



# Cherchez l'homme? The Wartime Migration of Men in Ukraine: Research Note

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## Abstract

This research note investigates wartime migration patterns of Ukrainian men in the initial months of the full-scale invasion. We utilize data from the OneUA project, which employed non-probability sampling via META's social media platforms and survival analyses techniques to analyze the impact of demographic and socioeconomic characteristics on men's decisions either to relocate within Ukraine (i.e., becoming internally displaced) or emigrate abroad (i.e., becoming a refugee). Exemptions from conscription under martial law are modestly reflected in the patterns of men's emigration, with fathers of three or more children having a higher rate of international migration. Contrary to our expectations, men above conscription age, single fathers, and those in poor health did not emigrate at a higher rate compared to their male counterparts. However, higher levels of education, English proficiency, stronger financial standing, and better health are all associated with a significantly increased rate of international migration. Notably, men who reported being particularly healthy in the survey left Ukraine at higher rates compared to those in poor health. Assuming that their reported health status reflects their condition prior to leaving the country, this finding appears to contradict expectations based on martial law conditions. Our findings imply that, despite the restrictions imposed by martial law, some productive and subjectively healthy men may have left Ukraine during the initial months of the Russian invasion.

**Keywords** Male refugees · Displaced persons · Ukraine · Aspirations-capabilities · Survival analyses

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## Introduction

On February 24, 2022, Russia launched a full-scale invasion of Ukraine, significantly escalating the ongoing conflict that had begun with Russia's annexation of Crimea and its military support for separatists in the Donbas region in 2014 (O'Loughlin et al., 2017; Ploky, 2023). This invasion marked a turning point in the Russo-Ukrainian War, triggering widespread devastation and loss of life. The violence unleashed by the invasion caused widespread suffering among the Ukrainian population, with millions forced to flee their homes or endure life in areas under siege (United Nations, 2023). By June 2022, approximately 5 million Ukrainians had become internally displaced persons (IDPs), and more than 6 million had fled, marking the largest refugee crisis in Europe since World War II (UNHCR, 2023a, b).

On the morning of the invasion (February 24, 2022), Ukrainian President Volodymyr Zelenskyy signed a decree enacting martial law across the country with the aim to ensure Ukraine's defense capabilities against the Russian military offensive (Deutsche Welle, 2022). As of July 2022, about 1 million individuals were conscripted or mobilized to the Defence Forces of Ukraine (Danylyuk, 2024). A general military mobilization prohibited men aged 18 to 60 from leaving the country as they could be conscripted any time (The Washington Post, 2024). Women, children, and the elderly were not subject to these restrictions and were able to leave, contributing to a significant gender-age disparity in the refugee flow (Brücker et al., 2023; Kubiciel-Lodzińska et al., 2024). Research demonstrates significant self-selection patterns at both the family and individual levels among Ukrainian refugees in various countries (Brücker et al., 2023; Duszczyk et al., 2023; Kubiciel-Lodzińska et al., 2024). These patterns are also evident among Ukrainian refugees in multiple European cities (Kohlenberger et al., 2023) and among female Ukrainian stayers, IDPs, and refugees across several European nations (Kosyakova et al., 2025; Van Tubergen et al., 2024).

As a result of the martial law and the mobilization, the composition of the refugee population was strongly gendered, with women accounting for the vast majority of those who found their way abroad (Kosyakova et al., 2024). Yet, some men left the country or became IDPs. Due to the lack of reliable micro-level data capturing stayers, IDPs, and international refugees, we know very little about the male migration patterns of IDPs and refugees. This research note is among the first to examine the differences in demographic and socioeconomic characteristics between Ukrainian men who emigrated abroad and those who relocated to safer regions within Ukraine (see Van Tubergen et al., 2024 for similar analyses of Ukrainian women's migration patterns). Although the analysis relies on data from a non-probability sample recruited through META's platforms, it offers valuable insights into the determinants of men's migration patterns during the early stages of the war. These findings are particularly important given the increasing number of men among Ukrainian refugees in European countries (Dudek et al., 2023; Panchenko, 2023).

