

Drivers and Patterns of Rural Out-Migration from Tigray, Ethiopia

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Abstract: Migration is a multifaceted global phenomenon driven by economic, social, and political factors. This study explores the drivers, characteristics, and patterns of out-migrants from Rural Tigray, Ethiopia, using mixed cross-sectional data from 521 households across three districts (Weredas): Tahtai-Maichew, Kola-Tembien, and Kilte-Awlaelo. A mixed-methods approach combines quantitative surveys with qualitative data from focus group discussions, key informant interviews, and in-depth interviews. Findings show that temporary migration is predominant (71.5%), with more females (58.1%) than males (41.9%) migrating, aligning with the New Economics of Labor Migration (NELM) theory, which frames migration as a household strategy to diversify income and reduce economic risks. 50.0% of the temporary migrants have completed primary education (50.0%), indicating limited rural opportunities for lower-skilled individuals. Social networks are critical, with 64.4% of temporary migrants relying on irregular channels facilitated by informal networks. Internal migration (54.5%) exceeds international migration (45.5%), and single migrants (77.1% of temporary migrants) are more likely to migrate due to fewer familial obligations. Key informants highlight that migrants are typically young, from poor households, and often depend on brokers and traffickers, especially for irregular migration to Europe. Key drivers include the search for better jobs and wages (64.8%), lack of land (40.6%), and limited access to credit services (34.2%). Hence, policy recommendations include addressing land scarcity, improving credit access, creating local jobs, strengthening legal migration channels, and combating illegal brokers and human-trafficking. Targeted interventions can reduce rural out-migration pressures and can enhance livelihoods in Tigray.

Keywords: Irregular Migration, New Economics of Labor Migration (NELM), Push-Pull Factors, Rural Households, Rural Out-Migration.



1. Introduction

Migration is shaped by a complex constellation of economic, social, political, and environmental forces that distinguishes human societies. Rural out-migration, or the process of individuals moving from rural to urban areas, has increased markedly over recent decades, particularly in developing countries. According to the World Migration Report [1], in 2020 there were well over 281 million international migrants, many of them due to the emigration from rural areas of low-income countries. Rural out-migration in Ethiopia, particularly in the Tigray region has been aggravated mainly by the shortage of land, unemployment, political instability, and environmental degradation.

Due to economic distress, violence, and desires for better opportunities, massive population movements have been witnessed in the northern Ethiopian state of Tigray. The rural population in Tigray is declining as per the urbanization rate with people moving to the cities or abroad, reports the Central Statistics Agency of Ethiopia [2]. This has been succeeded by the devastating two-year war (2020-2022) in Tigray, which dislocated many families and made them poor, forcing people to migrate elsewhere in search of a chance.

Important information regarding rural out-migration determinants can be obtained from theoretical approaches like the Push-Pull theory, Network theory, and NELM theory. While the network theory addresses the manner in which social networks help with migration by lowering costs and granting aid, NELM concentrates on migration as a family approach to income diversification and risk management. The Push-Pull Theory emphasizes the two forces that draw people to migrate to urban or overseas locations (pull factors) and force them to depart from rural places of origin (push factors). The two theories combined present a macro perspective that deals with migration on the basis of individual, household, and community-level determinants.

Empirical studies on out-migration from rural Ethiopian regions have identified key determinants as land deficiency, unemployment, and political instability. As an illustration, Seid [3] and Kelemework et al. [4] have written about unemployment and limited access to financial resources as the primary migrating pressures for Tigray's youth. Moreover, the participation of social networks and illicit intermediaries is an important push factor, especially for people seeking better opportunities elsewhere. As indicated by the International Organization for Migration [5], most Ethiopian migrants particularly women migrate to the Middle East for housemaid jobs, often employing informal networks and brokers. While more studies are being conducted, there is still need for region-specific studies which take into consideration the impact of the socio-economic and political context of each region, such a Tigray.

Therefore, in its overarching ambition, the present study is an examination of the characteristics, motivations, and behaviors of out-migrants from rural Tigray, Ethiopia, focusing particularly on socio-demographic factors and on "push-pull" factors. By implementing mixed methods, the research seeks to achieve a comprehensive understanding of migration behaviors by gathering both quantitative and qualitative data to generate in-depth observations.

If the results of this study come to fruition, then the consequences could extend to policy-makers, particularly with regard to a land reform process, creating jobs or regulating migration pathways. To reduce the pressures that lead to migration and improve the living standards of rural people in Tigray, the project could touch on not only the drivers of out-migration such as unemployment and land scarcity, but it could also emphasize improving social networks and making official migratory pathways more accessible. While Tigray continues to navigate current problems and ramifications of conflict and political disruption, targeted interventions on specific needs will ultimately be essential to realizing sustained development as well as minimizing dependence on migration as a survivalist response.

Ultimately, out-migration from rural Tigray can be produced by multifaceted political, social and economic conditions. Policymakers can formulate more effective strategies for better migration management to face the challenges of migration and foster rural resiliency with the help of knowledge about the underlying factors and theories. By showing a thorough examination of determinants of rural out-migration in Tigray, this study adds to the general discussion on migration and offers useful insights for cases like those of Ethiopia and other places.

2. Literature review

2.1. Concept of Migration

Migration refers to relocate people from places of dwelling to another, both within the nation (internal migration) and outside the nation (international migration). The World Migration Report [6] defines migration as rural to urban, within provinces or regions within a country, or between countries. Similarly, migration is defined by the IOM [7] as the movement of people or groups inside a nation or

across borders. Most academics concur that migration entails spatial mobility, which is defined as a shift of residency from one place of origin to another.

One of the main topics of this study is out-migration from rural areas, which is the movement of individuals from rural to urban areas, either domestically or internationally [8]. However, regardless of the final location, a migration is considered a rural out-migration if it always departs from rural area [8]. Thus, out-migration from rural can have either to other rural or to urban as a place of destination.

