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A Brain Drain in Russian Agriculture? Migration Sentiments among Skilled Russian Rural Youth

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Abstract

Urbanisation and the ageing of the rural population contribute to shortages of skilled workers in agricultural sectors worldwide. Migration may potentially alleviate these shortages. This study explores individual decision-making by skilled Russian rural youth with respect to migration, paying special attention to values and attitudes. Using qualitative and quantitative data, we identify major factors that may influence intentions to move abroad. Apart from income differentials, we find that social ties, individual values and attitudes are associated with migration intentions. Agricultural students unwilling to work in agriculture and who dislike the rural lifestyle tend to be motivated to migrate abroad in search of an alternative.

LABOUR MARKETS IN MANY EUROPEAN COUNTRIES ARE UNDER stress due to an insufficient supply of qualified workers and agriculture is no exception. An ageing population and increasing labour mobility have contributed to a situation when enterprises in numerous sectors struggle to find qualified personnel (Rutkowski 2007; Gimpelson *et al.* 2010). The long-standing labour shortages in the IT and healthcare sectors are now paralleled by shortages in other sectors, including agriculture. A recent survey in the east of Germany found that nearly every agricultural enterprise had problems in finding qualified staff (Winge 2015).¹ Another example is large-scale machine-intensive agriculture in Russia that requires trained workers able to operate sophisticated machinery

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¹When referring to agriculture, we define skilled workers as all persons that have obtained at least some formal education and are not seasonal workers.

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and manage large-scale production processes. So, why does the agricultural sector internationally have trouble finding suitably skilled young people?

The processes of rural–urban migration have been extensively studied across the world, starting with the pioneering works of Harris and Todaro (1970) and Lipton (1977). Gaps in incomes and the availability of public goods between rural and urban areas, especially in developing countries, drive people out of villages and into the city; as a result, troubled regions are further depressed. Thus, urbanisation and outmigration exacerbate the problem of a demand and supply mismatch in the agricultural labour market. It is clear that structural adjustments (such as salary increases and improvements in infrastructure) are needed in agriculture and in rural areas in order to attract workers. Moreover, the concentration of agricultural production into large corporate enterprises has reduced the demand for labour in the rural economy.

Following this logic, in Russia we observe a substantial internal movement of citizens towards urbanised centres in the west of the country (White 2007), as better job and education opportunities and availability of public infrastructure drive rural youth out of the rural areas (Andrienko & Guriev 2004; Guriev & Vakulenko 2015). As there are substantial differences between the regions in terms of income and public goods provision levels (Eikeland & Riabova 2002), the incentives to migrate to different cities differ as well. Farrugia (2016) extends the discussion beyond the structural factors outlined above and argues that for rural youth, cities may have a ‘symbolic’ meaning as ‘the place where modern life happens’.

Little is known about the incentives of skilled workers to migrate abroad in an agricultural context. This article addresses the gap. Agriculture continues to employ a substantial number of people in transition countries: in 2010 it accounted for 8% of the Russian workforce, roughly 6.6 million people (RosStat 2016b). Should the international migration incentives of the rural population in transition countries be high, it may exacerbate existing shortages of skilled personnel. In that case, prohibitive moving costs will be a major factor that contributes to keeping the local population in rural areas (Andrienko & Guriev 2004; Kalugina 2014). In Russia, perpetual poverty traps reduce labour force mobility and prevent labour markets from the necessary adjustments *via* labour movement (Guriev & Vakulenko 2015). So far, research has focused on either rural–urban migration or migration between donor and recipient countries, leaving the incentives of rural citizens to migrate abroad largely unexplored. Understanding the numbers of potential migrants, factors influencing their migration intentions and the consequences for rural areas will help us to understand the reasons behind the lack of skilled agricultural labour, making it possible to devise appropriate policies to bridge this gap. On the other hand, there is an emerging literature on how underpopulated European rural areas could benefit from foreign immigration (Kasimis *et al.* 2010; Bayona-i-carrasco & Gil-alonso 2013). It is in the interests of countries targeted by potential migrants to know the number of those willing to emigrate and their profile, in order to assess their potential contribution to the domestic labour force and to integrate newly arrived immigrants. Such information also enables a better understanding of migration intentions in Russia and how this may affect labour markets in the destination countries.