## Ukrainian Men Amidst the Russian-Ukrainian War

The Russian offensive began with coordinated air strikes across Ukraine, followed by several simultaneous ground assaults from the North, East, and South (Clark et al., 2022). In response to the invasion and following the call for general mobilization, a significant number of Ukrainian men voluntarily enlisted in the armed forces, bolstering the country's defensive capabilities. Simultaneously, to prevent mass emigration of men unprepared for combat, maintain the economy's functionality, and ensure the military's capacity to replace casualties at the front, border restrictions were imposed on men aged 18 to 60, in line with the introduction of martial law. However, several exemptions to these restrictions were implemented. These exemptions applied to men with poor health, those employed in critical sectors such as energy, defense manufacturing, and government services, as well as individuals pursuing higher education. Family circumstances also permitted deferment from military service; for example, men who were sole guardians of children, had dependents requiring constant care, or were fathers of three or more children were eligible for exemptions (Visit Ukraine, 2022).

Those who did not qualify for official exemptions under Ukraine's martial law but felt unprepared for military service sought alternative means to avoid conscription. One common strategy involved relocating within the country, particularly to rural areas or smaller towns, where enforcement of military draft regulations was perceived to be less stringent or easier to evade. Reports indicate that some men attempted to avoid the attention of military recruitment offices by going into hiding or relying on informal networks to circumvent conscription efforts (BBC, 2024).

Despite the imposition of strict border controls that legally prohibited men of conscription age from leaving Ukraine, some attempted to cross into neighboring countries using unofficial routes. For example, crossing through Moldova or Romania became a common, though risky, option as border patrols and military police were increasingly deployed to prevent illegal departures (RFE/RL's Ukrainian Service, 2024); The Washington Post, 2024). Moreover, during the early months of the invasion, some men resorted to hiring lawyers or exploiting corrupt practices to evade conscription, seeking alternative means to escape the draft (The Guardian, 2023).

The imposed regulations likely led to a selective process regarding emigration versus relocation within Ukraine. Men who had the resources and connections may have opted to leave the country illegally, using unofficial routes or exploiting legal loopholes. In contrast, those who were either unable or unwilling to emigrate often chose internal relocation, moving to rural areas or smaller towns where draft enforcement was less rigorous. This selective migration may have created distinct sociodemographic profiles for male (and female) international refugees and IDPs.

## Theoretical Frame and Expectations

In wartime situations, migration decisions are primarily shaped by non-economic factors (FitzGerald & Arar, 2018), even though economic considerations further play a role (Chiswick, 1999; Sjaastad, 1962). The "aspirations-capabilities"

framework (Carling, 2002; Carling & Schewel, 2018; Czaika et al., 2021; de Haas, 2021; Schewel, 2020; Van Tubergen et al., 2024) identifies two key groups of factors influencing migration: individual aspirations and capabilities. Aspirations encompass both economic motives and non-economic factors, such as personal safety or attachment to one's home and country, that drive an individual's desire to migrate. Capabilities refer to the opportunities and constraints individuals face in realizing their migration aspirations, such as financial means or health status. Capabilities — or the lack thereof — are also shaped by institutional barriers, such as martial law and border restrictions (ebd.).

Existing research has examined the selectivity of Ukrainian refugees, who are predominantly women, consistently showing that they tend to have higher levels of education (Brücker et al., 2023; Duszczuk et al., 2023; Head et al., 2022; Kubiciel-Lodzińska et al., 2024; Van Tubergen et al., 2024). Studies focusing on women further suggest that single women without young children, especially those with higher education, stronger English proficiency, and greater financial resources, are more likely to emigrate than to remain in their home regions or relocate within Ukraine (Kubiciel-Lodzińska et al., 2024; Van Tubergen et al., 2024).

For men, the available opportunities — or the lack thereof due to martial law — likely play a critical role in shaping patterns of internal resettlement or emigration abroad. Based on this, we expect that:

- (1) Men who are exempt from military conscription — such as single parents, fathers of three or more children, or those aged over 60, as well as those with bad health status — will have a higher probability to leave abroad than men who are restricted from leaving under martial law.

