUN1,TUR1; GHA2,AFG1; NGA3,TUN2
Solution Consistency	0.865			
PRI	0.733			
Solution Coverage	0.790			

Note: Black circles indicate the presence of a condition, crossed out circles its absence. Condition names in lower caption mean the absence of the condition.

Case analysis

In Figure 15 we observe the distribution of cases based on their presence in the outcome and their inclusion in the entire solution formula. Here, we pinpoint three exemplary typical cases, GHA3, TUN2, and CPV1, positioned in the upper right quadrant, and two deviant or divergent cases, GHA2 and TUR1, standing as outliers.

Redeyef (TUN2) in Tunisia exemplifies a particularly typical case. It stands out as it is represented in all three solution paths and demonstrates a high level of migration intensity. In fact, it serves as the anchor case for the entire set of cases characterised by high migration intensity, as elaborated in the section entitled “Outcome specifications”.

Redeyef boasts a strong and deeply rooted migration culture, primarily owing to its extensive history of international out-migration. This cultural element is evident as the majority of young adults (77%) in Redeyef have family, relatives, or friends residing abroad. Furthermore, international migration aspirations are notably prominent, with approximately 59% of young adults expressing their preference to leave Tunisia in the next five years.

The presence of strong root causes is palpable in Redeyef, where a prevailing sense of stagnation exists. Over three-quarters of young adults (83%) believe that the town is undergoing unfavourable changes, and only 37% find earning a living to be easy or manageable. Additionally, the majority of survey respondents (80%) express concerns about corruption as a serious issue in Redeyef. Although regular migration is less feasible than in previous decades, migration is consistently portrayed in positive terms (Kasavan et al. 2022b).

In terms of policy interventions, migration information campaigns are not commonly observed in Redeyef, and micro-level international aid is also not prominently featured. Redeyef's representation in all three solution paths, along with the combination of these factors, underscores its status as a quintessential case, contributing to our comprehensive understanding of the complex dynamics of high out-migration intensity.

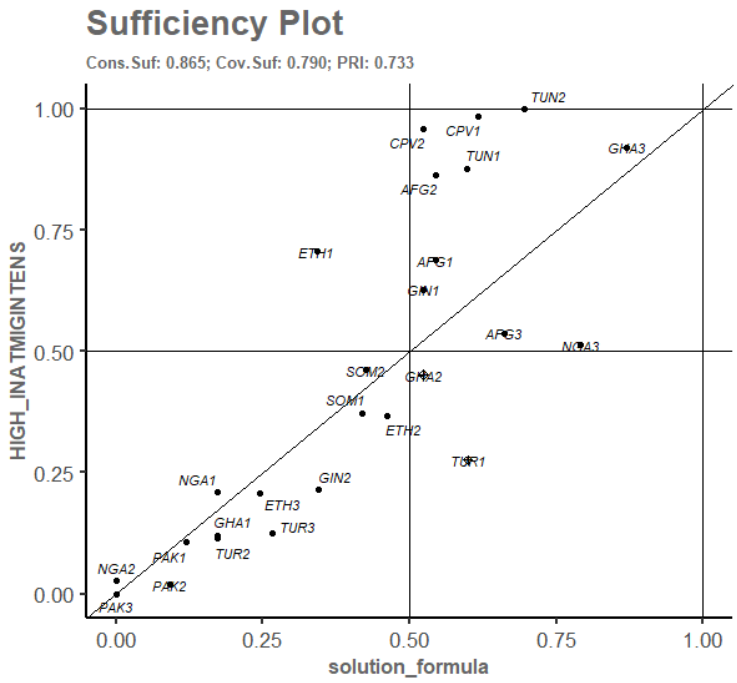

Figure 15. Sufficiency plot for the intermediate solution of model MIG2C

Once more, the fascinating case of Hopa in Turkey (TUR1) stands out as a compelling example of deviant case consistency within our analytical framework. In this context, deviant case consistency signifies that Hopa conforms to the solution pathways we have identified but does not align with the expected outcome of high international migration intensity. This

intriguing ‘anomaly’ can be attributed to the unique economic development landscape of Hopa, which is rooted in a distinct set of factors that emphasise internal and temporary migration over permanent emigration.

One of the primary reasons behind Hopa’s divergence from the expected high international migration intensity is its significant reliance on free trade and border crossings with neighbouring Georgia. The proximity to Georgia fosters economic interactions that predominantly revolve around trade and commerce, rather than international emigration. This observation is supported by fieldwork and survey data, indicating that the predominant trend in Hopa is migration to other Turkish cities. Those who do leave Turkey often opt to travel to Batumi, located in Georgia. Interestingly, this migration to Batumi is not commonly regarded as ‘going abroad’ by the local population. This distinction underscores the unique nature of migration patterns in this region, where the border between Turkey and Georgia is porous and demarcation between internal and international migration is blurred (Ensari et al. 2022).

This local context, characterised by economic opportunities, educational possibilities, and the permeable border with Georgia, shapes the prevailing migration narrative in Hopa, diverting from the typical high international migration intensity observed in other regions. In essence, the case of Hopa illuminates the nuanced nature of migration dynamics, highlighting how specific economic structures, geographical proximity and local perceptions can reshape migration patterns and aspirations. It serves as a valuable reminder that migration is not a deterministic one-size-fits-all phenomenon and underscores the importance of considering local context when analysing migration outcomes.

Robustness checks and sensitivity analysis

To ensure the credibility of our findings across the four models we examined, we conducted extensive robustness checks, documented in Annex 7: "Robustness checks”. These checks are fundamental to our methodology, serving as quality control measures to assess the stability and generalizability of our QCA results.

Our systematic exploration involved varying key parameters that are used for the truth table construction, including data calibration, minimum frequency thresholds, and consistency cut-offs. These parameters significantly influence our analysis outcomes, making their examination critical. We also assessed the reliability and validity of our findings by scrutinizing how changes in input parameters or thresholds affected the solution paths. This process helped identify essential conditions with a strong impact on our results.

Annex 7 details the boundaries and ranges within which solutions remained consistent. For example, in Model MIG1A, the "Strong Migration Culture" condition displayed specific ranges for calibration parameters. Notably, these parameters indicate that altering the fuzzification of the migration culture variable within the specified ranges would not have changed the solution pathways. At the same time, we find that in Model MIG1B the

condition for “Strong Root Causes” is more sensitive to changes in the calibration.

In summary, our core findings remained consistent throughout these robustness checks, reinforcing the validity of our reported solution pathways. This reaffirms the robustness of our conclusions, solidifying the credibility of our QCA-based insights into the five models under investigation.

Synthesis and discussion of main findings

In the forthcoming analysis, we juxtapose the respective model specifications for the two distinct dimensions of migration outcomes: aspirations and intensity, while considering the same set of contextual conditions. This approach allows us to make two distinct comparisons represented by models 1 and 2. While Models 1A and 2A are specifically designed to elucidate the causal pathways underpinning four primary root cause domains and the influence of migration culture, Models 1B and 2B provide more specific insight into the role of policy interventions in combination with other drivers shaping migration aspirations and behaviour (intensity).

Table 7 displays the solution pathways of Models 1A and 2A. A noteworthy observation emerges from this analysis, revealing a shared configurational explanation for migration aspirations and migration behaviour. This common thread consists of a robust and firmly established migration culture, combined with the absence of poverty and precarious livelihood situations. However, it is essential to recognise that actual migration decisions and behaviour necessitates a distinct explanation, diverging from the causal pathway that drives aspirations. Specifically, a high migration intensity can also stem from a strong migration culture when coupled with the presence of inadequate governance and deficient public services. Conversely, for migration aspirations, a formidable migration culture does not serve as an integral part of the second solution pathway; instead, the critical combination entails weak governance in combination with poverty and substandard livelihood conditions.

These 'alternative' pathways underscore the significant impact that states can have on migration by virtue of their governance quality and the provision of public services. In addition to acknowledging the influence of a robust migration culture, it is essential to consider these alternative explanations for both the aspirations and behaviours of individuals seeking to move. They shed light on the notion that weak governance, while not the sole factor, plays a critical role as an 'insufficient but necessary part of an unnecessary but sufficient' (INUS) solution within the broader context of migration dynamics. That is, weak governance is a 'sufficient' reason for migration when combined with other circumstances or influences, making it a viable explanation for certain migration trends.

Table 7. Aspirations versus Behaviour: Causal pathways of five different driver domains

Model MIG1A: HIGH MIGRATION ASPIRATION		MODEL MIG2A: HIGH MIGRATION INTENSITY	
Path 1	**Path 2**	**Path 1**	**Path 2**
poor_live AND STRONG_MIGCULT	POOR_LIVE **AND** WEAK_GOVPUBSS	**poor_live AND STRONG_MIGCULT**	STRONG_MIGCULT **AND** WEAK_GOVPUBSS

This intricate interplay of both disjunct and conjunct explanations for high migration aspirations and high migration intensity yields profound policy implications. While addressing the 'root causes' of migration aspirations and actual out-migration may necessitate similar intervention domains, it is far from self-evident that 'managing migration aspirations' will adequately encompass the causal configurations driving actual out-migration. In essence, these nuanced distinctions underscore the need for tailored, multifaceted policy strategies that account for the complex interplay of factors shaping the two different aspects of the migration process.

Table 8 compares the solution pathways for both respective outcomes but with the extended set of conditions. What is striking is the high relevance of policy interventions in the different solution pathways for both outcomes. While high migration intensity can only be sufficiently explained when migration-deterring 'keep-in-place policies' are absent or limited, high migration aspirations are also influenced in some research areas by low levels of aid interventions and migration-deterring information campaigns, but alternatively, can also be irrelevant of the presence or absence of policy interventions.