Against this background, the current study explores the individual decision-making of skilled Russian youth in rural areas with respect to migration, paying special attention to values and attitudes. In order to examine their migration incentives, we employ a

triangulation of qualitative and quantitative methods. To answer our research questions, we use qualitative data collected during semi-structured face-to-face interviews with different stakeholders in Moscow and selected Russian regions. In addition, we utilise quantitative survey data of agriculture students in Altai *Krai* (Siberia) and conduct statistical analysis.

Theoretical background

Research on migration is fundamentally interdisciplinary, drawing on economics, sociology, political science, demography, geography, psychology and cultural studies (Brettel & Hollifield 2015). The literature on modelling migration decisions has developed from considering economic ‘push and pull’ factors to incorporating contextual and cognitive aspects. Early migration models pioneered by Harris and Todaro (1970) focused on the fundamental micro-economic driving forces of migration. Later, Stark and Bloom (1985) introduced the New Economics of Labour Migration (NELM) approach that puts the migration decision into a broader context, involving the economic situation of a whole household instead of individuals. Finally, more current literature that builds on the NELM approach explores the links between individual beliefs and migration decision-making. We adopt and develop further Farrugia’s (2016) concept of the ‘mobility imperative’, which, in particular, distinguishes the structural, symbolic and non-representational dimensions of rural youth mobility. Following the development of migration literature, we first provide an overview of the fundamental factors involved in basic individual decision-making regarding migration. We then review theories that put migration into a broader context, following the NELM approach and, lastly, consider the effects of individual values and attitudes.

Fundamental factors

A starting point for our analysis is the Harris and Todaro (1970) model. Its main argument is that individuals maximise their utility by changing locations, with income being a key determinant of utility. Thus, the difference in earning potential between the sending and recipient countries represents the major driving force for migration. Given the developmental gap between rural and urban areas, we first observe migration flows from Russian rural areas towards urbanised centres (Macours & Swinnen 2008; Bednaříková *et al.* 2016). Secondly, the model suggests that we should see people moving towards countries with higher GDP *per capita*. Higher career aspirations on the part of rural youth have been identified as a major driving factor in different international contexts as well (Jamieson 2000; Stockdale 2006). Individuals who leave rural areas appear to be more qualified and better paid, and have better career prospects (Stockdale 2004). In a study of Bulgarian agricultural graduates, Traikova *et al.* (2018) found that higher earnings represented a major incentive to move to Germany.

However, earning differential is not the only factor in a migration decision. For instance, Lee’s (1966) framework of ‘push and pull’ factors offers a way to analyse the aspects of the sending country that drive an individual away (‘push factors’) and the aspects of the receiving country that attract an individual (‘pull factors’). Lack of basic public goods in rural areas (such as inadequate infrastructure or healthcare services, or scarce educational opportunities) may act as ‘push’ factors forcing individuals out of the rural areas (Spoor

2013). For instance, in Russia, vital educational opportunities for young rural inhabitants appear to be very poor when compared to their urban counterparts (Ivolga 2014; Amini & Nivorozhkin 2015). Along these lines, Shibaeva (2010) suggests that the general quality of life in Russian rural areas is commonly perceived to be much lower than in the cities. However, provincial cities with all their advantages may still not be as attractive as the capital or foreign educational opportunities. Although reforms in line with the Bologna Process are taking place, the quality and attractiveness of Russian tertiary education appears to be lagging behind its Western counterparts (Makarov *et al.* 2014; Rodionov *et al.* 2014). This may motivate rural youth to consider foreign countries with better educational possibilities. Furthermore, other public goods, such as the extent to which corruption affects business life or political instability, may represent ‘push’ factors as well (Iontsev *et al.* 2016). Since such factors apply just as much to the city as they do to rural areas, the only way to escape them is to leave the country.

A favourable business environment may be an important factor in individual decisions to stay or to leave. Rural youth who want to pursue an agricultural career either by establishing their own farm or by working for an agricultural enterprise will take the ease of doing business into account. Managing an inherited or newly established farm in an environment of dysfunctional institutions and widespread corruption may generate ‘push’ factors driving young people away from agricultural entrepreneurship. A more stable and predictable institutional environment in the target countries may ‘pull’ rural Russian youth towards a migration decision.