Considering the potential use of legal loopholes or illegal attempts to evade conscription and leave Ukraine, those with greater capabilities due to higher socio-economic resources and higher aspirations due to higher potential returns to these resources should be more likely to migrate. Hence, we expect that:

- (2) Men with greater financial resources, internationally transferable human capital, and better health status will have a higher probability to leave abroad than men with fewer resources.

## Data, Measures, and Methods

### Data and Sample

The empirical analyses are based on the survey data from the *OneUA* survey (Kogan et al., 2022). The data were collected between July 14 and August 18, 2022, via self-administered computer-assisted web interviews (CAWI). The survey targeted all Ukrainians, i.e., individuals holding the Ukrainian citizenship,

who resided in Ukraine as of February 23, 2022. The survey's main focus was on those still residing in their pre-war places of residence in Ukraine, IDPs within Ukraine, and Ukrainian refugees in eight other European countries (Poland, Germany, Czech Republic, Italy, Netherlands, Romania, Hungary, and Moldova).

Given the constraints of collecting data on the probability samples in wartime situations (Andreß & Careja, 2018; Reichel & Morales, 2017), *OneUA* utilized the social networking platform Meta encompassing Facebook, Instagram, and Facebook Messenger (for comparable usage of META to study migration behavior, see Ersanilli & Van Der Gaag, 2020; Pötzschke, 2022; and Rocheva et al., 2022). Ads were directed at Meta profiles of users in Ukraine and Ukrainian or Russian speakers outside Ukraine and contained a link to the Ukrainian-language survey. While this enabled avoiding interference from Russian-speaking trolls, using Ukrainian as a language of the questionnaire may have introduced a minor degree of undercoverage of some Russian-speaking Ukrainians. However, survey data by Kulyk (2023) indicate that only 6% of Ukrainians spoke exclusively Russian, while an additional 9% predominantly used Russian in their daily lives. In professional contexts, these figures were even lower — 4 and 7%, respectively — and on the internet, they dropped to 2 and 4%. Furthermore, the high prevalence of Ukrainian language proficiency among citizens who primarily speak Russian ensures that most are capable of completing the survey in Ukrainian (Kulyk, 2016). Another limitation is that data cannot be used to generalize the distribution of specific phenomena within the general population — Ukrainian men both within the country and abroad. The biases might be particularly large due to a significant proportion of men being conscripted into the army, working long shifts and hence not available for participating in a survey as well as some men hiding to avoid conscription. Yet, we can more reliably compare between the categories within the given distribution of respondents, which will be the aim of the present study.

In addition to the targeted advertisements on the social networking platforms, respondents were able to enter the survey directly through a link included in its Facebook page or by invitation from another participant. Following self-reported information, the *OneUA* respondents have been residing in the following countries: Ukraine (48.1%), Germany (18.1%), Poland (13.5%), Czech Republic (6%), Italy (4.3%), Netherlands (3.6%), Romania (1.5%), Hungary (0.8%), Moldova (0.6%), France (0.3%), Austria and Switzerland (0.3%), Spain (0.3%), Bulgaria (0.2%), Slovakia (0.2%), the USA (0.2%), Canada (0.2%), Baltic countries (0.1%), and Israel (0.1%).

We focus on adult men (18+) holding Ukrainian citizenship who post-February 23, 2022, either stayed in the house or apartment in which they had lived on February 23, 2022 (henceforth, pre-war residence), reallocated within Ukraine, or moved abroad. Correspondingly, the selection criteria for our analytic sample were based on citizenship, age (birth years 1942–2004), the county of the pre-war residence, and migration status as well as destination choice post-February 23, 2022. Respondents with pre-war residences outside Ukraine or with missing migration data post-February 23, 2022, and those who emigrated before 2022 were excluded. This led to a total of 1763 person observations.