Table 8. Aspirations versus Behaviour: Causal pathways of root causes and policy domains

Model MIG1B: HIGH MIGRATION ASPIRATION				Model MIG2B: HIGH MIGRATION INTENSITY	
Path 1	**Path 2**	**Path 3**	**Path 4**	**Path 1**	**Path 2**
STRONG_RC **AND** LOW_POLINT	STRONG_MIGCULT **AND** LOW_POLINT	HIGH_MIGFEAS **AND** LOW_POLINT	STRONG_RC **AND** STRONG_MIGCULT **AND** high_migfeas	STRONG_MIGCULT **AND** strong_rc **AND** LOW_POLINT	STRONG_MIGCULT **AND** high_migfeas **AND** LOW_POLINT

It is noteworthy that a robust migration culture is a significant component in explaining either high aspirations or high out-migration in four out of the six solution pathways. However, the relevance of migration culture diminishes when there is a high level of perceived migration feasibility coupled with minimal policy interventions. Alternatively, it becomes less pertinent when all four root cause domains are strong and paired with limited policy interventions. Path 4 of Model MIG1B also shows that migration feasibility is not important when severe hardships ('Strong Root Causes') are present, therefore supporting claims in the literature that tightening border control will not necessarily have its intended effect of stopping migration (Czaika and de Haas 2013).

Finally, returning to the 'most complete model' depicted in Table 6, which examines an array of factors, including root causes, migration culture, policy interventions, and the provision of the aspirations-capability model, we unearth robust evidence affirming the pivotal role of migration aspirations in elucidating the actual migration behaviour, or at a research area level, the intensity of migration. This serves to validate the implications of the two-step model, where migration aspirations are a prerequisite and precede actual out-migration behaviour.

In more straightforward terms, our analysis does not reveal any substantiated evidence of significant out-migration from a research area – with the notable exception of scenarios involving forced displacement during violent conflicts, which falls outside the scope of our study – unless a substantial number of individuals within that area hold high levels of migration aspirations.

Furthermore, our findings reveal a fascinating synergy between migration aspirations and the prevailing culture of migration. When a particular research area exhibits a high level of out-migration, we can assert with a high degree of confidence that this region is characterized by a substantial population that not only nurtures high migration aspirations but also actively engages in a deeply ingrained migration culture. These interconnected dynamics shed light on the complex relationship between individual aspirations and broader societal influences, ultimately shaping migration patterns.

Conclusion

Migration is a complex and multifaceted phenomenon influenced by a multitude of interconnected factors, many of which are linked to development as a fundamental driver of migration. This paper endeavours to enhance our understanding of the intricate interplay between economic, political, social, and environmental developments, and migration outcomes.

To achieve this, our study employed fuzzy set Qualitative Comparative Analysis (fsQCA) to investigate two distinct but interconnected outcomes: high migration aspirations and high out-migration intensity. We also conducted corresponding negation tests to further illuminate the relationships between these outcomes and their determinants. Our findings not only validate a fundamental provision of the two-step migration model -

migration aspirations as prerequisite of actual migration decisions - but also provide valuable insights into the diverse pathways and conditions that lead to varying levels of migration aspirations and out-migration intensity.

Validating the two-step migration model

One of the primary objectives of our research was to assess the applicability of the two-step migration model, which posits that high migration aspirations serve as a precursor to high out-migration intensity (Carling and Schewel 2018). Through our comprehensive analysis, we consistently find high migration aspirations to be a part of a combination of sufficient conditions for the outcome of high out-migration intensity. This robust correlation strengthens the theoretical foundation of the two-step model, emphasising the pivotal role played by aspirations in driving actual migration patterns.

Pathways to migration aspirations: Political-economic and socio-cultural influences

Our study delved into the formation of international migration aspirations and identified two distinct pathways: the political-economic and the socio-cultural. Within the socio-cultural pathway, the presence of a strong migration culture, coupled with the absence of poverty, emerges as a significant contributor to high migration aspirations. This highlights the influential role of social norms, values, and community expectations in shaping individuals' aspirations to migrate. Simultaneously, we observe another valid pathway to high migration aspirations, characterised by the combination of high poverty levels and weak governance. This underscores the complex interplay between economic hardship and governance quality, which can fuel individuals' desires to seek better opportunities abroad.

The central role of migration culture

While both pathways leading to the outcome of high migration intensity are associated with high migration aspirations, our analysis reveals that a strong and robust migration culture plays an even more central role in driving high out-migration intensity. It is a recurring element in almost all solution pathways in Model MIG2A and MIG2B, approaching the status of a necessary condition. This finding underscores the enduring influence of social and community factors in motivating individuals not only to aspire to migrate but also to translate those aspirations into actual migration decisions.

The nuanced role of poverty and livelihoods

In examining the role of poverty and livelihoods in migration outcomes, our results align with the migration capability hypothesis (de Haas 2021), which posits that the absence of absolute poverty and poor livelihood situations is a key component of the solution pathways leading to high out-migration intensity. However, the relationship between poverty and migration aspirations proves to be more nuanced. Poverty was found in the two solution pathways for migration aspirations both in its presence *and* its absence. This duality suggests that poverty may serve as a motivating factor, driving individuals to seek better prospects elsewhere. Conversely, it can also limit migration by reducing educational opportunities and rendering migration less feasible as an option.

Governance and public services as root causes

Weak governance and deficient public services emerge as the most frequently present conditions among the four identified root causes in our analysis. This highlights their critical role in shaping migration aspirations and intensity. The quality of governance and the availability of public services can significantly influence individuals' perceptions of their prospects in their home countries, thus impacting their migration decisions. This is in line with other studies that indicate that governance aid is accompanied by reductions in the emigration rates of developing countries, whereas other types of aid have no discernible relationship to emigration (Gamso and Yuldashev 2018).

It is particularly striking to note the absence of environmental stress, insecurity, and conflict as contributing factors to high migration intensity. This is an important observation, especially considering the prevailing global belief that conflict and climate change are major drivers behind the rising numbers of migrants and refugees across the world. However, upon closer examination of research areas in ten low- and middle-income countries, our findings do not provide substantial evidence to support the notion that these fundamental root causes exert a significant influence on actual out-migration in these specific regions.

Reflection on deviant cases and unexpected migration outcomes

Our research includes a thorough examination of cases that are covered by the solution formula but do not exhibit the outcome (deviant cases), which provided valuable insights into the diversity of migration outcomes. These cases point to the possibility of alternative scenarios, such as internal migration or the presence of hope in local futures despite prevailing hardships. We also encounter cases of involuntary immobility, indicated by high levels of migration aspirations but no corresponding high migration intensity. Additionally, we identify cases of voluntary non-migration, characterized by the absence of high migration aspirations and high out-migration intensity, in line with the proposal by Mallick and Schanze (2020). While the presence of options for internal migration may contribute to lower international migration aspirations, a further investigation of factors that may influence voluntary non-migration is necessary.

Policy implications

Reliable policy recommendations aimed at shaping migration must be grounded in a comprehensive, evidence-based understanding of migration processes. Acknowledging the multiplicity of migration drivers is hereby imperative when designing migration-relevant policy interventions. Our findings indicate that some forms of development aid can act as an effective migration policy. Notably, investments in good governance, public services, coupled with poverty reduction efforts, emerge as pivotal opportunities to foster faith in local futures and potentially mitigate migration aspirations. These findings emphasise the need for a holistic approach that addresses both economic and socio-cultural factors influencing migration decisions. Regarding cooperation in the area of border and migration management with countries in North and Sub-Saharan Africa, such policies themselves may trigger migration and displacement and therefore produce counter-

productive effects, when such cooperation does not account for human rights abuses or endorses authoritarian regimes.

Furthermore, the results show that under certain conditions and despite hardships, migration aspirations can endure even when the feasibility of migration is perceived as low. This corroborates existing claims in the literature, suggesting that policies aimed towards deterring migration or tightening border control will not necessarily achieve their intended goal of curtailing migration; instead, they may have no effect at all or other unintended consequences (Czaika and de Haas 2013).

Governments and policymakers can use insights into migration aspirations to design policies that align with the preferences and needs of potential migrants. This includes addressing the drivers of migration aspirations and creating pathways for safe and legal migration.

Limitations and future directions

Despite the rigor of our analysis, it is vital to acknowledge several limitations in our research. Notably, some fundamental demographic and individual-level factors, such as gender, age, family status, and personal motivations, which may shape migration aspirations and behaviour, could not be included in our analysis. Additionally, the broad categorisation of drivers used in our analysis may not be universally applicable across diverse types of (potential) migrants and forms of migration. For example, research has shown that high-skilled professionals may prioritise access to high-quality institutions abroad, while low-skilled workers may be more affected by poor governance and public services and, therefore, have greater incentives to leave their poorly governed home countries (Ariu et al. 2016). Finally, capturing the causal impact of development on migration (and vice versa) is difficult, due to endogeneity issues (Andersson and Siegel 2019). For example, while migration-related policy interventions may affect migration aspirations, they themselves may be caused by policy makers decisions to respond to emigration flows by introducing information campaigns or development programmes to support income activities in the community of origin.

Furthermore, while we illuminated the interactions between factors influencing aspirations and those affecting actual migration, we were unable to definitively determine the precise drivers responsible for converting aspirations into migration decisions and actual behaviour. Our testing focused on broad structural factors, such as "governance and public services". This prevents us from making specific claims about more granular aspects affecting migration aspirations and outcomes, such as the level of corruption or the quality of education (Carling et al. 2023).