2.2. Theoretical Literature Review on Drivers of Migration

Despite extensive literature on migration from various perspectives, no single theory is universally accepted to explain its emergence and persistence [9]. However, several dominant theories exist, including Neo-Classical migration theory (encompassing the Push-Pull theory), the NELM theory, and the Network theory.

One of the classical theories evolved into the Push-Pull framework, refined by Everett S. Lee [10] [11] identified four key factors influencing migration decisions: (a) origin-area factors, (b) destination-area factors, (c) intervening obstacles, and (d) personal factors. Furthermore, Lee categorized the push-pull factors into "pluses" (pull factors), "minuses" (push factors), and "zeroes" (neutral factors). The zero factors balance, the push factors deter them, and the pull factors draw them. Additionally, Lee noted that the source and destination regions both possess positive, negative, and zero factors [11].

The NELM theory dissolves the rigid individualism of the neo-classical models, offering a more dynamic explanation of migration and development phenomena. Stark and Bloom [12] demonstrated that the dual impact of migrants and their families in migration decisions, viewing migration as a household income maximization strategy for security, risk reduction, and access to remittances [13] [14] further added that NELM takes into consideration numerous determinants of migration decisions and their influence on origin and host economies. That illustrated that remittances are integral to an implicit bargain between migrants and their families because households send people abroad for higher earnings as well as to stabilize income amid economic uncertainty [15].

The importance of interpersonal relationships in influencing migration patterns is highlighted by migration Network theory. Through kinship, friendship, and common community beginnings, these networks link migrants, former migrants, and non-migrants [9]. Although accused of ignoring economic determinants, the theory evidently explains how migration is caused by and how migrants are helped in destinations by social networks [15]. Networks are a form of social capital that provide information, reduce costs, and make settlement easier for migrating migrants. Friends and family members in destinations decrease migration's psychic costs and also give practical help, such as housing. Community-level networks are also extremely significant, particularly in cross-border or risky migration, where access to information and aid is a steep necessity [16] [9].

In conclusion, theories of migration come from a variety of fields and provide different justifications for human migration. Since decisions are impacted by a wide range of elements, such as individual, household, and network dynamics, no single theory can adequately explain the complexity of migration. The Push-Pull, NELM, and Network theories are especially pertinent to this study since they all discuss how social, household, and individual factors interact to influence rural out-migration decisions.

2.3. Empirical Literature Review on Out-Migration

Demographic variables like age, gender, education, marital status, employment, and family structure are frequently examined in studies on rural out-migration [17]. Consistent with human capital theory, education generally increases migration likelihood, while age tends to have a negative effect. Migration is more common among men and single people than among women [18] [19]. However, findings on age and marital status are mixed [20] [21] [22]. Gender effects are robust, though internal migration studies sometimes show higher female migration rates [22]. Education's impact is mostly positive, though some studies report insignificant or negative effects [23] [24].

Young migrants dominate rural out-migration. Tegegne, & Penker [25] found that 82% of migrants were young (mean age ~20 years), with women often moving for work or better opportunities [26]. Younger individuals are better equipped to handle migration challenges and often migrate as part of household risk-diversification strategies.

Gender dynamics vary. While some studies show women migrate more due to limited access to resources and vulnerability to shocks [27] [28], others highlight men's higher migration rates, especially internationally [25] [29]. While men are more impacted by employment prospects and greater earnings, women migrate more frequently in search of family reunification, to avoid gender-based abuse, or to

escape economic pressures [30].

Migration is greatly influenced by education. Because they have greater access to knowledge, networks, and urban employment prospects, educated people are more inclined to migrate [25]. According to studies, rural migrants frequently possess greater levels of education than non-migrants. However, the relationship varies by context; in some countries, lower-skilled individuals dominate migration due to reduced costs and condensed networks [31].

Marriage can impose economic and cultural constraints, though patterns vary across societies [32] since, some women migrate to escape early or arranged marriages, while others join spouses in urban areas.

Rural out-migration drives structural transformation, with urban areas specializing in non-agricultural activities and attracting skilled workers [33]. Socio-economic factors like rural population growth, resource pressure, and urban wage differentials influence migration patterns [34] [35]. Migration networks, both at household and community levels, significantly impact internal and international migration [18] [19].

In Ethiopia, internal migration exceeds international flows [10]. Land inheritance expectations reduce long-distance migration likelihood [36], highlighting the role of economic and policy dynamics in shaping migration patterns. According to the IOM (2021) [5] the largest number of international migrants, in Ethiopia are temporary labor migrants, and these are women in domestic positions in the Middle East. It is estimated that 70-80% are temporary international migrants and around 20-30% seek permanent settlement, normally through family reunification or asylum.

Rural out-migration is defined by push forces, e.g., unemployment, poverty, low agricultural productivity, and land fragmentation [37]. Enhanced urban employment prospects, better pay, and better services are some of the pull forces [37] [38] [39]. Wage disparities impact migration decisions significantly [40]. In Ethiopia, population growth, food insecurity, land scarcity, and policy pressure drive migration [41] [42]. Drought and environmental degradation exacerbate rural poverty driving migration [43]. Poor governance and political instability also result in [44] [45] the push factors of out-migration from rural areas.

In Tigray, unemployment, lack of credit, and land shortages are key drivers [3] [35]. Remittances further incentivize migration [46] [47]. Rural parents often prioritize education for their children, viewing farming as unsustainable [48].

To sum-up, the literature highlights diverse demographic, economic, and social factors influencing rural out-migration. However, inconsistencies remain, particularly regarding gender, education, and marital status. Many studies rely on quantitative data, lacking qualitative insights. To provide a thorough grasp of migratory patterns, future study should use a comprehensive approach and combine the two types of data.

3. Methodology

3.1. Description of the Study Area

Tigray is the northernmost region in Ethiopia, located between 12° - 15°N and 36° 30' - 40° 30'E. The National Statistics Report by Central Statistics Agency (CSA) (2018) stated that the land area of Tigray is 50,079 km² and the capital city of the region is Mekelle.