## Method and Variables

For the following analysis, the data was organized as person-day observations. For each individual in the sample, the period of observation began on February 24, 2022, and ended either on the date of leaving (day, month, and year) of the pre-war residence or the date of the survey completion. Our dependent variable is the hazard rate, which represents the probability of leaving the pre-war residence on a certain day given that a person had not left home by that day. Accordingly, a higher hazard rate implies both a faster rate and a higher (daily) probability of leaving the pre-war residence. The inclusion of the time dimension into the analyses is crucial to capture individuals' responses to the dynamic war situation. This dynamic approach distinguishes our study from previous research by Van Tubergen et al. (2024), highlighting its distinctive contribution.

Not all *OneUA* respondents had left their pre-war residence at the time of the survey, implying that our data is potentially right-censored due to the ongoing possibility of migration. To deal with such a type of data, we employ survival analysis techniques and specifically the Cox proportional hazard model with time-varying covariates (Blossfeld et al., 2007). We adopt a so-called competing risk approach by modelling destination-specific hazard rates (Blossfeld et al., 2007) to include two exit states: moving to another county within Ukraine and moving abroad.

Our key independent variables encompass individual (1) demographic characteristics and (2) socioeconomic characteristics, largely following van Tubergen et al.'s (2024) approach. Among demographic characteristics, we account for *age*, *number of children*, indicators for being in *partnership*, and for being a *single parent*. Socioeconomic characteristics, which are related to both aspirations and capabilities for migration, are captured by individuals' *highest level of education* attained in Ukraine, self-reported relative *financial situation* as of summer of 2021, a self-assessed measure of *English skills*, and subjective *satisfaction with health*. The latter three variables are treated as continuous variables. The variable pertaining to subjective health is measured at the time of the interview and is therefore not exogenous to migration decisions. Nevertheless, we include it to test two competing hypotheses. The first is that men may have a higher probability of leaving Ukraine due to conscription exemptions, and the second is that healthier men may be more capable of migrating via dangerous routes.

As for control variables, we consider an indicator for being born in Crimea or Donbas (to approximate potential exposure to the Ukrainian-Russia's conflict already since 2014), fixed effects for respondents' regions of residence on 23.02.2024, differentiating between Kyiv city, North-Eastern, Southern, Central, and Western regions, and Donbas region of birth, as well as survey type and survey week participation (to absorb any systematic differences related to the survey design and field period). Online Appendix Table A1 includes information on all independent and control variables, their descriptions, and descriptive statistics.

To address missingness of independent and control variables, we apply multiple imputation methods using chained equations (van Buuren, 2012), estimating 25 imputed datasets with complete information. Following Rubin's (1987) approach, we combine the results of the analyses performed on each dataset, considering the

imputation variances within and between the imputed datasets. Note that data on women were included in the multiple imputation but not in the corresponding analyses. We refrain from imputing the missing leaving dates of leaving pre-residence place or destination country because such missing information is likely not to be random and to correlate with education. Online Appendix Table A1 illustrates that missing information was present to varying degrees across measures.

## Results

### Male and Female Migration Patterns

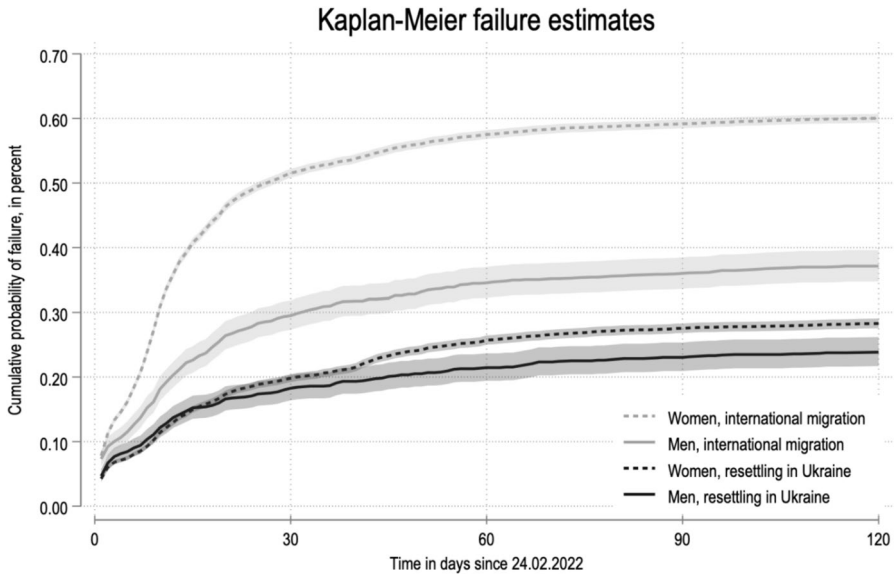
We begin with the descriptive information on the timing of leaving one's pre-war residences in response to war hostilities. Figure 1 presents the unconditional inverted Kaplan–Meier survival function curves, which chart the time to the event of resettling within Ukraine or migrating internationally — two potential destinations of Ukrainian men — and for comparison, also Ukrainian women. The y-axis represents the cumulative incidence of these events (labelled a “failure” in the survival analysis jargon) — essentially, the probability that an event has occurred by a specific time — while the x-axis records the number of days since February 24, 2022. The steeper slopes of the curves, the higher the frequency of the respective events, and thus the faster the reduction in the proportion of individuals who remain in their pre-war residence. As time progresses from the onset of the war, the percentage of individuals who have not yet left their homes decreases.