To address these limitations and provide a more nuanced understanding of migration drivers, further QCA analyses with more disaggregated data are both possible and necessary. Such efforts can help bridge the micro-macro level gap and delve deeper into the complexities of migration drivers, offering a more comprehensive and nuanced perspective on this societal phenomenon.

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Annexes

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Annex 1: Details of the QCA methodology

Qualitative Comparative Analysis (QCA) enables systematic cross-case comparisons for identifying empirical patterns within a range of diverse cases. Below we delineate key considerations and potential limitations of the methodology for our current analysis. For a comprehensive overview of the MIGNEX QCA procedure, please consult Czaika and Weisner (2023). If you seek broader understanding of QCA in general, we recommend referring to works such as Schneider and Wagemann (2012) or Mello (2021).

Constructing the truth tables

A truth table comprises all logically possible combinations of conditions. In fact, each truth table row represents one distinct logical and possible combination of conditions. The truth table provides information about the empirical distribution of cases, and their relationship to the outcome. Therefore, each row of the truth table acts as a statement of sufficiency, meaning that it specifies the combination of conditions which are sufficient or not sufficient for the outcome to occur. A truth table row can either be sufficient for the outcome (outcome value = 1), not be sufficient for the outcome (outcome value = 0), or be a logical remainder (output come =?) (cf. Oana et al. 2022). Logical remainders represent theoretically possible combinations of conditions present in the truth table, yet devoid of empirical cases.

We construct the truth table, we use the fuzzy data matrix, which serves as the foundation for our analysis. Furthermore, we establish certain thresholds for consistency and inclusion score (incl), Proportional Reduction in Inconsistency (PRI), and the minimum number of cases in a row before classifying it as a logical remainder. In all our truth tables, we have set the consistency level (incl) cut-off value at 0.8 and a PRI threshold above 0.51. Furthermore, we have also specified that each truth table row must contain at least one empirical case (n=1).

Logical minimization and solution formulas

Subsequently, utilizing these truth tables, our analysis proceeds to the logical minimization process in the following section. This critical step allows us to configure solution pathways that causally relate to heightened levels of migration aspirations and increased out-migration intensity. The analysis is implemented using the R-software (Version 4.0.5) in conjunction with the 'QCA' package (Dusa 2019) and 'Set-methods' package (Oana and Schneider 2018).

The truth table minimization yields three solutions. First, a complex solution avoids any reliance on remainders, which are configurations logically possible but lacking empirical instances. Second, the parsimonious solution which permits the inclusion of remainders that helps simplifying the solution, regardless of their empirical plausibility and the existing substantive knowledge. Third, the intermediate solution selectively

incorporates remainders that align with expected outcomes based on established empirical research and theoretical expectations (Ragin 2010).

The intermediate solution includes all logical remainder rows, i.e. truth table rows without sufficient empirical evidence, provided they align with the researcher's theory-based directional expectations concerning individual conditions and their hypothesised impact on the outcome. For instance, we assume that the 'poor livelihoods' condition positively influences high migration aspirations, while for high out-migration intensity, we hypothesize its opposite effect, based on the notion that poverty can, in some cases, constrain actual migration opportunities.

In our analysis, we did not identify easy (or implausible) counterfactuals, as all conditions could feasibly co-exist in reality. Wherever feasible, we present the Enhanced Standard Analysis (ESA) solution, while results for the conservative and parsimonious solutions are detailed in Annex 9.

Measures of fit

The QCA analysis involves various metrics to assess the strength of set relationships. Two fundamental dimensions underpin this assessment:

Consistency This metric determines the accuracy of the approximation of the subset relationship, thereby offering insights into the model's validity. It reveals the extent to which the selected configurations align with the observed data, enhancing our understanding of how well the model captures the cases.

Coverage This metric measures the empirical relevance by evaluating the number of cases covered by the solution or solution path. It helps researchers gauge the extent to which the outcome variable can be explained by the identified configurations. In this context, we differentiate between three key aspects: the 'solution coverage' denotes how much of the outcome is accounted for by the solution term; the 'raw coverage' indicates the proportion of the outcome explained by a specific alternative path; and the 'unique coverage' reveals the share of the outcome exclusively explained by a particular alternative path (Ragin 2006b; Schneider and Wagemann 2012)

The Proportional Reduction in Inconsistency (PRI) score plays a pivotal role in mitigating simultaneous subset relations among configurations. High PRI consistency scores, ideally approaching raw consistency scores (e.g., 0.7), indicate a robust and coherent configuration. Conversely, configurations with PRI scores below 0.5 indicate significant inconsistencies, demanding further scrutiny and refinement to enhance the model's explanatory power.

Finally, within the results tables, the "covered cases" represent the cases where the combination of conditions corresponding to each solution oath is empirically observed, underlying the real-world relevance of the identified configurations.

Annex 2: Operationalisation of QCA model outcomes and conditions

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Outcomes	Data and Measurement	Name
MIG1: Migration Aspirations	Survey Item C3 "Would you like to go and live in another country sometime during the next five years, or would you prefer to stay in [RESEARCH COUNTRY]?"	*'HIGH_INAT MIGASP'*
MIG2: Migration Intensity	Survey item G03 "Do you know anyone who used to live here in RESEARCH AREA who has moved to another country during the past five years?" Survey item G05 "Would you say that you know more than ten people who have moved to another country during the past five years?"	*'HIGH_INAT MIGINT'*
Conditions		
High Poverty and Poor Livelihoods **Indicator 1 - Livelihoods index**	Survey Item B1 "How easy or difficult is it to find a good job in [RESEARCH AREA]? Would you say that it is (a) Very easy, (b) easy, (c) difficult, (d) Very difficult? Survey Item B6 "In general, do you find that earning a living and feeding a family in [RESEARCH AREA] is… (a) Easy, (b) Manageable, or (c) Difficult? Survey Item B2 "What is your own current work situation? Are you unemployed? (a) yes, (b) no.	*'POOR_LIVE'*
Indicator 2 – RA Unemployment rate		
Indicator 3 - Poverty index	Survey item I04 "Thinking about your household's current financial situation, would you say your household is (a) difficult to get by, (b) coping, (c) living comfortably. Survey item I08 "Over the past month, how many times have you or anyone in your household gone to sleep without having had enough food to eat that day? (a) never, (b) sometimes, (c) often, (d) always.	

High Insecurity **Indicator 4 - Perception of security**	Survey item K01 "Do you think that here in RESEARCH AREA it is safe to walk the streets at night?"	*'HIGH_INSECON'*
Indicator 5 - Insecurity and Violence	RAIR Coding scale H. Level of insecurity and violence: Insecurity and violence include crime, terrorism, insurgency, riots, police brutality or other forms of repression or threats that may spur collective fears.	
Indicator 6 - Fear and Experience of Violence or Crimes	Survey item K03 "In the past five years, have you or anyone in your household experienced theft, burglary or robbery?" Survey item K04 "In the past five years, have you or anyone in your household experienced assault or physical violence?" Survey items K05-07 "Please tell me whether, in the past five years, you have ever personally feared any of the following types of violence? K05: Violence at a political rally, public protest, or demonstration, K06: An armed attack by armed forces including non-state groups, K07: Any other types of violence among people in RESEARCH AREA"	

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Weak governance and public services **Indicator 7 - Public services index**	Survey item A31: "Overall, would you say schools in RESEARCH AREA are (a) very bad, b) bad, c) fair, d) good, e) very good)" Survey item D04 "Generally speaking, would you say formal health care in RESEARCH AREA is (a) very bad, b) bad, c) fair, d) good, e) very good)"	*'WEAK_GOVPUBSS'*
Indicator 8 - Governance index	Survey item J08-J10 "How much do you trust the police / courts of law / armed forces? Do you trust them a) completely, b) mostly, c) a little, d) not at all"	
Indicator 9 - Perception of Government	Survey item J13 "In RESEARCH AREA, how much of a problem is corruption nowadays? Is it a) not at all a problem, b) a little problem, c) a serious problem"? Survey item J11 "All things considered, how good a job does the municipality do in running RESEARCH AREA? 1 = terrible job to 10= excellent job?"	
Indicator 10 - Infrastructure improvement	Survey item J12 "Now thinking about the central government, how good a job does it do in running COUNTRY? 1 = terrible job to 10= excellent job?"	
Indicator 11 – Corruption rate	RAIR Coding scale A. This refers to transportation (e.g., roads, airports, ports), utilities (e.g. electricity, water, broadband) and other physical investments that can facilitate economic activity and/or increase standards of living. When it is relevant, also consider the management and operation of the infrastructure – whether it is working as intended. We are interested in the standard of infrastructure and in major changes that may have occurred. 1 = The existence and quality of infrastructure has generally remained unchanged or worsened. 4 = One or more forms of infrastructure has developed in ways that have transformed life in the research area. Survey J14 "In the past year, has anyone in RESEARCH AREA asked you, or expected you, to pay a bribe for his or her services?"	