The NELM perspective

An extension of the neoclassical approach to migration incentives analysis is represented by the NELM. Its main idea is to put migration decisions into the broader context of the household as opposed to considering separate individuals (Stark & Bloom 1985; Massey *et al.* 1993). A household as a unit may be in a better position to avoid negative consumption shocks by developing strategies involving migration abroad (Hagen-Zanker 2008). In particular, some household members may be delegated the role of migrants with the expectation that, once they are settled abroad, they support the ones left behind. As a result, parents may mobilise substantial resources to enable their children to study or work abroad. Massey *et al.* (1993) views this as a contractual arrangement between parents and children that reduces risks and provides access to capital. On the aggregate level, remittances from household members represent significant resources for those left behind in the country of origin (Collier 2013).

Households’ income and social status in their home rural area may influence their migration decisions. First, a potential migrant needs to have sufficient skills and monetary capital in order to cover the costs of migration (Dustmann & Okatenko 2014). This excludes those households that are at the bottom of the income distribution. On the other hand, income and social status substantially above the average may reduce the incentives to out-migrate because the income differential between staying and moving is not large enough. On an aggregate level, Rotte and Vogler (1998) found that the probability of outmigration to Germany first increases with a country’s development and then decreases, forming an inverse U-shaped relationship between development and migration. On the

micro-level, Guriev and Vakulenko (2015) find that the intensity of migration flows is higher in the regions with average incomes where satisfaction with living conditions is insufficient but individuals still have sufficient resources to move.

An important question for potential migrants is whether to move to elsewhere within their home country or to move abroad. For Russian rural youth there are several options: move to the nearest urban centre, move to other urban centres across the country, move to Moscow or St Petersburg, or move abroad. Each of these options is associated with certain costs and payoffs of migration. Thus, going to any city in Russia, with the exception of Russia's two major cities, is relatively uncomplicated and does not require significant household resources. However, moving to Moscow and St Petersburg can be more complicated as households have to deal with substantially higher living costs. These two cities have a GDP *per capita* level comparable with leading European countries and five times higher than the average non-mineral extracting province. Russians commonly perceive these cities as a 'foreign country' because they offer better career opportunities and living standards (White 2007). However, foreign countries may be the most attractive destinations for potential migrants. Political stability, democratic freedoms and lower levels of corruption all constitute important potential pull factors. As a result, income and public goods gaps between rural areas and all the destinations listed above generate a clear ranking of preferred destinations, with going abroad at the top.

Once an individual has decided to move abroad, the next decision is to which country. The choice of a destination may be based on existing connections with migrants who have already moved there. In particular, having relatives or friends who can share their experiences with potential migrants can reduce the risks and costs of migration (Massey *et al.* 1993; Collier 2013). With the help of an illustrative model, Collier (2013) demonstrates that given a sufficient income and public goods gap between the countries, the existence of a diaspora in the receiving country may accelerate migration. Thus, Russian households may primarily consider countries with a substantial Russian diaspora.

Cognitive factors

Individual beliefs and attitudes may have a strong impact on migration incentives. Ajzen's (1991) Theory of Planned Behaviour suggests that individual beliefs form an intention to act that in turn translates into action. Intentions to migrate usually result in migration (Card 1982; De Jong 2000; Bjarnason 2014), although not always (Gardner *et al.* 1985). The literature on how norms and beliefs affect migration intentions is only emerging. Shucksmith (2004) finds that the variation among the attitudes of rural youth towards norms and social institutions may determine future decisions to stay or to leave rural areas. In the context of illegal cross-border migration between Mexico and the United States, Ryo (2013) has shown that legal attitudes and moral norms with regard to violating immigration law were associated with migration intentions. Let us examine the most salient norms and attitudes that may influence the individual migration intentions of qualified Russian agricultural workers.

Openness and experiences abroad. Openness towards other cultures and experiences may reduce the costs of migration because an individual is more likely to learn a foreign

language and be more knowledgeable about foreign countries. First, willingness to be immersed in a foreign culture may be determined by inherent individual attitude towards risk (Jaeger *et al.* 2010). Second, the Russian social environment and state-controlled media may generate and sustain stereotypes and fears about potential destination countries.² In particular, the state has been propagating the idea of an ‘external enemy’ attempting to harm Russia (Motyl 2016; Vázquez-Liñán 2017) and, as a result, has generated uncertainty among the population about Western attitudes towards Russians. Individual experiences abroad can destroy these stereotypes and lead to a higher degree of openness towards new things. Existing literature suggests that exposure to a foreign country increases the likelihood of migration by reducing the mental costs of adjustment to a foreign environment (De Jong *et al.* 1986; Bellak *et al.* 2014). This means that experiences abroad (internships abroad, language courses or even tourist visits) may increase the likelihood of an individual seeking to migrate.