Results indicate that Ukrainian men — as well as women — react to war hostilities by leaving their homes, but at a slower rate when it comes to relocation to other regions in Ukraine as compared to leaving the country. Interestingly, there is hardly any difference between male and female IDPs (log-rank test of gender differences:  $\chi^2 = 5.71$ ,  $p = 0.017$ ), whereas women leave Ukraine at a much higher rate than men (log-rank test of gender differences:  $\chi^2 = 258.17$ ,  $p = 0.000$ ).

Note that the share of those displaced in our data is higher than the official statistics due to the sampling strategy. By the end of 2022, nearly one-third of Ukrainians were internally displaced or sought asylum across Europe (UNHCR, 2025). Nevertheless, the pattern of displacement is similar with the highest displacement recorded in the first days and months since the war outbreak (Teke Lloyd & Sirkeci, 2022; UNHCR, 2023b). Moreover, the dynamics of leaving Ukraine corresponds to the trends, but not to the proportions reported by, e.g., UN IOM (2023). This suggests particular underrepresentation of men among stayers, a phenomenon to be discussed in the concluding section.

### Multivariate Results

Table 1 presents the findings from the Cox proportional hazards regression analysis, which assesses the hazard rates of leaving pre-war residence counties by resettling within Ukraine or migrating abroad. The results are expressed as hazard ratios,



**Fig. 1** Cumulative percentage of Ukrainians who left their pre-war residence by day since the war outbreak, by gender (product-limit estimation), with 95% confidence intervals. *Note:* inverted Kaplan–Meier survival curves (Kaplan–Meier failure estimate) based on migration flows between February 24, 2022, and August 13, 2022, with observation period between July 14, 2022, and August 13, 2022. *Data source:* OneUA (2022)

which quantify the relative risk of an event occurring at a particular point in time between two groups, while controlling for other covariates in the model. Coefficients above zero indicate that the treatment group has a higher probability of an event (leaving home) within any given time period compared to the control group, while coefficients below zero suggest a lower probability. This method allows us to understand the relative impact of various factors on the decision of the destination: either resettling in Ukraine or international migration.

In terms of the demographic characteristics, results partly deviate from our expectations. The 18–25-year-old men are the ones with the highest hazard rate of all the groups to resettle in Ukraine or to go abroad. Due to their young age, they should have the highest aspirations as well as capabilities to leave their homes. Further, we find some non-linearity with men aged 56–60 having the lowest hazard rate of international migration. The fact that we do not find any increased hazard rate of leaving for 60+ -year-olds might be related to the lower capabilities and aspirations in these groups to leave their homes. Note that the age differences are visible even without controlling for health satisfaction (see Online Appendix Table A2).