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	RAIR Coding scale J - Environmental degradation: Environment degradation refers to gradual negative changes to the environment, such as depletion of natural resources, destruction of habitats, and pollution.1 = Environmental degradation is insignificant or has no impact on people's lives and livelihoods. 4 = Severe environmental degradation is a widespread concern and negatively affects lives and livelihoods. RAIR Coding scale K - Environmental degradation: Environment degradation refers to gradual negative changes to the environment, such as depletion of natural resources, destruction of habitats, and pollution. 1 = There have been no natural disasters in recent memory and there is no obvious risk of natural disasters. 4 = Recent experiences and/or obvious risk factors make the area prone to natural disasters, which inhabitants fear. Survey items L01-L04 "I am now going to ask about environmental problems in RESEARCH AREA you may have experienced. In the last five years, has your household been affected by droughts / floods / soil degradation / crop or livestock disease?"	*'HIGH_ENVSTRESS'*
Well-established culture of migration **Indicator 15 – Salience of migration** **Indicator 16 – Attitudes towards migration**	RAIR Coding scale M - Salience of international out-migration. 1 = International out-migration is very rare and not an issue that people think about or relate to. 4 = International out-migration is prominent in people's awareness and daily life. RAIR Coding scale N - Attitudes towards international out-migration. 1 = International migration, migrants and their influence are consistently described in negative terms. 4 = International migration, migrants and their influence are consistently described in positive terms.	*'STRONG_MIGCULT'*

Low presence of policy intervention		
Indicator 17 – Presence of information campaigns	RAIR Coding scale P - Presence of migration information campaigns. 1 = There are no signs of any forms of migration information campaigns and no informants say that they have been exposed to any. 4 = There are (or have recently been) prominent migration information campaigns that a large share of inhabitants are likely to have been exposed to.	
Indicator 18 – Exposure to information campaigns	Survey items G12-G16: "Sometimes there are TV shows, events, or other information about migration – about people moving from one country to another. Over the last year, have you seen or heard of any of the following in RESEARCH AREA? A TV advert or programme / workshop or event / radio programme or advert / social media or website / poster or newspaper advert about migration?"	
Indicator 19 - Prominence of micro-level international aid	RAIR Coding scale D. Prominence of micro-level international aid: `Micro-level' here means international development aid that affects inhabitants in noticeable ways, either at the household level or via community institutions or infrastructure. (This excludes Institutional support to local government, for instance, which inhabitants might be unaware of). 1 = There are no signs of any international development aid directly targeting households and/or community institutions. 4 = International development aid directly targeting households and/or community institutions is prominent in the area and in people's awareness.	*'LOW_POLINT'*
Indicator 20 – Exposure to aid interventions	Survey item B15 "Do you know of any governments or organisations from other countries that work towards improving life in RESEARCH AREA?"	

Migration Feasibility Indicator 21 - Migration Feasibility	RAIR Coding scale 0 - Perceived feasibility of international out-migration. 1 = International migration is generally seen as nearly impossible for those who may want to migrate. 4 = International migration is generally seen as possible to do for whoever wants to migrate.	*'HIGH_MIGFEAS'*
Indicator 22 - Possibility to migrate	Survey item C22 "If someone from RESEARCH AREA wants to go live or work in a richer country, how easy or difficult do you think it would be to actually do it? Would it be a) very easy, b) easy, c) difficult, d) very difficult?	
Indicator 23 - Failed attempts, or knowledge of it	Survey items G06-G10 "Have you or someone you know in the past five years been injured / lost their life / been detained / was stuck / been deported whilst on the way to move to another country?	

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Annex 3: Directional expectations for the intermediate solutions

Directional Expectations for Model MIG1A and MIG1B

Name of Condition	Abbreviated Condition	Directional Expectation
Poor Livelihoods	POOR_LIVE	Contributes to outcome in its presence
High Insecurity and Conflict	HIGH_INSECON	Contributes to outcome in its presence
Weak Governance and Public Services	WEAK_GOVPUBSS	Contributes to outcome in its presence
High Environmental Stress	HIGH_ENVSTRESS	Contributes to outcome in its presence
Strong Migration Culture	STRONG_MIGCULT	Contributes to outcome in its presence
Strong Root Causes	HIGH_RC	Contributes to outcome in its presence
High Policy Interventions	HIGH_POLINT	Contributes to outcome in its presence

Directional Expectations for Model MIG2A and MIG2B

Name of Condition	Abbreviated Condition	Directional Expectation
Poor Livelihoods	POOR_LIVE	Contributes to outcome in its absence

High Insecurity and Conflict	HIGH_INSECON	Contributes to outcome in its presence
Weak Governance and Public Services	WEAK_GOVPUBSS	Contributes to outcome in its presence
High Environmental Stress	HIGH_ENVSTRESS	Contributes to outcome in its presence
Strong Migration Culture	STRONG_MIGCULT	Contributes to outcome in its presence
Policy Interventions	LOW_POLINT	Contributes to outcome in its presence
High Root Causes	HIGH_RC	Contributes to outcome in its presence
High Migration Aspirations	HIGH_INATMIGASP	Contributes to outcome in its presence
High Migration Feasibility	HIGH_MIGFEAS	Contributes to outcome in its presence

Annex 4: Truth tables

Annex 4.1: Truth table for model MIG1A

Truth Table, Model MIG1A (incl. cut = 0.85, n.cut = 1)

	POOR_LIVE	HIGH_INSECON	WEAK_GOVPUBSS	HIGH_ENVSTRESS	STRONG_MIGCULT	OUT	n	incl	PRI	cases
4	0	0	0	1	1	1	1	1	1	TUR1
12	0	1	0	1	1	1	1	0.976	0.755	SOM2
24	1	0	1	1	1	1	1	0.965	0.860	GIN1
21	1	0	1	0	0	1	1	0.943	0.786	GIN2
6	0	0	1	0	1	1	1	0.942	0.824	TUN1
2	0	0	0	0	1	1	2	0.941	0.796	CPV1,CPV2
31	1	1	1	1	0	1	1	0.938	0.761	GHA1
22	1	0	1	0	1	1	1	0.932	0.805	GHA2
29	1	1	1	0	0	1	3	0.919	0.751	NGA1,NGA2,ETH2
32	1	1	1	1	1	1	4	0.914	0.722	ETH3,TUN2,AFG2,AFG3
30	1	1	1	0	1	1	2	0.900	0.737	NGA3,AFG1
19	1	0	0	1	0	0	1	0.865	0.322	PAK3
1	0	0	0	0	0	0	2	0.858	0.440	SOM1,TUR2
18	1	0	0	0	1	0	3	0.846	0.546	GHA3,TUR3,PAK2
26	1	1	0	0	1	0	2	0.838	0.465	ETH1,PAK1
3	0	0	0	1	0	?	0			
5	0	0	1	0	0	?	0			
7	0	0	1	1	0	?	0			
8	0	0	1	1	1	?	0			
9	0	1	0	0	0	?	0			
10	0	1	0	0	1	?	0			
11	0	1	0	1	0	?	0			
13	0	1	1	0	0	?	0			
14	0	1	1	0	1	?	0			
15	0	1	1	1	0	?	0			
16	0	1	1	1	1	?	0			
17	1	0	0	0	0	?	0			
20	1	0	0	1	1	?	0			
23	1	0	1	1	0	?	0			
25	1	1	0	0	0	?	0			
27	1	1	0	1	0	?	0			
28	1	1	0	1	1	?	0			

Annex 4.2: Truth table for model MIG1A (negation)

Truth Table, Model MIG1A (Negation) (incl. cut = 0.85, n.cut = 1)

	POOR_LIVE	HIGH_INSECON	WEAK_GOVPUBSS	HIGH_ENVSTRESS	STRONG_MIGCULT	OUT	n	incl	PRI	cases
19	1	0	0	1	0	1	1	0.936	0.678	PAK3
26	1	1	0	0	1	1	2	0.859	0.535	ETH1,PAK1
12	0	1	0	1	1	0	1	0.925	0.245	SOM2
1	0	0	0	0	0	0	2	0.863	0.456	SOM1,TUR2
4	0	0	0	1	1	0	1	0.856	0	TUR1
18	1	0	0	0	1	0	3	0.815	0.454	GHA3,TUR3,PAK2
31	1	1	1	1	0	0	1	0.801	0.239	GHA1
21	1	0	1	0	0	0	1	0.789	0.214	GIN2
24	1	0	1	1	1	0	1	0.782	0.140	GIN1
32	1	1	1	1	1	0	4	0.778	0.278	ETH3,TUN2,AFG2,AFG3
2	0	0	0	0	1	0	2	0.770	0.204	CPV1,CPV2
29	1	1	1	0	0	0	3	0.751	0.237	NGA1,NGA2,ETH2
6	0	0	1	0	1	0	1	0.730	0.176	TUN1
22	1	0	1	0	1	0	1	0.717	0.195	GHA2
30	1	1	1	0	1	0	2	0.712	0.245	NGA3,AFG1
3	0	0	0	1	0	?	0			
5	0	0	1	0	0	?	0			
7	0	0	1	1	0	?	0			
8	0	0	1	1	1	?	0			
9	0	1	0	0	0	?	0			
10	0	1	0	0	1	?	0			
11	0	1	0	1	0	?	0			
13	0	1	1	0	0	?	0			
14	0	1	1	0	1	?	0			
15	0	1	1	1	0	?	0			
16	0	1	1	1	1	?	0			
17	1	0	0	0	0	?	0			
20	1	0	0	1	1	?	0			
23	1	0	1	1	0	?	0			
25	1	1	0	0	0	?	0			
27	1	1	0	1	0	?	0			
28	1	1	0	1	1	?	0			