Social ties. Prospective migrants may face a trade-off between the loss of social ties in parental municipalities and the cost-mitigating benefits offered by social networks in target countries. First, a move may negatively affect the utility to the individual concerned should connections with family and friends and emotional bonds to parental communities be reduced. There is some evidence that young people who are more socially and emotionally attached to their region of origin are less likely to move away (Bjarnason & Thorlindsson 2006). Farrugia (2016) argues that rural youth may have an emotional or ‘sensuous’ connection with the local landscape and community that may lead to them experiencing discomfort in urban areas. Furthermore, following Social Capital Theory (Putnam 1993, 2000), individual embeddedness in local communities may represent a form of competitive advantage for the local labour market and discourage migration. On the other hand, social connections outside the region of origin may generate additional ‘pull factors’ and broaden individual horizons, thus increasing the possibility that an individual will consider migration (Hanson 2010; Collier 2013). For instance, family, friends or relatives living abroad or even just outside the parental municipality may attract potential migrants to the places where they live (a direct ‘pull’ factor) or make them more open to migration in general.

Career aspirations. Career expectations and aspirations may be an important predictor of migration intentions. Bjarnason and Thorlindsson (2006) have demonstrated that Icelandic rural youths are more likely to intend to move to urban areas if they are more career-oriented. As stated above, urban areas offer better education and employment opportunities for rural Russian youth. Bednářiková *et al.* (2016) find that rural women in Altai Krai are more likely to anticipate leaving their parental rural municipalities because they tend to avoid agricultural careers and aspire to urban service-oriented employment

²For reviews on how media outlets have been consolidated and are controlled by the Russian government see Becker (2005), Gehlbach (2010), Gehlbach and Sonin (2013), Erzikova and Lowrey (2014). Russia was ranked 148th out of 180 countries in 2017. Press Freedom Index developed by ‘Reporters without Borders’ (‘2017 World Press Freedom Index’, Reporters Without Borders, available at: <https://rsf.org/en/ranking/2017>, accessed 2 February 2018).

opportunities. There is, however, little research on how the career aspirations of rural youths influence their intentions to move abroad. Among the exceptions is Hannan (1969), who showed that the social mobility aspirations of Irish adolescents in the 1960s was a good predictor of their migration decisions. In a study by Traikova *et al.* (2018), Bulgarian agricultural specialists considered moving to Germany in order to learn how to manage a farm. In our context, prospective migrants may perceive the agricultural sector and rural areas of a destination country as an attractive career option because of better earning possibilities, working conditions and living standards in rural areas in Western countries. Conversely, they may perceive moving abroad as moving away from agriculture and pursuing career opportunities in other, better paid sectors of the host country.

The migration situation in Russia

General migration trends

The focus of the discussion about migration in Russia has been predominantly on low skilled migration flows from Eastern Europe and Central Asia. With the exception of the Baltic countries, Russia enjoys the highest incomes and living standards of the post-Soviet countries (World Bank 2016). As a result, Russian political discourse has focused on managing legal and illegal migration flows from Central Asian countries (Voronina 2006). Roughly 90% of all the migration flows are related to the former Soviet countries and immigration is by far higher than emigration (Ruchkin 2013). The number of immigrants has been steadily growing in the last several years reaching approximately 600,000 persons per year (RosStat 2016a).

Regional disparities generate substantial internal migration flows, following Tiebout's (1956) hypothesis. Andrienko and Guriev (2004) find that Russians tend to move towards urbanised centres with better public goods provision and career prospects. These trends, however, follow a U-shaped 'migration-income' relationship suggesting that around one third of the Russian population is locked into a poverty trap by low income. The share of rural population in the internal movement of the Russian population is only 23% (RosStat 2015). In general, we observe people moving from the less urbanised Far East Russian regions towards the more urbanised regions of European Russia (RosStat 2019), thus contributing further to the depopulation of Russian rural areas. As mentioned above, Moscow and St Petersburg are the most desired destinations (White 2007).