Our expectation that fathers of three or more children exhibit higher international migration rates — driven in large part by their heightened aspirations to secure employment and ensure a better future for their children — is confirmed by the data. Interestingly, fathers of two children are also more likely to emigrate, whereas the presence and number of children do not determine the relocation patterns within Ukraine. We further do not observe that single fathers are faster to leave Ukraine,

**Table 1** The hazard rate of leaving pre-war residence county, men (estimates from the Cox proportional hazards regression; base category: stay in pre-war residence county)

|  | Resettling in Ukraine |        | International migration |        |
|--|-----------------------|--------|-------------------------|--------|
|  | Hazard ratio          | (SE)   | Hazard ratio            | (SE)   |
| <b>Demographic characteristics</b>             |                       |        |                         |        |
| Age (ref. 18–25)                               |                       |        |                         |        |
| 26–35  | 0.63*                 | (0.12) | 0.73*                   | (0.11) |
| 36–45  | 0.69*                 | (0.13) | 0.50***                 | (0.08) |
| 46–55  | 0.50**                | (0.12) | 0.51***                 | (0.10) |
| 56–60  | 0.56*                 | (0.15) | 0.23***                 | (0.07) |
| Older than 60                                  | 0.34***               | (0.08) | 0.61**                  | (0.10) |
| Children (ref.: no)                            |                       |        |                         |        |
| 1 child  | 1.24                  | (0.27) | 1.34                    | (0.25) |
| 2 children                                     | 1.17                  | (0.27) | 1.78**                  | (0.34) |
| More than 2 children                           | 1.34                  | (0.34) | 2.73***                 | (0.54) |
| Married  | 1.18                  | (0.24) | 0.88                    | (0.15) |
| Single parent                                  | 0.96                  | (0.28) | 0.76                    | (0.17) |
| <b>Socioeconomic characteristics</b>           |                       |        |                         |        |
| Education (ref.: below upper secondary)        |                       |        |                         |        |
| Upper secondary                                | 1.07                  | (0.33) | 1.55                    | (0.36) |
| Vocational based on lower or upper secondary   | 1.33                  | (0.38) | 0.94                    | (0.23) |
| Incomplete tertiary                            | 1.23                  | (0.37) | 1.61*                   | (0.38) |
| Tertiary or higher                             | 1.39                  | (0.37) | 1.59*                   | (0.33) |
| Finances in summer 2021                        | 1.05                  | (0.07) | 1.24***                 | (0.06) |
| English language skills                        | 1.11*                 | (0.06) | 1.26***                 | (0.05) |
| Health satisfaction                            | 1.02                  | (0.02) | 1.06***                 | (0.02) |
| <b>Regional differences</b>                    |                       |        |                         |        |
| Regions of living in Ukraine (ref.: Kyiv city) |                       |        |                         |        |
| Northern-Eastern Front                         | 1.05                  | (0.16) | 1.74***                 | (0.25) |
| Donbas   | 1.00                  | (0.29) | 2.10***                 | (0.47) |
| South  | 0.67*                 | (0.13) | 1.17                    | (0.19) |
| Center   | 0.32***               | (0.06) | 1.27                    | (0.20) |
| West   | 0.20***               | (0.06) | 1.02                    | (0.19) |
| <i>N</i> person observations                   | 1763                  |        | 1763                    |        |
| <i>N</i> failure observations                  | 358                   |        | 583                     |        |
| <i>N</i> imputations used                      | 25                    |        | 25                      |        |

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$  (two-sided tests). Robust standard errors clustered at the person-level are in parentheses. Efron’s method implemented for handling tied ending times. All models control for the indicator for being born in Crimea or Donbas, fixed effects for survey week, country of birth, and survey type. *Data source*: OneUA (2022)

probably due to lacking capabilities. Notably, married or partnered men exhibit resettlement and emigration rates comparable to single men, suggesting that marital status does not play any role in migration patterns, likely a result of the martial law and the consequent lack of capabilities among men to leave.