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Annex 4.3: Truth table for model MIG1B

```
Truth Table, Model MIG1B (incl. cut = 0.85, n.cut = 1)
=============================================================================================
   STRONG_RC STRONG_MIGCULT LOW_POLINT HIGH_MIGFEAS OUT n incl   PRI           cases
---------------------------------------------------------------------------------------------
7      0           1           1           0        1  1 0.939 0.811           GHA3
15     1           1           1           0        1  2 0.922 0.789        GHA2,AFG1
8      0           1           1           1        1  2 0.907 0.714        TUN1,TUR1
12     1           0           1           1        1  1 0.900 0.681           ETH2
11     1           0           1           0        1  1 0.893 0.703           NGA1
13     1           1           0           0        1  1 0.888 0.580           GIN1
4      0           0           1           1        1  1 0.881 0.539           TUR2
16     1           1           1           1        1  4 0.873 0.680   NGA3,ETH1,ETH3,TUN2
2      0           0           0           1        0  1 0.859 0.448           SOM1
14     1           1           0           1        0  3 0.839 0.491      AFG2,AFG3,PAK1
9      1           0           0           0        0  4 0.815 0.529   GIN2,GHA1,NGA2,PAK3
6      0           1           0           1        0  5 0.811 0.470 CPV1,CPV2,SOM2,TUR3,PAK2
1      0           0           0           0        ?  0
3      0           0           1           0        ?  0
5      0           1           0           0        ?  0
10     1           0           0           1        ?  0
---------------------------------------------------------------------------------------------
```

Annex 4.4: Truth table for model MIG1B (negation)

```
Truth Table, Model MIG1B (Negation) (incl. cut = 0.85, n.cut = 1)
=============================================================================================
   STRONG_RC STRONG_MIGCULT LOW_POLINT HIGH_MIGFEAS OUT n incl   PRI           cases
---------------------------------------------------------------------------------------------
2      0           0           0           1        1  1 0.886 0.552           SOM1
4      0           0           1           1        0  1 0.861 0.461           TUR2
13     1           1           0           0        0  1 0.845 0.420           GIN1
14     1           1           0           1        0  3 0.838 0.487      AFG2,AFG3,PAK1
6      0           1           0           1        0  5 0.833 0.530 CPV1,CPV2,SOM2,TUR3,PAK2
12     1           0           1           1        0  1 0.783 0.305           ETH2
8      0           1           1           1        0  2 0.768 0.286        TUN1,TUR1
9      1           0           0           0        0  4 0.767 0.410   GIN2,GHA1,NGA2,PAK3
11     1           0           1           0        0  1 0.747 0.297           NGA1
7      0           1           1           0        0  1 0.737 0.189           GHA3
16     1           1           1           1        0  4 0.731 0.320   NGA3,ETH1,ETH3,TUN2
15     1           1           1           0        0  2 0.710 0.211        GHA2,AFG1
1      0           0           0           0        ?  0
3      0           0           1           0        ?  0
5      0           1           0           0        ?  0
10     1           0           0           1        ?  0
---------------------------------------------------------------------------------------------
```

Annex 4.5: Truth table for model MIG2A

```
Truth Table, Model MIG2A (incl. cut = 0.85, n.cut = 1)
=============================================================================================
   POOR_LIVE HIGH_INSECON WEAK_GOVPUBSS HIGH_ENVSTRESS STRONG_MIGCULT OUT n incl   PRI          cases
---------------------------------------------------------------------------------------------
12     0          1           0           1                1         1  1 0.965 0.856        SOM2
24     1          0           1           1                1         1  1 0.923 0.794        GIN1
4      0          0           0           1                1         1  1 0.920 0.780        TUR1
6      0          0           1           0                1         1  1 0.888 0.749        TUN1
22     1          0           1           0                1         1  1 0.887 0.741        GHA2
32     1          1           1           1                1         1  4 0.877 0.677 ETH3,TUN2,AFG2,AFG3
2      0          0           0           0                1         1  2 0.874 0.723      CPV1,CPV2
30     1          1           1           0                1         1  2 0.854 0.664      NGA3,AFG1
21     1          0           1           0                0         0  1 0.845 0.551        GIN2
26     1          1           0           0                1         0  2 0.804 0.580      ETH1,PAK1
18     1          0           0           0                1         0  3 0.784 0.574   GHA3,TUR3,PAK2
31     1          1           1           1                0         0  1 0.783 0.424        GHA1
1      0          0           0           0                0         0  2 0.766 0.408      SOM1,TUR2
19     1          0           0           1                0         0  1 0.740 0.349        PAK3
29     1          1           1           0                0         0  3 0.734 0.389   NGA1,NGA2,ETH2
3      0          0           0           1                0         ?  0
5      0          0           1           0                0         ?  0
7      0          0           1           1                0         ?  0
8      0          0           1           1                1         ?  0
9      0          1           0           0                0         ?  0
10     0          1           0           0                1         ?  0
11     0          1           0           1                0         ?  0
13     0          1           1           0                0         ?  0
14     0          1           1           0                1         ?  0
15     0          1           1           1                0         ?  0
16     0          1           1           1                1         ?  0
17     1          0           0           0                0         ?  0
20     1          0           0           1                1         ?  0
23     1          0           1           1                0         ?  0
25     1          1           0           0                0         ?  0
27     1          1           0           1                0         ?  0
28     1          1           0           1                1         ?  0
---------------------------------------------------------------------------------------------
```

Annex 4.6: Truth table for model MIG2A (negation)

```
Truth Table, Model MIG2A (Negation) (incl. cut = 0.85, n.cut = 1)
=============================================================================================
   POOR_LIVE HIGH_INSECON WEAK_GOVPUBSS HIGH_ENVSTRESS STRONG_MIGCULT OUT n incl   PRI         cases
---------------------------------------------------------------------------------------------
19     1          0            0             1              0         1  1 0.861 0.651        PAK3
31     1          1            1             1              0         0  1 0.841 0.576        GHA1
1      0          0            0             0              0         0  2 0.839 0.592      SOM1,TUR2
29     1          1            1             0              0         0  3 0.831 0.611   NGA1,NGA2,ETH2
21     1          0            1             0              0         0  1 0.810 0.449        GIN2
12     0          1            0             1              1         0  1 0.791 0.144        SOM2
26     1          1            0             0              1         0  2 0.729 0.420      ETH1,PAK1
32     1          1            1             1              1         0  4 0.727 0.286 ETH3,TUN2,AFG2,AFG3
4      0          0            0             1              1         0  1 0.715 0.220        TUR1
18     1          0            0             0              1         0  3 0.709 0.426   GHA3,TUR3,PAK2
24     1          0            1             1              1         0  1 0.705 0.206        GIN1
30     1          1            1             0              1         0  2 0.683 0.270      NGA3,AFG1
22     1          0            1             0              1         0  1 0.677 0.259        GHA2
2      0          0            0             0              1         0  2 0.671 0.277      CPV1,CPV2
6      0          0            1             0              1         0  1 0.666 0.251        TUN1
3      0          0            0             1              0         ?  0
5      0          0            1             0              0         ?  0
7      0          0            1             1              0         ?  0
8      0          0            1             1              1         ?  0
9      0          1            0             0              0         ?  0
10     0          1            0             0              1         ?  0
11     0          1            0             1              0         ?  0
13     0          1            1             0              0         ?  0
14     0          1            1             0              1         ?  0
15     0          1            1             1              0         ?  0
16     0          1            1             1              1         ?  0
17     1          0            0             0              0         ?  0
20     1          0            0             1              1         ?  0
23     1          0            1             1              0         ?  0
25     1          1            0             0              0         ?  0
27     1          1            0             1              0         ?  0
28     1          1            0             1              1         ?  0
---------------------------------------------------------------------------------------------
```

Annex 4.7: Truth table for model MIG2B

```
Truth Table, Model MIG2B (incl. cut = 0.85, n.cut = 1)
=============================================================================================
   STRONG_RC STRONG_MIGCULT HIGH_MIGFEAS LOW_POLINT OUT n incl   PRI           cases
---------------------------------------------------------------------------------------------
6      0           1             0           1       1  1 0.905 0.784          GHA3
14     1           1             0           1       1  2 0.882 0.722       GHA2,AFG1
8      0           1             1           1       1  2 0.853 0.677       TUN1,TUR1
16     1           1             1           1       0  4 0.842 0.655  NGA3,ETH1,ETH3,TUN2
13     1           1             0           0       0  1 0.821 0.577          GIN1
4      0           0             1           1       0  1 0.789 0.440          TUR2
15     1           1             1           0       0  3 0.769 0.510     AFG2,AFG3,PAK1
12     1           0             1           1       0  1 0.769 0.407          ETH2
10     1           0             0           1       0  1 0.732 0.354          NGA1
7      0           1             1           0       0  5 0.727 0.462 CPV1,CPV2,SOM2,TUR3,PAK2
3      0           0             1           0       0  1 0.727 0.356          SOM1
9      1           0             0           0       0  4 0.592 0.254  GIN2,GHA1,NGA2,PAK3
1      0           0             0           0       ?  0
2      0           0             0           1       ?  0
5      0           1             0           0       ?  0
11     1           0             1           0       ?  0
---------------------------------------------------------------------------------------------
```

Annex 4.8: Truth table for model MIG2B (negation)

```
Truth Table, Model MIG2B (Negation) (incl. cut = 0.85, n.cut = 1)
=============================================================================================
   STRONG_RC STRONG_MIGCULT HIGH_MIGFEAS LOW_POLINT OUT n incl   PRI           cases
---------------------------------------------------------------------------------------------
9      1           0             0           0       1  4 0.861 0.746  GIN2,GHA1,NGA2,PAK3
10     1           0             0           1       1  1 0.853 0.646          NGA1
3      0           0             1           0       0  1 0.849 0.644          SOM1
12     1           0             1           1       0  1 0.841 0.593          ETH2
4      0           0             1           1       0  1 0.834 0.560          TUR2
7      0           1             1           0       0  5 0.766 0.538 CPV1,CPV2,SOM2,TUR3,PAK2
13     1           1             0           0       0  1 0.756 0.423          GIN1
15     1           1             1           0       0  3 0.751 0.473     AFG2,AFG3,PAK1
14     1           1             0           1       0  2 0.694 0.278       GHA2,AFG1
8      0           1             1           1       0  2 0.692 0.323       TUN1,TUR1
16     1           1             1           1       0  4 0.686 0.313  NGA3,ETH1,ETH3,TUN2
6      0           1             0           1       0  1 0.656 0.216          GHA3
1      0           0             0           0       ?  0
2      0           0             0           1       ?  0
5      0           1             0           0       ?  0
11     1           0             1           0       ?  0
---------------------------------------------------------------------------------------------
```