In the last decade, public discussion has shifted towards the migration of highly qualified Russians abroad (Malakhov 2014). In 2007, for the first time since the collapse of the Soviet Union, more people of working age left the Russian labour force than entered it (Ioffe & Zayonchkovskaya 2010). Thus, RosStat (2015) has forecast that the working age population will shrink by almost 13 million by 2040, which represents 15% of the whole population active on the labour market. The 'brain drain' problem in the research and development (R&D) sector has caused substantial productivity-related losses in GDP (Bronsino 2015; Kuznetsova & Prischep 2016). The agricultural sector is no exception to these trends, as it has been losing labour to other sectors for many years. In particular, Figure 1 shows that more agricultural workers left the sector than entered it between 2005 and 2015. These processes are likely to be caused by both technological progress in

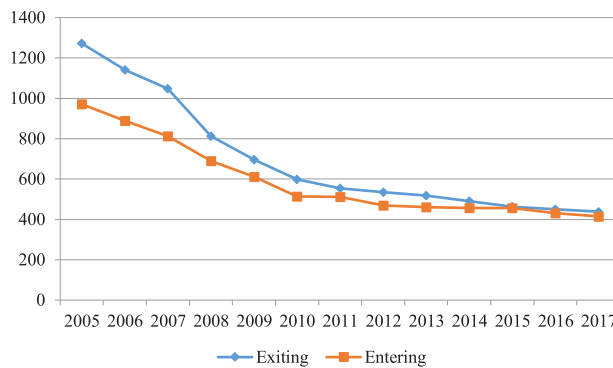


FIGURE 1. NUMBER OF WORKERS EXITING AND ENTERING THE AGRICULTURAL SECTOR
 Source: RosStat (2018).

agriculture and demographic changes in rural areas. We see, however, that both numbers have fallen and that the gap between them is much smaller. Because official statistics do not distinguish between skilled and unskilled agricultural workers, we do not know the losses or deficits of skilled workers. However, Malakhov (2014) argues that agriculture is one of the sectors affected by a ‘brain drain’. Data collected for this study indicate that most large agricultural enterprises face a shortage of qualified staff and actively invest in education and human capital acquisition.

Despite large cross-border movements in Russia, the brain drain problem has not yet been publicly discussed and is not perceived as a pressing issue (Kvartiuk 2015; Iontsev *et al.* 2016). An exception is science, as many scientists have left the country, attracted by better conditions in the West (Korobkov & Zaionchkovskaia 2012; Iontsev *et al.* 2017). The majority of Russian experts interviewed within this study see temporary migration as a positive phenomenon. The literature describes this as a ‘brain gain’: migrants return after several years of work abroad with savings and valuable knowledge and experience (Stark *et al.* 1997; Stark 2004). In addition, our qualitative data indicate that there is little social stigma attached to those who decide to leave Russia, which reduces negative social pressure on potential migrants.

Cross-border migration has been growing to the extent that it could influence the overall demographic situation of Russia. Numbers of both emigrants and immigrants have increased in recent years but a gap between them has persisted because more people have arrived than have left over the years (RosStat 2019). Experts interviewed for this study testified that the need to improve immigration regulation is becoming a publicly discussed issue. However, few legislative initiatives have addressed the issues of the black labour market or Russia’s capacity to attract foreign skilled workers (Ioffe & Zayonchkovskaya 2010; Malakhov 2014).

Germany is still one of the most attractive destinations for Russian migrants. Figure 2 demonstrates the top destination countries in terms of the numbers of people leaving Russia between 1997 and 2018. In the 1990s, Germany and Israel were by far the most significant destination countries, mostly because of diverse programmes allowing for the migration of individuals with roots in the respective countries (RosStat 2019). However, over the years, the number of Russians who wanted to move to those countries decreased

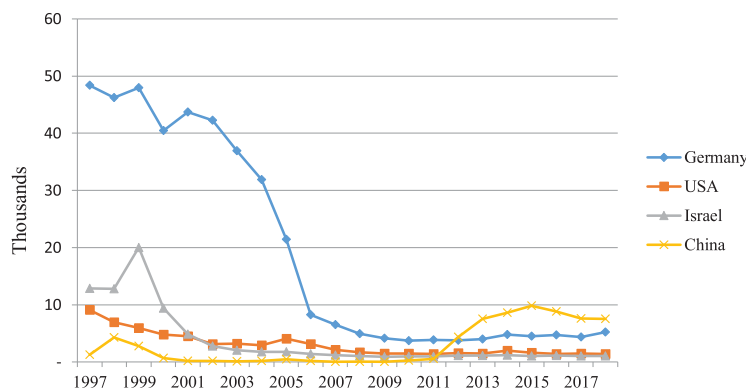


FIGURE 2. TOP DESTINATION COUNTRIES OF RUSSIAN MIGRANTS

Source: RosStat (2019).

and stabilised. Around 4,500 individuals move to Germany every year, 1,400 to the US and 1,000 to Israel (RosStat 2019). Interestingly, since 2011 the number of migrants to China has grown dramatically, reflecting increasing economic ties between the countries arising from trade and investment and mutual oil and gas infrastructure projects (Simola 2016).