Socioeconomic characteristics are associated with leaving home, but their effects vary depending on the destination. Compared to those with incomplete upper secondary education, men with incomplete or complete tertiary education have a higher rate of international migration. In contrast, education does not play a significant role in the patterns of relocation within Ukraine. Men with better financial resources have higher hazard rates of international migration, but not for internal migration. Proficiency in English increases the hazard rate of both internal relocation and international migration, but stronger for the latter. Overall, the productivity-related characteristics operate consistently with the aspiration-capabilities framework. Self-reported health is not significantly related to internal displacement but is associated with a higher hazard rate of international migration. Assuming that the reported health status also reflects the respondents' condition prior to leaving the country, it appears that it is not the unhealthy men who left Ukraine. Quite the contrary, healthier men — probably due to increased capabilities — were swifter to leave the country.

Regional differences in the hazard rates of Ukrainian men leaving their homes are also worth reporting. Specifically, those who on February 24, 2022, lived in the Western, Central, and Southern parts of Ukraine had a lower hazard of internal relocation in the initial months of the war compared to those from Kyiv city. At the same time, men from Northeastern (e.g., Kharkiv) and Donbas regions displayed significantly higher hazard rates of international migration compared to the rest.

## Additional Analyses

Given differences in the legal restrictions for leaving Ukraine between men and women, one could expect differences in the selectivity between both genders. Following Aksoy and Poutvaara (2021), groups facing high risks of conflict — in our case, men, due to larger leaving restrictions — are more likely to be a selective group. Therefore, in additional analyses (see Online Appendix Table A3), we examine whether patterns of relocation differ between men and women. The results indicate that men aged 26 to 60 have a lower hazard rate of international migration than women. However, compared to childless individuals, men with three or more children are more likely to emigrate than women. Similarly, married men or those in partnerships are more likely to emigrate than women with a comparable family status. There are no gender differences in the association patterns between socioeconomic characteristics and relocation destinations. Finally, men residing in Donbas and the southern regions on February 24, 2022 (compared to those from Kyiv), are more likely to migrate abroad than women from the same regions.

In the second set of analyses (see Online Appendix Table A4), we compare the dynamic modelling approach employed in this study with a conventional multinomial logistic regression method (see, e.g., Van Tubergen et al., 2024). The key

difference between the Cox proportional hazards model and multinomial regression is that the Cox model analyzes time-to-event data and accounts for the possibility of censored observations, whereas multinomial regression is designed for categorical outcome prediction, estimating the probability of each outcome category relative to a baseline, without incorporating the time dimension. The multinomial logistic regression estimates the probability of individuals leaving their pre-war residence to either (a) another area in Ukraine or (b) abroad. Notable differences emerge between the analyses depending on the estimation method. When ignoring the time dimension and focusing solely on the outcome probability, we find that men with three or more children and those in a better financial situation are significantly more likely not only to emigrate but also to relocate within Ukraine compared to childless men and those with worse financial situations. This suggests that while fathers of larger families and individuals with more financial resources generally have a higher probability of relocating overall (see Table A4), they do that quicker only when it comes to international migration (see Table 1). In multinomial models, we further find no statistical difference in the likelihood of emigration between individuals with incomplete tertiary education. Other pronounced differences pertain to men's relocation patterns by regions, underscoring the necessity of dynamic models for analyzing regionally varying conflict-related dynamics (Kosyakova et al., 2025).

## Summary and Conclusions

This research note examines the wartime migration patterns and destination choices of Ukrainian men following Russia's invasion in February 2022, utilizing data from the *OneUA* study (Kogan et al., 2022), which were collected at the early phase of the war, during the summer 2022. At that time, international probability-based surveys that included stayers, IDPs and refugees were not possible, not least due to extreme mobility among the Ukrainian population, damaged infrastructure and other challenges of conventional sampling amid armed conflict and forced migration. Therefore, the study employed a non-probability sample recruited via META's social media platforms. This approach likely led to the underrepresentation of certain groups, including individuals experiencing extreme violence, those without access to internet and communication services, and those involved in combat — particularly men. We can only speculate, but given the large numbers of men engaged in fighting, working long shifts in enterprises, or hiding to avoid conscription, Ukrainian male stayers are particularly underrepresented. Male IDPs may also be underrepresented, as some men may have left their homes with their families, who registered collectively as IDPs. Similarly, male refugees might be undercounted if they left the country without legal documentation. Importantly, no precise numbers exist to estimate the degree of underrepresentation in each of these male subgroups. Sampling biases may also be more pronounced among Russian-speaking Ukrainians in Eastern and Southern regions, who may face restrictions or political disincentives to use social media. Despite these challenges, alternatives like national population registers would still fall short in such volatile contexts. Therefore, when studying stayers, internally displaced persons, and refugees, as in this research note, it is advisable