The projected population of Tigray was estimated to be 5,838,000 for the year 2023 (CSA, 2022). According to CSA (2022) [49], Tigray's population living in rural areas is estimated to be 3,963,008 (67.8%) of the people, which is down from 80.5% in the 2007 census; which shows the rapid urbanization of the region. Tigray is one of the regions in Ethiopia highly affected by population movements. In addition, the Tigray Bureau of Labor and Social Affairs [50] noted that Tigrians have traditionally migrated for work and as response to landlessness, food insecurity, and/or unemployment, within the region rural to urban, or to other regions and neighboring countries such as Sudan, Arab Emirates, Kuwait, Saudi Arabia, and other Middle East Asian countries. However, the most preferred destination for educated young people is the Western developed world (TBoLSA, 2017). Besides, according to the report of the Tigray Bureau of Youth Affairs [51] Tigray was in a doom time for two years of a destructive war and siege November 2020 to November 2022. Thus, this situation is suspected of aggravating the attitude and tendency of migration among Tigrayan youngsters.

3.2. Sampling Procedures and Data Collection Methods

Rural households serve as the study's unit of analysis. Thus, all rural households living in rural Tigray make up the study's general population. According to CSA [52], population projections indicate that

the total household population in Tigray could be 943,573 in the year 2023.

Tigray Regional State have 60 rural Woredas. These Woredas were stratified into three groups based on their agricultural potential and trends in rural out-migration. One Woreda was selected from each stratum randomly. A total of three Woredas Kilte-Awlaelo, Kola-Tembien, and Tahtay-Maichew were selected as primary sampling units.

Two Tabiyas were chosen at random from each selected Woreda in the second step using the same method, making a total of six sample Tabiyas. The study included all Kushets in the Tabiyas as Enumeration Areas (EAs).

The researcher utilized the [53] formula to calculate the necessary sample size, which came out to be 521 households. This sample size was classified into two groups: the migrant-sending (treatment) group, comprising 242 households (46%), and the non-migrant-sending (control) group, comprising 279 households (54%). The sample was distributed across each Woreda and Tabiya proportionally, based on the household population of both groups.

Finally, sample units (respondents) were selected using secondary data, with fresh household lists obtained from Tabiya Administration Offices serving as the sampling frame. First, the household lists were sorted and arranged by Kushet (EAs). Then, using a stratified sampling technique, households within each EAs were grouped into two categories: those that had participated in rural out-migration and those that had not. Finally, using a systematic random sampling procedure based on the predefined proportion, sample units (respondents) were chosen from both groups.

In terms of data collection methods, the main instrument utilized was a questionnaire. To learn more about the factors influencing rural out-migration, five Focus Group Discussions (FGDs), thirteen in-depth interviews, and six key informant interviews were also carried out.

3.3. Study Design and Approach

The study used mixed research methods because the researcher acknowledges that there are numerous ways to understand the world and conduct research, that no one point of view can ever provide the whole picture, and that there may be various realities. To decide your research design and approach, the triggering point you must start on are the questions and objectives of the study, you are going to accomplish. The quantitative data offers accurate summaries and comparisons, whereas the qualitative data offers broad elaborations, explanations, meanings, and relatively novel concepts. Using a combined method of research, this study has tended to describe and evaluate the traits of migrants as well as the trends and causes of rural out-migration. Because it primarily explains the link between the dependent and independent variables, this study was explanatory.

This study used a survey as its main type of research design, more precisely a cross-sectional survey design in the time dimension. Thus, the survey has been conducted in the three selected sample Woredas; Kilte-Awlaelo, Kola-Tembien, and Tahtay-Maichew. The survey has been accomplished within one month (March 2024).

In-depth interviews with returning migrants and migrant sending households with varying histories, key informant interviews with individuals with extensive subject-matter expertise, and Focus Group Discussions (FGD) with chosen community members who possess superior information and understanding of rural out-migration migration and remittance have also been carried out.

3.4. Data Type and Sources

The mixed methods approach served as the basis for this investigation. Both qualitative and quantitative data have been gathered as a result. The mixed approach is favored since it may allow us to employ several techniques for gathering and analyzing data in order to handle the issue successfully. Additionally, both primary and secondary data sources were used in the study's execution.

Structured questionnaires were used to gather primary data from the sample respondents, which included both non-sending and migrant sending homes. The data that has been collected using a scheduled questionnaire was structured into various sections, which contained the socio-demographic characteristics of the respondents, migrant member(s) of the household, the motives and expectations of migration. Here, questions such as the reasons for migration, that will be based on push and pull factors have been interrogated.

The second source and type of data was the Interview with Key Informants that enables the researcher to collect other additional primary qualitative data. The key informant interview has been used by the researcher to generate rich and comprehensive information about a specific topic. It has provided a framework within which respondents can express their understandings. The purpose of the

interview is to gather information on the factors that key informants believe contribute to rural out-migration and its effects. Its objective was to gather data from a broad spectrum of leaders and experts with in-depth expertise of the topic.

The third type and source of qualitative data was the in-depth interview that has been taken place with sending households as well as returnees these can express their full history of migration; regarding what happened while the migrant was on the way and reached at destination, about remittance and its usage, and changes has been happened on their livelihood, specifically on their farm income. It has also included consequences of migration on families those faced shocks to their migrant members.

Qualitative data gathered by FGD was the fourth category of data sources. The purpose of the focus group discussions (FGDs) was to gather additional data on rural out-migration and remittances, with an emphasis on the economic impacts and determinants that could be examined in greater detail, on the experiences of rural households. This was done in order to get more information on topics that might come up in individual interviews. The purpose was to confirm the preliminary findings with a group of community members. Thus, five FGDs in five of the selected Tabiyas have been employed. The participants for the FGDs have been selected from different sets of informants, including migrant sending and non-migrant sending households, Tabiya leaders, and influential people living in the Tabiyas.