Skilled agricultural workers in Russian rural areas

To examine the migration incentives of skilled Russian rural youth, it is important to understand the broader context of the rural economy. Russian rural areas are characterised by a high dispersion of rural settlements, considered a major reason for their sluggish social and economic development, leading to the reduction and fragmentation of rural settlements and the depopulation and desolation of rural areas. These challenges were officially identified by the ‘Strategy of Sustainable Development of Rural Areas of the Russian Federation until 2030’ (Government of Russia 2015). First, most rural settlements have unsustainably low populations. For instance, 12% of villages throughout Russia appear to be completely depopulated (no registered inhabitants) and two thirds have populations of fewer than 200 persons (Government of Russia 2015). Naturally, the rural social infrastructure (such as schools and hospitals) is shrinking, reflecting the outflow of the rural population. As a result, the gap between urban and rural areas is becoming even more substantial. In the past, local public goods were delivered by socialist state enterprises: large-scale Russian agricultural enterprises were both employers and providers of social services to municipalities (Davydova & Franks 2006). The transition from a planned to a market economy during the 1990s made many agricultural companies unprofitable (Kalugina 2014) and the public goods on their balance sheets during the Soviet times were mostly transferred to local municipalities, which are severely underfunded within the current fiscal system (Young & Wilson 2007; Ross 2010). At the same time, many agricultural companies continue to provide some social services and public goods, thereby helping to maintain municipalities’ standard of living (Kalugina 2014). There is still a residual expectation by local inhabitants that agricultural enterprises

should fund local development. As private funding can only help to a limited extent, rural areas are left with deteriorating infrastructure, creating unfavourable living conditions.

Agricultural companies in Russian rural areas face increasing difficulties finding sufficiently skilled workers. A shrinking rural population, ageing population and low birth rates do not allow for generational renewal among skilled rural inhabitants. The attractiveness of traditional jobs in agriculture has diminished, which has led to a significant deficit of specialists and workers in agriculture. This tendency is evident mainly in remote agricultural enterprises (Sergienko *et al.* 2013). Furthermore, Lavrukina (2012) suggests that Russian youths hold stereotyped views of agriculture as a non-prestigious, unprofitable and risky sector, with very few business opportunities.

Labour force mobility in the agricultural sector appears to be low in comparison to other sectors. RosStat suggests that younger individuals tend to find employment outside their home region. The number of individuals engaged in agriculture, hunting and forestry, and working outside their home region was the lowest in 2012 out of all economic activities (RosStat 2018a).

The shortage of qualified agricultural workers represents a significant problem for the Russian agricultural sector. On the national level, there are hardly any systematic initiatives to address the problem. Two strategic documents, the abovementioned ‘Strategy of Sustainable Development of Rural Areas of the Russian Federation up to 2030’ (Government of Russia 2015) and the ‘State Programme of Agriculture Development and Regulation of Markets of Agricultural Products, Raw Materials, and Foodstuffs for 2013–2020’ (Government of Russia 2012), only deal indirectly with the lack of qualified agricultural labour. In the course of our fieldwork, we also found examples of private initiatives by large agricultural enterprises to secure qualified personnel. In particular, they cooperated with agricultural universities, running internship and private educational programmes. For instance, agroholding ‘Ekoniva’ runs a scholarship programme, provides courses for agriculture students and has agreements with numerous universities covering internships. This generates an opportunity to select promising students for future employment. As a result, understanding the factors that affect migration incentives of Russian agriculture students may help to develop policies to retain skilled workers and foster their development.

Data and methods

A major problem faced by this study is the fact that there is very little available statistical data on migration in the Russian agricultural sphere. This required innovative strategies to evaluate migration incentives among rural skilled youth. We triangulated our data sources by using qualitative (focus-group interviews with agriculture students and expert interviews) and quantitative data (a survey of agriculture students) from different regions. This approach allowed us to obtain a more complete picture of the results because the shortcomings of one dataset can be addressed by the other two.