to employ multiple sampling (Ersanilli & Van Der Gaag, 2020; Pötzschke et al., 2022) and diverse data collection methods to include targeted outreach in conflict zones. Despite these limitations, our data provides important insights into migration dynamics and the challenges faced by those most affected by the conflict.

Specifically, the exemptions from conscription under martial law are modestly reflected in the patterns of men's emigration. According to our data, only one category of male respondents were more prompt to take advantage of the conscription exemptions to leave Ukraine: men with three or more children. They show a higher hazard rate of international migration than childless men. In contrast to our expectation, men above conscription age, single fathers, and those with worse health do not show a higher emigration rate. Only in one other category of exempted men — fathers of three children and more — do we observe a higher emigration rate. Contrary to expectations regarding conscription exemptions for men with poor health, it is, in fact, men who left Ukraine at a higher rate who reported increased health satisfaction. The data do not allow us to differentiate between pre-war health status and post-migration health assessments; we acknowledge that post-migration experiences can influence self-reported health, often in contrasting ways: post-migration stress may negatively affect (particularly mental) health, while improved access to healthcare may enhance (especially physical) health outcomes. Migration research points to the well-documented healthy immigrant effect, which refers to the observation that immigrants, particularly recent arrivals, tend to report better health outcomes than the native-born population in the destination country, despite often facing socioeconomic disadvantages (Kennedy et al., 2015). This advantage is typically attributed to selection effects (Ichou & Wallace, 2019), where healthier individuals are more likely to undertake and successfully complete the migration process, and sometimes to protective cultural or behavioral factors. However, this health advantage often diminishes over time due to acculturation, socioeconomic stress, or barriers to healthcare access. Given the pronounced selection among Ukrainian refugees in other domains, such as education or wealth, it is reasonable to assume some degree of positive selection on health as well — rather than substantial improvements in self-reported health satisfaction after migration, especially since our survey was conducted only about 6 months after the war's outbreak. More time would likely be needed for post-migration factors to meaningfully shape health outcomes. Hence, assuming that the men's reported health satisfaction reflects their condition prior to leaving the country, we conclude that healthier men might have used their health as a resource to overcome obstacles, while men with poorer health were more likely to remain behind. However, caution is warranted when interpreting findings based on self-reported health.

In line with the aspirations-capabilities framework, our findings reaffirm the pivotal role of socioeconomic resources in migration decisions (Kohlenberger et al., 2023; Van Tubergen et al., 2024). Higher aspiration and larger capabilities, associated with higher education levels, English proficiency, stronger financial standing, and better health, increase the hazard rate of international migration. These factors operate in a universally similar manner for men and women. Regional factors also influence migration patterns, while notable differences observed across different data analysis methods underscore the need for applying dynamic modelling. Men

exhibited a stronger tendency to emigrate from frontline regions; notably even more so than women. Their aspirations to leave war-affected areas appear to outweigh the obstacles associated with migration.

Taken together, these findings suggest that a significantly higher number of productive and subjectively healthy men may have left Ukraine in the initial months of the Russian invasion than expected under martial law restrictions. There is no reason to believe that this trend has not continued to the present time.

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s12134-025-01297-3>.

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## Declarations

**Data, Code, and Ethical Approval** Replication codes for data preparation and analyses are available at <https://osf.io/cq3vw> (DOI: <https://doi.org/10.17605/OSF.IO/CQ3VW>). Information about the underlying OneUA data can be found at <https://osf.io/tmgcd/>. The data collection is approved by the Ethics Committee of the Faculty of Social and Behavioural Sciences of Utrecht University (file number 22–0226).

**Competing interests** The authors declare no competing interests.

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