In addition to the questionnaires, five FGDs, in five of the selected Tabiyas, have been held. The FGD participants were chosen from a variety of informant groups, such as migrant sending and non-migrant sending households, who can depict the circumstances in the community, which includes young and old people of both sexes, as well as others who are anticipated to have accumulated knowledge regarding the economic impacts and determinant causes of rural out-migration and remittances in the study area. Each group had about seven to nine persons; hence total number of the participants of FGDs was thirty nine (39).

In the FGDs, checklists have been prepared as guidance, to provoke participants to express their opinions or views on the topic. Each participant was allowed to express his or her opinion as the person deems fit. To ensure even participation, participants were not allowed to “attack” the opinions of other participants. A moderator, also known as a group facilitator, has led the talks by introducing discussion themes and assisting the group in engaging in a dynamic and organic exchange of ideas.

In all forms of primary data gathering, respondents who are deemed rich and informed enough to offer explanations on the subject have had their notes sufficiently and carefully captured. The collection of all primary data took place between March 1st, 2024, and March 31st, 2024.

Apart from the previously mentioned main data, secondary data were also a significant and essential source of information for the research. Numerous books and research articles have been produced about remittances and rural out-migration. It has been crucial to read these in order to fully comprehend the subject. As secondary data, recent household surveys carried out by TSA, the Ethiopian CSA, and other national and regional governmental organizations and academics were also helpful.

3.5. Data Processing

The data collected using software has been processed through the following procedures. First, the quality of data was checked in time during the surveying period. The Statistical Package for Social Sciences (SPSS) was then used to review, revise, organize, and summarize the data. Thus, the data analyses that have been undergone after processing was also analyzed mechanically, using the SPSS software.

3.6. Data Analysis

To achieve the particular goals, the study used descriptive statistical analysis. Thus, a simple descriptive statistical method, such as percentage, mean, standard deviation, chi-square, and t-test have been used to describe the characteristics of rural out-migrants, their migration pattern and drivers of rural out-migration in Tigray. Secondly, to balance the descriptive statistics and test the impacts of demographic and socio-economic on the probability of being a rural out-migrant, narratives qualitative data have been employed.

4. Finding and discussion

The survey's findings offer a thorough analysis of the socio-demographic traits, driving forces, and patterns of rural out-migration. Below is an analysis of the findings, contextualized within broader theoretical and analytical debates in migration studies.

4.1. Socio-Demographic Characteristics of The Rural Out-Migrants

Table 1 shows that migration patterns and destinations vary significantly based on gender, marital status, education, and the manner of migration. A thorough summary of the traits, trends, and final destinations of rural out migrants (n=330) is given by the data in the table, which also offers important insights into the dynamics of migration from rural areas.

Table 1. Characteristics, Patterns and Destinations of Rural-Out Migrants (n= 330)

		Migration Pattern				Destination			
		Permanent		Temporary		Out of the Country (International)		Within the country (Internal)	
		Count	%	Count	%	Count	%	Count	%
Sex of the Migrant	Female	48	51.1	137	58.1	93	62.0	92	51.1
	Male	46	48.9	99	41.9	57	38.0	88	48.9
	Total	94		236		150		180	
Marital Status of the Migrant	Co-habited	9	9.6	10	4.2	1	0.7	18	10.0
	Currently Married	73	77.7	2	0.8	20	13.3	55	30.6
	Divorced	2	2.1	17	7.2	11	7.3	8	4.4
	Never Married	0	0.0	7	3.0	3	2.0	4	2.2
	Separated	0	0.0	17	7.2	10	6.7	7	3.9
	Single	10	10.6	182	77.1	105	70.0	87	48.3
	Widowed	0	0.0	1	0.4	0	0.0	1	0.6
	Total	94		236		150		180	
Education status of the Migrant	Degree & above	25	26.6	7	3.0	7	4.7	25	13.9
	Diploma or 10+	29	30.9	25	10.6	12	8.0	42	23.3
	Illiterate	3	3.2	6	2.5	3	2.0	6	3.3
	Primary 1-8	12	12.8	118	50.0	74	49.3	56	31.1
	Secondary 9-12	25	26.6	80	33.9	54	36.0	51	28.3
	Total	94		236		150		180	
In what manner did your HH member migrate?	Irregular	4	4.3	152	64.4	116	77.3	40	22.2
	Regular	90	95.7	84	35.6	34	22.7	140	77.8
	Total	94		236		150		180	

Source: Own Survey March 2024

Migration is frequently seen from the standpoint of the NELM theory as a household strategy to diversify sources of income and reduce risks related to economic uncertainties in rural areas. According to the information in Table 1, a sizable fraction of migrants 71.5% are temporary migrants, with 58.1% of women and 41.9% of men choose this pattern. This aligns with NELM's emphasis on migration as a risk-spreading mechanism, where households send members to urban or international destinations to secure remittances and reduce vulnerability to local economic shocks. According to data released by the IOM [5], the majority of Ethiopian international migrants are temporary labor migrants, especially women employed in domestic tasks in the Middle East. Rural women were also 6.4 percent more likely than men to leave rural areas, according to Herrera and Sahn [27]. This is most likely due to women's restricted access to productive resources and increased susceptibility to various shocks.

Although women are likely to be driven out of rural areas, Fassil and Mohammed [54] pointed out that this could be because of factors including family size, lack of employment opportunities, or inadequate income. Prior research, however, has also produced contradictory findings, suggesting that women are less likely than men to migrate across national borders and appear to be more sensitive to the consequences of doing so [55]. Women are also frequently limited by a lack of financial resources. Awumbila [29] also came to the conclusion that, in addition to the financial and decision-making limitations they encounter, women are less likely than males to migrate due to their reproductive and caregiving duties.