Annex 4.9: Truth table for model MIG2C

```
Truth Table, Model MIG2C (incl. cut = 0.85, n.cut = 1)
=============================================================================================
   STRONG_RC STRONG_MIGCULT HIGH_INATMIGASP HIGH_MIGFEAS LOW_POLINT OUT n incl   PRI      cases
---------------------------------------------------------------------------------------------
14     0           1              1             0           1       1  1 0.964 0.911      GHA3
30     1           1              1             0           1       1  2 0.957 0.884   GHA2,AFG1
32     1           1              1             1           1       1  2 0.933 0.823   NGA3,TUN2
29     1           1              1             0           0       1  1 0.922 0.779      GIN1
16     0           1              1             1           1       1  2 0.920 0.801   TUN1,TUR1
31     1           1              1             1           0       1  2 0.903 0.741   AFG2,AFG3
15     0           1              1             1           0       1  2 0.891 0.725   CPV1,CPV2
24     1           0              1             1           1       0  1 0.846 0.520      ETH2
22     1           0              1             0           1       0  1 0.820 0.477      NGA1
28     1           1              0             1           1       0  2 0.806 0.552   ETH1,ETH3
4      0           0              0             1           1       0  1 0.757 0.359      TUR2
27     1           1              0             1           0       0  1 0.735 0.423      PAK1
21     1           0              1             0           0       0  1 0.725 0.383      GHA1
3      0           0              0             1           0       0  1 0.693 0.253      SOM1
11     0           1              0             1           0       0  3 0.683 0.309 SOM2,TUR3,PAK2
17     1           0              0             0           0       0  3 0.618 0.238 GIN2,NGA2,PAK3
1      0           0              0             0           0       ?  0
2      0           0              0             0           1       ?  0
5      0           0              1             0           0       ?  0
6      0           0              1             0           1       ?  0
7      0           0              1             1           0       ?  0
8      0           0              1             1           1       ?  0
9      0           1              0             0           0       ?  0
10     0           1              0             0           1       ?  0
12     0           1              0             1           1       ?  0
13     0           1              1             0           0       ?  0
18     1           0              0             0           1       ?  0
19     1           0              0             1           0       ?  0
20     1           0              0             1           1       ?  0
23     1           0              1             1           0       ?  0
25     1           1              0             0           0       ?  0
26     1           1              0             0           1       ?  0
---------------------------------------------------------------------------------------------
```

Annex 4.10: Truth table for model MIG2B (negation)

```
Truth Table, Model MIG2C (Negation) (incl. cut = 0.85, n.cut = 1)
=============================================================================================
   STRONG_RC STRONG_MIGCULT HIGH_INATMIGASP HIGH_MIGFEAS LOW_POLINT OUT n incl   PRI      cases
---------------------------------------------------------------------------------------------
3      0           0              0             1           0       1  1 0.896 0.747      SOM1
17     1           0              0             0           0       1  3 0.881 0.762 GIN2,NGA2,PAK3
4      0           0              0             1           1       1  1 0.864 0.641      TUR2
11     0           1              0             1           0       1  3 0.858 0.691 SOM2,TUR3,PAK2
22     1           0              1             0           1       0  1 0.836 0.523      NGA1
24     1           0              1             1           1       0  1 0.833 0.480      ETH2
21     1           0              1             0           0       0  1 0.829 0.617      GHA1
27     1           1              0             1           0       0  1 0.805 0.577      PAK1
28     1           1              0             1           1       0  2 0.761 0.448   ETH1,ETH3
29     1           1              1             0           0       0  1 0.725 0.221      GIN1
15     0           1              1             1           0       0  2 0.711 0.275   CPV1,CPV2
31     1           1              1             1           0       0  2 0.711 0.233   AFG2,AFG3
16     0           1              1             1           1       0  2 0.680 0.199   TUN1,TUR1
32     1           1              1             1           1       0  2 0.672 0.132   NGA3,TUN2
30     1           1              1             0           1       0  2 0.668 0.116   GHA2,AFG1
14     0           1              1             0           1       0  1 0.634 0.089      GHA3
1      0           0              0             0           0       ?  0
2      0           0              0             0           1       ?  0
5      0           0              1             0           0       ?  0
6      0           0              1             0           1       ?  0
7      0           0              1             1           0       ?  0
8      0           0              1             1           1       ?  0
9      0           1              0             0           0       ?  0
10     0           1              0             0           1       ?  0
12     0           1              0             1           1       ?  0
13     0           1              1             0           0       ?  0
18     1           0              0             0           1       ?  0
19     1           0              0             1           0       ?  0
20     1           0              0             1           1       ?  0
23     1           0              1             1           0       ?  0
25     1           1              0             0           0       ?  0
26     1           1              0             0           1       ?  0
---------------------------------------------------------------------------------------------
```

Annex 5: Test for necessary conditions

Annex 5.1. Test for necessity for the outcome of model MIG1A and MIG1B

		inclN	RoN	covN
1	~HIGH_INATMIGINTENS	0.588	0.662	0.579
2	HIGH_INATMIGINTENS	0.712	0.890	0.850
3	~POOR_LIVE	0.538	0.896	0.797
4	POOR_LIVE	0.773	0.625	0.656
5	~HIGH_INSECON	0.631	0.789	0.710
6	HIGH_INSECON	0.707	0.775	0.733
7	~WEAK_GOVPUBSS	0.634	0.759	0.684
8	WEAK_GOVPUBSS	0.784	0.868	0.847
9	~HIGH_ENVSTRESS	0.813	0.666	0.700
10	HIGH_ENVSTRESS	0.567	0.902	0.819
11	~STRONG_RC	0.577	0.827	0.724
12	STRONG_RC	0.782	0.744	0.740
13	~STRONG_MIGCULT	0.601	0.832	0.741
14	STRONG_MIGCULT	0.776	0.753	0.745
15	~HIGH_MIGFEAS	0.663	0.871	0.812
16	HIGH_MIGFEAS	0.735	0.730	0.709
17	~HIGH_CAMPAIGN	0.674	0.698	0.655
18	HIGH_CAMPAIGN	0.676	0.875	0.821
19	~HIGH_AID	0.861	0.671	0.725
20	HIGH_AID	0.420	0.829	0.631
21	~LOW_POLINT	0.703	0.698	0.669
22	LOW_POLINT	0.677	0.893	0.843

Annex 5.2. Test for necessity for the negated outcome of model MIG1A and MIG1B

		inclN	RoN	covN
1	~HIGH_INATMIGINTENS	0.853	0.744	0.716
2	HIGH_INATMIGINTENS	0.498	0.712	0.508
3	~POOR_LIVE	0.526	0.838	0.664
4	POOR_LIVE	0.839	0.594	0.608
5	~HIGH_INSECON	0.698	0.767	0.670
6	HIGH_INSECON	0.698	0.706	0.617
7	~WEAK_GOVPUBSS	0.834	0.811	0.767
8	WEAK_GOVPUBSS	0.656	0.717	0.605
9	~HIGH_ENVSTRESS	0.853	0.615	0.627
10	HIGH_ENVSTRESS	0.592	0.861	0.729
11	~STRONG_RC	0.678	0.829	0.726
12	STRONG_RC	0.742	0.653	0.599
13	~STRONG_MIGCULT	0.688	0.823	0.724
14	STRONG_MIGCULT	0.754	0.670	0.617
15	~HIGH_MIGFEAS	0.646	0.796	0.675
16	HIGH_MIGFEAS	0.820	0.708	0.675
17	~HIGH_CAMPAIGN	0.827	0.718	0.685
18	HIGH_CAMPAIGN	0.583	0.760	0.604
19	~HIGH_AID	0.713	0.534	0.512
20	HIGH_AID	0.617	0.895	0.791
21	~LOW_POLINT	0.852	0.713	0.692
22	LOW_POLINT	0.593	0.779	0.630

Annex 5.3. Test for necessity for the outcome of Model MIG2A, MIG2B and MIG2C

		inclN	RoN	covN
1	~HIGH_INATMIGASP	0.508	0.700	0.498
2	HIGH_INATMIGASP	0.850	0.747	0.712
3	~POOR_LIVE	0.571	0.856	0.707
4	POOR_LIVE	0.740	0.547	0.526
5	~HIGH_INSECON	0.650	0.737	0.613
6	HIGH_INSECON	0.701	0.701	0.608
7	~WEAK_GOVPUBSS	0.629	0.698	0.567
8	WEAK_GOVPUBSS	0.702	0.733	0.634
9	~HIGH_ENVSTRESS	0.794	0.583	0.573
10	HIGH_ENVSTRESS	0.555	0.836	0.670
11	~STRONG_RC	0.597	0.780	0.627
12	STRONG_RC	0.727	0.640	0.576
13	~STRONG_MIGCULT	0.509	0.730	0.526
14	STRONG_MIGCULT	0.882	0.727	0.708
15	~HIGH_MIGFEAS	0.614	0.774	0.630
16	HIGH_MIGFEAS	0.760	0.671	0.614
17	~HIGH_CAMPAIGN	0.608	0.613	0.494
18	HIGH_CAMPAIGN	0.752	0.841	0.764
19	~HIGH_AID	0.848	0.582	0.597
20	HIGH_AID	0.386	0.776	0.485
21	~LOW_POLINT	0.664	0.619	0.529
22	LOW_POLINT	0.673	0.814	0.701