Qualitative data

The data were collected in two waves. First, in early 2014, we conducted a series of semi-structured interviews with key experts in the field of rural labour markets and migration

along with affiliates of Russian agricultural universities. Representatives of research institutes and think tanks dealing with issues of migration were interviewed in Moscow. After that, we chose two regions with relatively large agricultural sectors and leading agricultural universities: Krasnodar and Stavropol *krai*.³ There we interviewed experts on agricultural labour markets and migration along with representatives of two agricultural universities: in Krasnodar and Stavropol. In order to select the respondents, we first mapped all potential interviewees within a given region, ranked them by priority and then requested interviews following the established order. We encountered a general response rate of around 75%. During the first wave of data collection, we conducted a total of ten interviews with the heads of the selected organisations and institutions. All of the interviews were recorded, transcribed and analysed. Semi-structured questionnaires contained sections on the Russian labour market in general, migration intentions of different population categories, the Russian agricultural sector, recent trends in agricultural education, and agriculture's demand in skilled workers. A substantial part of the questionnaire covered current trends in agricultural education. In sum, the first wave of data collection helped us identify a target group of individuals who were highly likely to migrate: students of agricultural universities close to graduation or recent graduates.

With this in mind, the second wave of data collection targeted students in their third or fourth year of studies at Kostroma State Agricultural Academy and Ivanovo State Agricultural Academy.⁴ An important selection criterion was for interviewees to be already engaged in or considering doing an internship in Germany, facilitated by two specific programmes: those applying for internships in Germany while still based at their host universities in Russia were interviewed during the application period in Russia; those already in Germany doing internships were interviewed in Germany. We assumed that an interest in an internship was an indication of higher migration intentions. Students nearing graduation as a rule have thought about their career prospects and started developing their future plans. In total, we conducted six focus-group interviews: four with students already in Germany on their internships and two at the application stage in Kostroma and Ivanovo. The idea behind this sample selection was to differentiate between those who only intended to apply for an internship and those who already had experience of living and working abroad.⁵ This would allow us to observe how intentions to migrate transformed into action. We randomly selected applicants for internships in Germany during the application process in Russia, balancing gender within the samples. In

³Both, Krasnodar *Krai* and Stavropol *Krai* were in the top ten regions by crop production volume in 2017 (Kulistikova 2017). Considering the large economies of these administrative units, their agricultural sectors are disproportionately large in comparison to other provinces. Both regions are major exporters of grain (Uzun & Lerman 2017). The top two agricultural universities (Stavropol State Agricultural University and Trubilin Kuban State Agricultural University) in 2016 were located in these regions (based on a rating by the International Information Agency 'Russia Today' ('Reiting vostrebovannosti vuzov v RF—2017', *Russia Today*, 12 December 2017, available at: <https://vid1.ria.ru/ig/ratings/Agrar-2017.htm>, accessed 6 January 2020)).

⁴We chose these educational institutions because of their established collaboration with German partners. Partnerships with the organisation facilitating the internship allowed us to obtain comparable samples of internship applicants in Russia and interns in Germany.

⁵The samples of the students participating in the focus-group interviews in Russia and in Germany did not intersect.

Germany, we interviewed all the students participating in two internship programmes during the period 2014–2016. Each focus-group interview had nine to 15 participants, allowing a diversity of views and lively discussions. In order to ensure coherence, one person conducted all the interviews using one semi-structured questionnaire that included questions on the students' intentions to migrate, their experiences with temporary migration, their expectations and career plans. On average, the interviews lasted for about two hours and the active involvement of the participants provided a rich dataset. All interviews were recorded, transcribed and analysed.⁶

We followed the methodology introduced by Ritchie and Spencer (1994) during the data analysis. There are several distinct stages within this framework. First, one becomes familiar with the data and identifies a thematic framework. Then, the process is to index transcribed data and chart the concepts occurring within the indexed data. Finally and most importantly, the data are mapped and interpreted. This approach allows for an exploration of the data that may uncover aspects beyond simple hypothesis testing. Since new relationships and concepts can emerge within the analysis, the framework includes conceptual elements of a grounded theory.