Similarly, the large proportion of primary-educated migrants (50.0% of temporary migrants) also indicates that less skilled persons will be more likely to migrate temporarily, possibly for the requirement of quick money generation and lack of opportunities in rural areas. This result is also in line with previous studies that had shown that the more educated the head, the higher the capability of the same to learn and process the information required for migration [56]. This is in agreement with Mberu's (2006) finding that people with more education practice all the streams of migration at a relatively higher level than those without the same. Those with greater levels of education tend to be more adaptable; they desire work that aligns with higher aspirations and abilities and which rewards them for their educational investments. Social networks facilitate migration, the data notes in accordance with network theory. In order to traverse the migration process, the majority of migrants (64.4% for temporary migration) employed informal channels, which are usually reliant on informal networks of community contacts, relatives, or acquaintances. This accentuates the significance of social capital as it lowers the cost and risks involved in migration. In addition, because migrants are also inclined to migrate to where they have built networks, the fact that internal migration accounts for a higher percentage of migration than international migration (45.5%) indicates that domestic networks contribute to determining migration trends. In line with network theory's stance that family and individual characteristics influence migration decisions, the statistics also indicate that unmarried persons (77.1% of the temporary migrants) are more likely to migrate, perhaps because they enjoy greater mobility and no domestic responsibilities. The same is also in line with a previous ILO study (2021). International migrants who are temporary are estimated at 70-80%. Fewer (approximately 20-30%) seek permanent resettlement, typically through family reunification or asylum.

One of the key informants of this study was Yirgalem Asefa Atey, a 41-year-old Female, with an MSc and a decade of experience in political leadership, is currently serving as the Vice Administrator of Kilte Awlaelo Woreda, responsible for Social Services Affairs. According to Yirgalem, the demographic profile of migrants from Kilte Awlaelo Woreda reveals a broad age range, from 18 to 50, but with a concentration among individuals aged 18 to 35. Most migrants come from poor families without land or assets. There is a notable trend of more female migrants compared to males. The educational background of migrants varies, with both educated and non-educated individuals migrating.

Another significant informant, Goyteom Gebrehawaria Demeke, a 35-year-old male with a BSc having nine years of experience in agricultural and rural development, is the current Woreda vice Administrator and also a member of the Woreda Executive Committee, responsible for economic affairs in Kola-Tembien Woreda. His extensive exposure in the field provides a valuable insight into rural out-migration and its implications. Under Goyteom, the trends of migration in Kola Tembien reveal that male and female youths aged 15-35 years, who are predominantly from poorer households, are the most common migrants. They may or may not be literate but are predominantly from households with low asset holders. Migration is usually coordinated by brokers and people traffickers, and most of the migrants seek temporary working opportunities outside, primarily to return. However, migrants heading to Europe typically use irregular routes facilitated by brokers and human traffickers, with many migrants seeking temporary opportunities abroad, often with the intention of returning. However, migrants heading to Europe typically use irregular routes facilitated by these brokers.

The Findings from Point Views of Theoretical Context:

Gender and Migration: The findings align with the feminization of migration theory, where women increasingly migrate independently for work or family reunification. The higher female representation in international migration may reflect demand for care work or domestic labor in destination countries [58].

Marital Status: The new economics of labor migration (NELM) theory, which views migration as a household strategy to diversify income sources [59], is supported by the fact that the majority of temporary migrants are single. To ensure long-term stability, married people may relocate permanently [60].

Education: The correlation between education level and migration type reflects human capital theory, where higher-educated individuals seek permanent or international opportunities for better returns on their skills [61].

4.2. Number of Migrated Household Members and Role of Network

The data presented in Table 2 provides valuable insights into the migration patterns of households that have been analyzed through the lenses of the NELM Theory and Network Theory.

Table 2. Number of Migrated Household Members (n=330) and the Role of Network

Variable	Responses	% Respondents
Number of migrated household members (n=330) from each sending household (n= 242 sending households)	1	74.8
	2	17.4
	3	5.0
	4	2.9
Having a relative/friend/family member(s) in the destination (n= 330)	Yes	24.0
	No	76.0
Relationship with migrant (n= 58)	Spouse	81.03
	Extended relative	10.35
	Friend	1.72
	Other family member	6.90
Support received from a relatives/friends/family member(s) in the destination (Multiple support possible; n= 58)	Information support	79.31
	Financial support	72.41

Source: Own Survey March 2024

According to NELM, migration decisions are often made at the household level to diversify income sources and mitigate risks, rather than being solely individual decisions. This is reflected in the data, where 74.8% of households had only one migrant member, suggesting that households may be strategically sending one member to reduce risk while maintaining stability at home. The presence of 17.4% of households with two migrants and smaller percentages with three or four migrants further supports the idea that households are balancing the benefits of migration against the potential risks and costs.

According to network theory, social networks can help with migration by lowering expenses and offering assistance and information. According to the data, 24% of respondents had friends, family, or relations at their destination, which probably had a significant impact on their decision to migrate. The fact that 72.41% of migrants received financial support and 79.31% received informational support from their networks lends even more credence to this. These results demonstrate the value of social capital in migration since networks not only offer helpful support but also lessen the dangers and uncertainty involved in relocating.

The relationship dynamics among migrants also align with Network Theory, as 81.03% of migrants were spouses, indicating that family ties are a strong motivator and support mechanism in migration. Extended relatives and other family members also played a role, albeit to a lesser extent. This suggests that migration is often a family-oriented strategy, where close relationships provide both emotional and practical support.

One in-depth interviewee, in Kilde Awlaelo Woreda, Gemad Tabiya, was Sibagads Tekle Kasa, male, and age 55. Sibagads has sent four of his seven children to migrate, as he lacks his land and struggles to support his family as a daily laborer. His migrant children, aged 20 to 29, are all in Addis Ababa, having graduated high school except one who completed 9th grade. Such a situation is common in the study area and does not have much effect on their agricultural activity. According to Sibagadis, since he does not have his farmland, the migration of his children has no direct effect on agricultural labor availability. The lack of personal farmland means that the absence of his children does not influence agricultural labor input, rather he expects remittances otherwise, at least the migration of his children gives him relaxation; since that reduces the expenditure of the household.