Annex 5.4. Test for necessity for the negated outcome of Model MIG2A, MIG2B and MIG2C

		inclN	RoN	covN
1	~HIGH_INATMIGASP	0.716	0.889	0.853
2	HIGH_INATMIGASP	0.579	0.674	0.588
3	~POOR_LIVE	0.450	0.844	0.677
4	POOR_LIVE	0.806	0.653	0.695
5	~HIGH_INSECON	0.628	0.794	0.718
6	HIGH_INSECON	0.662	0.752	0.697
7	~WEAK_GOVPUBSS	0.667	0.788	0.731
8	WEAK_GOVPUBSS	0.605	0.749	0.664
9	~HIGH_ENVSTRESS	0.775	0.650	0.679
10	HIGH_ENVSTRESS	0.512	0.871	0.752
11	~STRONG_RC	0.559	0.822	0.713
12	STRONG_RC	0.708	0.703	0.681
13	~STRONG_MIGCULT	0.701	0.913	0.878
14	STRONG_MIGCULT	0.621	0.664	0.606
15	~HIGH_MIGFEAS	0.606	0.838	0.754
16	HIGH_MIGFEAS	0.702	0.717	0.689
17	~HIGH_CAMPAIGN	0.809	0.798	0.798
18	HIGH_CAMPAIGN	0.488	0.759	0.602
19	~HIGH_AID	0.663	0.564	0.567
20	HIGH_AID	0.529	0.903	0.809
21	~LOW_POLINT	0.764	0.746	0.739
22	LOW_POLINT	0.513	0.789	0.650

Annex 6: Solution paths for the negated outcomes

Annex 6.1 Intermediate solution for model MIG1A (negation)

Configurations for HIGH MIGRATION ASPIRATION	Consistency	PRI	Raw coverage	Unique coverage	Cases
MODEL MIG1A (negated)					
HIGH_INSECON **AND** weak_govpubss **AND** high_envstress	0.864	0.517	0.560	0.266	ETH1, PAK 1
OR					
high_insecon **AND** weak_govpubss **AND** HIGH_ENVSTRESS **AND** strong_migcult	0.941	0.678	0.383	0.089	PAK 3
Solution consistency	0.875				
Solution PRI	0.604				
Solution coverage	0.648				

Note: This Model produced 6 different results (C1P1-C1P6). The results with the highest parameters of fit was chosen here.

Examining the absence ('negation') of high migration aspirations uncovers an intricate landscape. While the second pathway aligns neatly with our directional expectations (except for the presence of high environmental stress), the first pathway introduces a nuanced interplay. Here, the presence of high insecurity may, paradoxically, coincide with a 'high' governance quality, resulting in reduced levels of migration aspirations.

Annex 6.2 Intermediate solution for model MIG1B (negation)

Configurations for HIGH MIGRATION ASPIRATION	Consistency	PRI	Raw coverage	Unique coverage	Cases
MODEL MIG1B (negated)					
high_rc **AND** strong_migcult **AND** low_polint	0.889	0.575	0.495	-	SOM1
Solution consistency	0.889				
Solution PRI	0.575				
Solution coverage	0.495				

Examining the negation of high migration aspirations provides a counter solution that deepens our quest for understanding the absence of such aspirations. In this scenario, the absence of elevated aspiration levels is contingent upon the concurrent absence of both (combined) root causes and a firmly established migration culture. Furthermore, it is associated with the lack of low levels of migration-relevant policy interventions. Notably, the PRI is approximately 0.5, signifying a high degree of ambiguity within this pathway.

Annex 6.3 Intermediate solution for model MIG2A (negation)

Configurations for HIGH MIGRATION INTENSITY	Consistency	PRI	Raw coverage	Unique coverage	Cases
MODEL MIG2A (negated)					
POOR_LIVE **AND** high_insecon **AND** weak_govpubss **AND** strong_migcult	0.841	0.651	0.362	-	PAK3
Solution consistency	0.841				
Solution PRI	0.651				
Solution coverage	0.362				

Within the framework of the negated Model MIG2A, where high migration intensity is absent, we observe the absence of fundamental root causes, specifically insecurity and weak governance. Coupled with the presence of poor livelihood conditions and the absence of a strong migration culture, these conditions collectively contribute to the absence of high migration intensity. This observation underscores the central role played by poverty as a constraining factor, impeding the realisation of migration as a viable option.

Annex 6.4 Intermediate solution for model MIG2B (negation)

Configurations for HIGH MIGRATION INTENSITY	**Consistency**	**PRI**	**Raw coverage**	**Unique coverage**	**Cases**
MODEL MIG2B (negated)					
strong_migcult **AND** high_migfeas	0.877	0.773	0.538	-	GIN2, GHA1, NGA2, PAK3; NGA1
Solution consistency	0.877				
Solution PRI	0.773				
Solution coverage	0.538				

Annex 6.5 Intermediate solution for model MIG2C (negation)

MODEL MIG2C (negated)					
Configurations for HIGH MIGRATION INTENSITY	**Consistency**	**PRI**	**Raw coverage**	**Unique coverage**	**Cases**
strong_rc **AND** strong_migcult **AND** high_inatmigasp	0.893	0.752	0.401	0.027	SOM1; TUR2
OR					
strong_rc **AND** high_inatmigasp **AND** low_polint	0.880	0.771	0.463	0.089	SOM1; SOM2, TUR3, PAK2
OR					
strong_migcult **AND** high_inatmigasp **AND** high_migfeas **AND** low_polint	0.889	0.779	0.399	0.099	GIN2, NGA2, PAK3
Solution consistency	0.880				
Solution PRI	0.792				
Solution coverage	0.589				

Annex 7: Robustness checks

MIGNEX Background Paper

Annex 7.1 Model MIG1A

Sensitivity ranges					
			Lower bound	Threshold	Upper bound
Parameters	Raw consistency threshold		0.85	0.85	0.89
	N.cut		1	1	1
Calibration Anchors	POOR_LIVE	Exclusion Crossover Inclusion	- 0.21 0.41 0.51	0 0.5 1	0.22 0.55 1.04
	HIGH_INSECON	Exclusion Crossover Inclusion	NA 0.41 0.94	0 0.5 1	0.49 0.54 1.18
	WEAK_GOVPUBSS	Exclusion Crossover Inclusion	-0.56 0.42 0.95	0 0.5 1	0.06 0.51 1.48
	HIGH_ENVSTRESS	Exclusion Crossover Inclusion	NA 0.2 0.81	0 0.5 1	0.07 0.6 NA
	STRONG_MIGCULTURE	Exclusion Crossover Inclusion	-0.4 0.26 0.79	0 0.5 1	0.34 0.52 1.27

Annex 7.2 Model MIG1B

Sensitivity ranges					
			Lower bound	Threshold	Upper bound
Parameters	Raw consistency threshold		0.82	0.85	0.87
	N.cut		1	1	1
Calibration Anchors	STRONG_RC	Exclusion Crossover Inclusion	NA 0.5 0.99	0 0.5 1	0.08 0.5 1.16
	STRONG_MIGCULTURE	Exclusion Crossover	NA 0.47	0 0.5	0.49 0.52

		Inclusion	0.59	1	1.29
	LOW_POLINT	Exclusion Crossover Inclusion	NA 0.4 0.61	0 0.5 1	0.49 0.55 1.53
	HIGH_MIGFEAS	Exclusion Crossover Inclusion	-0.57 0.41 0.51	0 0.5 1	0.49 0.57 NA

Annex 7.3 Model MIG2A

Sensitivity ranges					
			Lower bound	Threshold	Upper bound
Parameters	Raw consistency threshold		0.85	0.85	0.85
	N.cut		1	1	2
Calibration Anchors	POOR_LIVE	Exclusion Crossover Inclusion	- 0.28 0.34 0.51	0 0.5 1	0.07 0.59 1.44
	HIGH_INSECON	Exclusion Crossover Inclusion	-0.31 0.4 0.72	0 0.5 1	0.49 0.61 1.12
	WEAK_GOVPUBSS	Exclusion Crossover Inclusion	-0.16 0.38 0.63	0 0.5 1	0.23 0.52 NA
	HIGH_ENVSTRESS	Exclusion Crossover Inclusion	-0.21 0.38 0.96	0 0.5 1	0.03 0.57 1.11
	STRONG_MIGCULTURE	Exclusion Crossover Inclusion	-0.09 0.48 0.71	0 0.5 1	0.49 0.52 1.11

Annex 7.4 Model MIG2B

Sensitivity ranges					
			Lower bound	Threshold	Upper bound
Parameters	Raw consistency threshold		0.85	0.85	0.85
	N.cut		1	1	1
Calibration Anchors	STRONG_RC	Exclusion Crossover Inclusion	NA 0.009 NA	0 0.5 1	0.09 0.5 1.01
	STRONG_MIGCULTURE	Exclusion Crossover Inclusion	-0.08 0.37 0.51	0 0.5 1	0.04 0.52 NA
	LOW_POLINT	Exclusion Crossover Inclusion	-0.02 0.5 0.78	0 0.5 1	0.3 0.55 NA
	HIGH_MIGFEAS	Exclusion Crossover Inclusion	NA 0.46 0.59	0 0.5 1	0.27 0.6 NA