A key informant, from Tahtay Mai-chew Woreda, Mekonen Weldesimon Tikue, a 73-year-old retired administrator with extensive experience in various administrative roles, including Tabiya Administrator, Chairperson of the Woreda Farmers Association, and Head of the Woreda Security Office, currently provides counseling to the Woreda administration. His deep-rooted knowledge and respected status within the community offer valuable insights into rural out-migration and its impacts. According to Mekonen, migration patterns in the region often involve a step-by-step approach. Initially, migrants move to smaller towns, then progress to larger cities like Mekelle and Addis Ababa, and eventually seek opportunities abroad. Migration is facilitated by both legal agencies and illegal brokers. While legal channels in Addis Ababa support migration, illegal brokers also play a significant role, particularly in guiding individuals toward destinations in Europe, Australia, the USA, Canada, and the Middle East.

In summary, the evidence confirms the centrality of household-level decision-making and social networks in migration as theorized by NELM and Network Theory. Households are seemingly strategically navigating migration to maximize gains and minimize losses, and social networks are instrumental in enabling this process by delivering critical support. The implications of these findings for policymakers seeking to assist migrant households include the importance of reinforcing social networks and offering targeted support to alleviate the hardships of migration.

The Findings from Point View of Theoretical Context

Network Theory: The findings point to the part played by migration networks in reducing costs and risks [61] [62],[63]. Networks facilitate information flow and financial support, enabling chain migration.

Household Strategies: The small number of migrants per household is in line with risk diversification strategies, whereby households send fewer members in order not to over-depend on migration [64].

4.3. Drivers of Rural Out-Migration

Migration, mainly rural out-migration, is a multifaceted phenomenon influenced by a multitude of causes. The data presented in Table 3 highlights the reasons behind rural out-migration, categorized by push-pull factors. Numerous migration theories, such as the Push-Pull theory, Network theory, and the NELM theory, can be used to study these dynamics. Push-Pull Theory studies the interaction between factors that pull people toward a destination and factors that push them away from their origin, while Network Theory concentrates on the role of social networks in facilitating migration and NELM stresses risk diversification and household decision-making.

Table 3 shows that economic factors, particularly those pertaining to job possibilities, are the main drivers of household migration. The most significant factor is the search for better jobs and wages, accounting for 31.1% of responses and impacting 64.8% of cases. Lack of land or small landholding size is another major push factor, with 19.5% of responses affecting 40.6% of cases. Lack of access to credit also plays a significant role, making up 16.4% of responses and 34.2% of cases. This finding is in line with other research showing that land scarcity is a major driver of rural out-migration in Ethiopia, particularly among men [26]. The majority of Ethiopian household heads own tiny plots that are insufficient to provide for their families. Ethiopian rural areas had tiny farmland sizes, with an average of 0.5 hectares per household. This situation leads to sending their member(s) either permanently or temporarily (seasonally) to urban centers as well as to abroad, improve household food security condition [28]. According to the research that is now accessible, rural out-migration in Ethiopia is a good way to raise one's own and one's family's level of living and ease land limitations in rural areas.

Table 3. Reason for Rural Out-Migration

Reason for Migration (Push-Pull Factors)	Responses		% of Cases
	N	%	
Lack of land (shortage land holding size)	134	19.5	40.6
Production loss due to drought, snow rain	4	.6	1.2
Large family size	24	3.5	7.3
Lack of access to credit	113	16.4	34.2
Having less asset and a smaller number of livestock	66	9.6	20.0
Better education and training availability	14	2.0	4.2
Conflict, war and political shocks	10	1.5	3.0
Death of family member	5	.7	1.5
Access to information about migration	1	.1	.3
Due to lobby by illegal broker	15	2.2	4.5
Following other family members	29	4.2	8.8
Better health service (medication)	2	.3	.6
To find out better job and better wage	214	31.1	64.8
Because of unemployment	48	7.0	14.5
Lack of good governance	5	.7	1.5
Other	4	.6	1.2
Total	688	100.0	208.5

Source: Own Survey March 2024

Additional notable factors include having fewer assets and smaller numbers of livestock (9.6% of responses, 20.0% of cases) and large family sizes (3.5% of responses, 7.3% of cases). Other reasons include better education and training opportunities, conflict and political issues, unemployment, and influence from family members or brokers, each contributing to the overall migration dynamics. This data underscores the multifaceted motivations behind migration, highlighting both push and pull factors. This result aligned with previous studies conducted in India by Khan, Hassan, and Shamshad [64] which found that work or employment seeking (35.88%) is the primary cause of rural out-migration followed by move with household (26.23%), marriage (23.14%). In addition, a study employed by Chowdhury et al [65] also revealed that about 47 percent and 31 percent of the Rajbanshi people migrated due to low-income and unemployment-related reasons respectively.

According to the Network theory, the data emphasizes how social networks help with migration by offering resources, support, and information. The results demonstrate the impact of pre-existing migrant networks by revealing that following other family members (8.8%) is a significant cause of migration. These networks make migration a more attractive choice for rural households by lowering the risks and expenses involved. Furthermore, the fact that 0.3% of respondents had access to information regarding migration and 4.5% were influenced by lobbying by an illegal broker indicates that both official and informal networks influence migration trends. Even if a small fraction of people have access to information, this highlights how crucial networks are for spreading awareness of migration prospects. This result is consistent with a previous study conducted by [66] examined rural out-migration in Hadiya and Kembata Tembaro zones by applying the social network theory as a theoretical framework and found that social networks and access to information significantly trigger out-migration in rural villages of Hadiya and Kembata Tembaro zones. Likewise, Kinfe [67] pointed out that it's important to discuss how information helps in rural-urban migration. Therefore, information obtained from urban relatives, returnee migrants, or the media would act as a catalyst for movement from rural to urban areas.

The information also emphasizes the Push-Pull Theory, which offers a two-pronged framework for comprehending migration in which pull forces draw people to a location and push ones push them away from their starting point. In this dataset, push factors such as lack of land, lack of access to credit, and unemployment (14.5%) dominated reflecting the economic hardships faced by rural populations. On the other hand, pull factors like better education and training availability (4.2%) and better health service (0.6%) are less prominent but still significant, indicating that some migrants are drawn to destinations offering improved social services. The strong pull factor of better job and better wage (64.8%) highlights the economic aspirations driving migration.

While economic factors dominate, other reasons such as conflict, war, and political shocks (3.0%) and death of family member (1.5%) indicate that non-economic factors also play a role in migration decisions. These factors align with broader migration theories that consider political instability and personal crises as significant drivers of displacement.

In line with NELM and Push-Pull Theory, the evidence in general points to economic factors as the key drivers of rural outmigration. People are pushed by factors like unemployment, land shortage, and availability of credit to look for greener pastures elsewhere, and they are pulled by the prospect of increased and improved employment and better wages to urban centers or foreign nations. Network Theory is also relevant, as migration is driven by social networks that reduce the barriers and provide support. However, the relatively less emphasis on social services like education and health suggests that economic incentives are more important than social aspirations in this context. The results highlight the need for policies to tackle the underlying causes of rural out-migration, like expanding the availability of loans, redistributing land, and generating local jobs. Previous research in the study area, Tigray, by Seid Ebrahim [3] validates that unemployment is the primary cause of youth migration from Mekhoni Woreda to the Middle East. In agreement with this observation, documentary research validates that migration has also been found to be influenced by a lack of strong credit institutions. According to Seid [3] and Kelemework et al. [4], rural out-migration from Tigray has also been driven by the government's inability to supply youth with sufficient credit and the inability of microfinance institutions to offer loans at fair interest.

Focus Group Discussion (FGD) in Simret Tabiya Kola Tembien Woreda also revealed that landlessness, unemployment, political conflict, peer pressure, and employment of illegal brokers as significant reasons for causing migration. The FGD participants indicate that the political conflict and instability also push people to seek stability elsewhere. The brokerage role and peers demonstrate the social basis of migration, where social networks and go-betweens are central to making migration decision. FGD in Gemad Tabiya and Genfel Tabiya (Kilte _ Awlalo Woreda) also revealed that illegal

brokers, no land, and not receiving support for farm work are the primary causes for most out-migration in their Tabiyas.

Other factors include opportunities for unemployment, inadequate irrigation facilities, and a lack of credit access for small businesses. These findings align with Lee's pull-push theory of migration, in which he emphasizes economic, social, and infrastructural deficiencies as major drivers of migration.

One of the key informants Gebremedhin Hagos was a 40-year-old with an MSC Degree in Rural Development and 17 years of experience in youth and development affairs, currently serves as the Vice Bureau Head of Technical, Vocational, Education, and Training (TVET) in Tigray Regional State. His role involves overseeing job creation efforts, which provides valuable context for understanding rural out-migration in the region. Regarding patterns of rural out-migration; Gebremedhin said that migration occurs through both legal and illegal channels. Many migrants use illegal brokers, while some obtain visas through relatives or friends. Internally, migrants often move to nearby towns or cities like Mekelle and Addis Ababa. Internationally, destinations include Saudi Arabia and other Middle Eastern countries, with routes through Somalia, Djibouti, and Libya. Migrants attempting to reach Europe may use Sudan and Libya, while those aiming for the USA might travel through Rwanda, Uganda, and Kenya. He added that migrants face severe challenges, especially when attempting to migrate through Libya, where they risk being held hostage by human traffickers. These traffickers may extort additional money from the migrants' families or use threats of violence. Boat accidents during migration are common, leading to deaths. Even successful migrants often struggle to find employment upon arrival, with only a few securing the opportunities they seek.

Hayish Sbagadis, Male, 38 years old, with MBA degree in Marketing Management was also another key informant in this study. Hayish has worked in the federal government Tax and Revenue Authority and Investment Commission for 12 years. Now, he is working in Tigray Regional Interim Government as Head of the Regional Bureau of Youth Affairs. According to Hayish, there are diversified reasons for rural out-migration. The main ones are landlessness, lack of job opportunities, and hopelessness of youth in getting support to create jobs. In addition, the illegal brokers and human traffickers also aggravate the ambition of gain from migration. Hayish expressed feelings of the youth as follows "The youth attitude is not as we thought. It has been changed. The Youth these days are ambitious and in need of a sweeter livelihood. Youth people hate the hardship of life in rural areas. However, such needs cannot be simply fulfilled, due to many reasons, like lack of job, lack of income, landlessness, and homelessness among others. These problems make the youth feel that citizenship is nothing and meaningless to them. Dissatisfaction with good governance, lack of governmental support, and feeling of non-citizenship or feeling as if the nation doesn't belong to him or her, due to the inhuman atrocity imposed on Tigrians during the war of 2020-2022. The very low, backward, and labor-intensive production system of agriculture also makes the youth hate rural livelihood. In addition, hopelessness to job, under-age marriage for females then exposure to divorcing, and lobbying of illegal brokers and human traffickers are also pushing factors of rural out-migration" (Hayish Sibagadis, March, 2024 Interview).

The key informant Yirgalem Asefa Atey has a chance to better knowledge of the subject area specifically the reasons for rural out-migration due to her extensive involvement in local administration provides valuable insights into the factors driving rural out-migration in the area. Yirgalem found that landlessness, a lack of employment prospects; political shocks like war, and the influence of illegal brokers were some of the main reasons why people left rural areas. Political unrest and landlessness are important catalysts, and illegal brokers make matters worse by enabling unapproved migration.