Annex 7.5 Model MIG2C

Sensitivity ranges					
			Lower bound	Thres hold	Upper bound
Parameters	Raw consistency threshold		0.85	0.85	0.89
	N.cut		1	1	1
Calibration Anchors	STRONG_RC	Exclusion Crossover Inclusion	-0.14 0.16 NA	0 0.5 1	NA 0.61 NA
	STRONG_MIGCULTURE	Exclusion Crossover Inclusion	-0.49 0.21 0.51	0 0.5 1	0.49 0.61 1.13
	HIGH_INATMIGASP	Exclusion Crossover Inclusion	-0.25 0.33 0.51	0 0.5 1	0.1 0.56 NA
	HIGH_MIGFEAS	Exclusion Crossover Inclusion	-0.18 0.49 0.51	0 0.5 1	0.49 0.7 NA
	LOW_POLINT	Exclusion Crossover Inclusion	-0.29 0.47 0.51	0 0.5 1	0.27 0.55 NA

Annex 8: Calibration Diagnostics

MIGNEX Background Paper

Annex 8.1 Skewness check

[1] Set HIGH_INATMIGASP - Cases > 0.5 / Total number of cases: 15 / 26 = 57.69 %
[2] Set HIGH_INATMIGINTENS - Cases > 0.5 / Total number of cases: 11 / 26 = 42.31 %
[3] Set POOR_LIVE - Cases > 0.5 / Total number of cases: 19 / 26 = 73.08 %
[4] Set HIGH_INSECON - Cases > 0.5 / Total number of cases: 13 / 26 = 50 %
[5] Set WEAK_GOVPUBSS - Cases > 0.5 / Total number of cases: 14 / 26 = 53.85 %
[6] Set HIGH_ENVSTRESS - Cases > 0.5 / Total number of cases: 9 / 26 = 34.62 %
[7] Set HIGH_RC - Cases > 0.5 / Total number of cases: 16 / 26 = 61.54 %
[8] Set STRONG_MIGCULT - Cases > 0.5 / Total number of cases: 18 / 26 = 69.23 %
[9] Set HIGH_MIGFEAS - Cases > 0.5 / Total number of cases: 17 / 26 = 65.38 %
[10] Set HIGH_CAMPAIGN - Cases > 0.5 / Total number of cases: 12 / 26 = 46.15 %
[11] Set HIGH_AID - Cases > 0.5 / Total number of cases: 8 / 26 = 30.77 %
[12] Set LOW_POLINT - Cases > 0.5 / Total number of cases: 12 / 26 = 46.15 %

Annex 9: Conservative and parsimonious solutions for all models

Annex 9.1 Model MIG1A

Conservative Solution, Model MIG1A

	inclS	PRI	covS	covU	cases
POOR_LIVE* HIGH_INSECON* WEAK_GOVPUBSS	0.851	0.695	0.648	0.033	NGA1,NGA2,ETH2; NGA3,AFG1; GHA1; ETH3,TUN2,AFG2,AFG3
POOR_LIVE* WEAK_GOVPUBSS* ~ HIGH_ENVSTRESS	0.886	0.730	0.615	0.007	GIN2; GHA2; NGA1,NGA2,ETH2; NGA3,AFG1
POOR_LIVE* WEAK_GOVPUBSS* STRONG_MIGCULT	0.858	0.684	0.583	0.003	GHA2; GIN1; NGA3,AFG1; ETH3,TUN2,AFG2,AFG3
~ POOR_LIVE* ~ HIGH_INSECON* ~ HIGH_ENVSTRESS* STRONG_MIGCULT	0.945	0.839	0.453	0.057	CPV1,CPV2; TUN1
~ POOR_LIVE* ~ WEAK_GOVPUBSS* HIGH_ENVSTRESS* STRONG_MIGCULT	0.980	0.867	0.335	0.010	TUR1; SOM2
Solution	0.860	0.710	0.817		

Parsimonious Solution, Model MIG1A

	inclS	PRI	covS	covU	cases
WEAK_GOVPUBSS	0.847	0.708	0.784	0.362	TUN1; GIN2; GHA2; GIN1; NGA1,NGA2,ETH2; NGA3,AFG1; GHA1; ETH3,TUN2,AFG2,AFG3
~ POOR_LIVE* STRONG_MIGCULT	0.913	0.769	0.516	0.094	CPV1,CPV2; TUR1; TUN1; SOM2
Solution	0.845	0.707	0.878		

Annex 9.2 Model MIG1B

Conservative Solution, Model MIG1B

	inclS	PRI	covS	covU	cases
STRONG_RC* LOW_POLINT	0.872	0.716	0.563	0.017	NGA1; ETH2; GHA2,AFG1; NGA3,ETH1,ETH3,TUN2
STRONG_MIGCULT* LOW_POLINT	0.886	0.748	0.596	0.036	GHA3; TUN1,TUR1; GHA2,AFG1; NGA3,ETH1,ETH3,TUN2
LOW_POLINT* HIGH_MIGFEAS	0.841	0.623	0.570	0.010	TUR2; TUN1,TUR1; ETH2; NGA3,ETH1,ETH3,TUN2
STRONG_RC* STRONG_MIGCULT* ~ HIGH_MIGFEAS	0.904	0.732	0.503	0.096	GIN1; GHA2,AFG1
Solution	0.845	0.667	0.763		

Parsimonious Solution, Model MIG1B

	inclS	PRI	covS	covU	cases
LOW_POLINT	0.843	0.685	0.677	0.234	TUR2; GHA3; TUN1,TUR1; NGA1; ETH2; GHA2,AFG1; NGA3,ETH1,ETH3,TUN2
STRONG_MIGCULT* ~ HIGH_MIGFEAS	0.893	0.717	0.542	0.099	GHA3; GIN1; GHA2,AFG1
Solution	0.832	0.653	0.776		

Annex 9.3 Model MIG2A

Conservative Solution, Model MIG2A

	inclS	PRI	covS	covU	cases
POOR_LIVE* WEAK_GOVPUBSS* STRONG_MIGCULT	0.795	0.605	0.645	0.212	GHA2; GIN1; NGA3,AFG1; ETH3,TUN2,AFG2,AFG3
~ POOR_LIVE* ~ HIGH_INSECON* ~ HIGH_ENVSTRESS* STRONG_MIGCULT	0.880	0.738	0.504	0.057	CPV1,CPV2; TUN1
~ POOR_LIVE* ~ WEAK_GOVPUBSS* HIGH_ENVSTRESS* STRONG_MIGCULT	0.913	0.751	0.373	0.004	TUR1; SOM2
Solution	0.782	0.588	0.755		

Parsimonious Solution, Model MIG2A

	inclS	PRI	covS	covU	cases
~ POOR_LIVE* STRONG_MIGCULT	0.835	0.654	0.564	0.091	CPV1,CPV2; TUR1; TUN1; SOM2
WEAK_GOVPUBSS* STRONG_MIGCULT	0.786	0.599	0.684	0.211	TUN1; GHA2; GIN1; NGA3,AFG1; ETH3,TUN2,AFG2,AFG3
Solution	0.771	0.581	0.775		

Annex 9.4 Model MIG2B

Conservative Solution, Model MIG2B

	inclS	PRI	covS	covU	cases
~ STRONG_RC* STRONG_MIGCULT* LOW_POLINT	0.856	0.687	0.477	0.080	GHA3; TUN1,TUR1
STRONG_MIGCULT* ~ HIGH_MIGFEAS* LOW_POLINT	0.882	0.729	0.504	0.106	GHA3; GHA2,AFG1
Solution	0.846	0.660	0.583		

```
Parsimonious Solution, Model MIG2B
==================================================================================
                                           inclS  PRI  covS  covU       cases
----------------------------------------------------------------------------------
~ STRONG_RC* STRONG_MIGCULT* LOW_POLINT    0.856 0.687 0.477 0.080 GHA3; TUN1,TUR1
STRONG_MIGCULT* ~ HIGH_MIGFEAS* LOW_POLINT 0.882 0.729 0.504 0.106 GHA3; GHA2,AFG1
Solution                                   0.846 0.660 0.583
----------------------------------------------------------------------------------
```

Annex 9.5 Model MIG2C

```
Conservative Solution, Model MIG2C
==============================================================================================================
                                          inclS  PRI  covS  covU                       cases
--------------------------------------------------------------------------------------------------------------
STRONG_RC* STRONG_MIGCULT* HIGH_INATMIGASP    0.874 0.719 0.659 0.016   GIN1; GHA2,AFG1; AFG2,AFG3; NGA3,TUN2
STRONG_MIGCULT* HIGH_INATMIGASP* HIGH_MIGFEAS 0.882 0.740 0.703 0.041 CPV1,CPV2; TUN1,TUR1; AFG2,AFG3; NGA3,TUN2
STRONG_MIGCULT* HIGH_INATMIGASP* LOW_POLINT   0.884 0.747 0.630 0.043   GHA3; TUN1,TUR1; GHA2,AFG1; NGA3,TUN2
Solution                                      0.865 0.733 0.790
--------------------------------------------------------------------------------------------------------------
```

```
Parsimonious Solution, Model MIG2C
==============================================================================================================
                            inclS  PRI  covS  covU                              cases
--------------------------------------------------------------------------------------------------------------
STRONG_MIGCULT* HIGH_INATMIGASP 0.867 0.741 0.804      GHA3; CPV1,CPV2; TUN1,TUR1; GIN1; GHA2,AFG1; AFG2,AFG3; NGA3,TUN2
Solution                        0.867 0.741 0.804
--------------------------------------------------------------------------------------------------------------
```