In conclusion, the main drivers of migration are inadequate access to finance (34.2%), landlessness (40.6%), and the desire for better employment and pay (64.8% of instances). Social networks, including family ties and broker knowledge, are also very important in easing migration. Push factors like unemployment, land scarcity, and political instability dominate, while pull factors such as better education and health services are less prominent but still relevant. The findings align with migration theories like NELM, Network Theory, and Push-Pull Theory, emphasizing the need for policies addressing land redistribution, credit access, and local job creation to mitigate rural out-migration.

Findings of the Study from Point View of Various Theories

Push-Pull Model: The results fit the classic push-pull framework (Lee, 1966), where economic deprivation (push) and better opportunities (pull) drive migration. The dominance of job-seeking reflects neoclassical economic theory.

Structural Constraints: Lack of land and credit access highlights structural inequality in rural areas, forcing migration as a livelihood strategy [68].

Social Networks: The role of family and brokers (4.5%) aligns with social capital theory, where networks mediate migration decisions [69].

Broader Debates of the Findings and Implications

Development versus Dependency: While migration can alleviate poverty (remittances), it may also create dependency on external economies [70]. The survey does not explore remittances, but the high unemployment push factor suggests structural issues in rural economies.

Gender Dynamics: The feminization of migration raises questions about gendered labor markets and the care economy in destination areas [71].

Policy Implications: Addressing root causes (e.g., land reform, credit access) could reduce distress migration. Strengthening legal migration channels is critical, given the role of brokers.

5. Conclusions

The primary drivers of rural out-migration in Tigray, Ethiopia, are economic, including the search for better jobs and wages (64.8% of cases), lack of land (40.6%), and limited access to credit (34.2%). The NELM theory, which views migration as a household strategy to diversify income and lower economic risks, is consistent with these findings. Migration decisions are also influenced by non-economic variables like political unpredictability, war, and illicit brokers. The recent war in Tigray (2020-2022) has intensified migration intentions, particularly among disillusioned youth. Social networks are crucial, as Network Theory highlights their role in reducing costs and providing information and support. A significant number of migrants (64.4%) use irregular channels, relying on informal networks of family, friends, or community members. Additionally, 24% had relatives or friends at the destination, and 79.31% received informational support, emphasizing the importance of social capital.

Migrants are predominantly young, often from landless or asset-poor households. Limited land and unemployment are key push factors, while better wages and job opportunities act as pull factors. Although educated people also migrate for better prospects, rural restrictions are the main reason for migration for lower-skilled persons with only a primary education (50.0% of temporary migrants). A significant proportion (71.5%) engage in temporary migration, with females (58.1%) more likely to migrate than males (41.9%), reflecting a household strategy to secure remittances while maintaining stability. The prevalence of internal movement (54.5%) is higher than that of foreign migration (45.5%), underscoring the influence of local networks on migration trends.

Future research could examine the long-term effects of migration on sending communities and gender-specific outcomes. Overall, the survey emphasizes the interaction of economic, social, and demographic factors in rural out-migration as well as the need for nuanced policies that address both structural inequalities and migrant agency. The findings are consistent with various migration theories.

There are policy implications:

- Firstly, creating opportunities for the youth so that they can have access to land and improve access to credit services; should be taken into consideration to implement land redistribution programs to ensure that rural households have access to sufficient land for agricultural activities. Such an access (both to the land and credit services) can be created by managing the available resources using modern technologies and information systems. In Tigray, the main problem is not in availability of land, but rather the management system that we have. Solving two of the key problems could reduce the pressure to migrate due to landlessness and access to credit services. Moreover, to establish and strengthen microfinance institutions that provide low-interest or interest-free loans to rural households, particularly youth, to support small-scale agricultural and non-agricultural enterprises is crucial. This would reduce the need for migration as a livelihood strategy.
- Second, employment generation programs need to be accorded higher priority. Local jobs creation programs, especially in rural pockets, to offer young people alternatives and the incentive to curb the push factor for migration. This could be done through investment in agro-processing, small-scale industry, and infrastructure building. Also, such employment generation programs need to be supplemented by vocational training. Expand vocational and technical training schemes to equip rural youth with skills that are currently in demand in local labor markets so that they can avoid migration for greater job opportunities.
- Thirdly, assisting the existing migrant networks in need by enhancing lawful migration channels and reducing reliance on unlawful middlemen is another area that could be receiving policymakers' attention. This would include the setting up of information centers that spread accurate information about migration options and risks. This could enable to develop lawful

migration pathways towards collaborating with global partners, particularly in relation to temporary labor migration, help to reduce risks of illegal migration.

- Fourth, another solution area is building rural infrastructure and services. Invest in rural infrastructure, such as irrigation facilities, to improve the productivity of agriculture and reduce the push forces related to low agricultural production. Improve rural communities' access to quality education and health to reduce the pull forces drawing migrants to the cities or overseas.
- Fifth, place post-war reconstruction and peace building efforts in Tigray on top of the agenda to address the political unrest and conflict which have escalated migration intentions. This includes the supply of psychosocial support to conflict-affected communities. Strengthen local government and enable rural communities to access equitably and transparent administrative services to reduce the feelings of disillusionment and non-citizenship among young people.
- Sixth, combat illegal brokers and human trafficking is also to be given attention. Increase law enforcement efforts against illegal brokers and human traffickers that exploit vulnerable migrants. Awareness-raising campaigns to warn potential migrants of the dangers of irregular migration could be part of this. Offer victims of human trafficking assistance services such as reintegration programs, legal support, and psychosocial counseling.
- The seventh and final recommendation is that to promote youth engagement and empowerment. Empowerment programmes for rural youth through the provision of access to education, skills development, and entrepreneurship programmes should be launched and implemented. This could eradicate the sense of hopelessness and disenfranchisement driving migration. Engage the youth in local governance and community development activities to obtain the sense of belonging and citizenship and reduce the desire to migrate.

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