Quantitative data

In addition to qualitative data, we conducted a survey among agriculture students in Altai *Krai*. The region is located in southern Siberia, bordering Kazakhstan, and is not too far from major Asian markets. As a predominantly agricultural region, Altai is ranked eighth in total volume of agricultural production among Russian regions (RosStat 2016b). It is one of the most rural regions in Russia, home to 44.5% of the rural population (Administration of Altai *Krai* 2014). The outmigration trend in Altai *Krai*, which suffered a population decline of 0.3% in 2015, is comparable to that of Kostroma *Oblast'* (0.4% decline) and Ivanovo *Oblast'* (0.7% decline) in the same year (RosStat 2016b), where we conducted the focus-group interviews. Agriculture plays a substantial role in the regional economy and all three have well-established agricultural universities. They also share relatively high outmigration trends and comparable values of *per capita* income. We thus considered it a fruitful exercise to analyse all three regions in conjunction, using our different datasets, and to contrast our findings with the insights from the expert interviews in Moscow and in the two leading agricultural regions, Krasnodar and Stavropol.

The regional rural labour market in Altai *Krai* appears to be under extreme stress, with rural areas hosting 77% of all people registered as unemployed in the province and only 19% of registered vacancies in 2014 (Administration of Altai *Krai* 2014). Although the number of workers engaged in the agricultural sector had decreased by 1.2% since 2005, it was still an impressive 19.5% in 2012, above the Russian average of 9.0% (Administration of Altai *Krai* 2014). The shortage of skilled workers in agriculture can be illustrated by the fact that many skilled positions were occupied by either unskilled or semi-skilled migrants from Central Asia. In particular, about 15% of agriculture specialists (such as veterinarians and agronomists) did not have an adequate formal qualification for the tasks they actually performed (Administration of Altai *Krai* 2014).

⁶See Appendix 2 for the list of qualitative interviews conducted within the study.

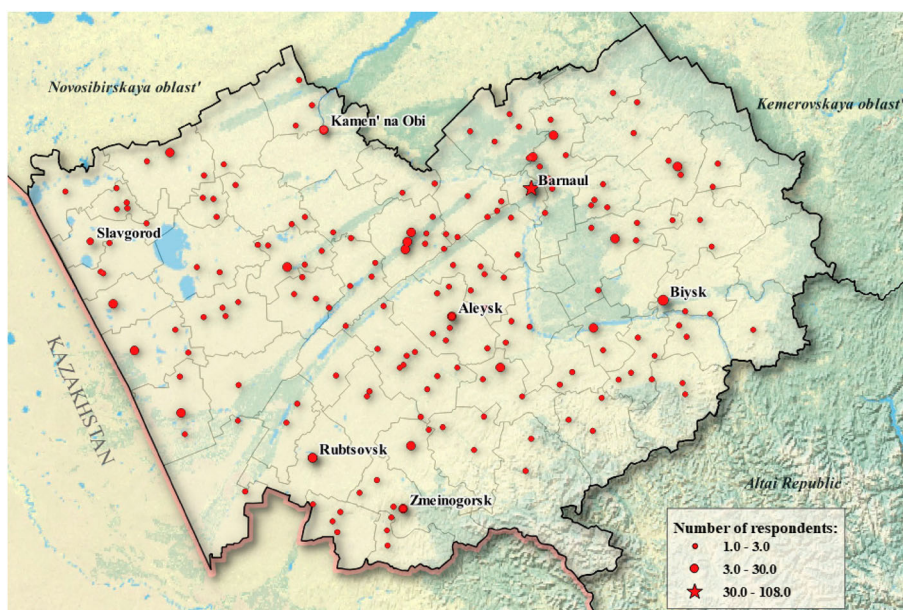


FIGURE 3. SPATIAL DISTRIBUTION OF PARENTAL MUNICIPALITIES WITHIN THE SAMPLE OF STUDENTS OF ALTAI STATE AGRICULTURAL UNIVERSITY

Source: Quantitative data from the student survey.

The survey sample was selected from the relatively large Altai State Agricultural University (ASAU), which had 3,600 full-time students in 2014. For comparison, 32,400 agricultural students graduated Russia-wide in the same year. Established in 1943 in the city of Barnaul, ASAU is one of eight state universities in Altai *Krai*. We targeted all students in their fourth and fifth study years on the assumption that they would already have an idea about their future career and life plans. Structured questionnaires covered students' personal background information, their perceptions about life and the business environment in Altai *Krai*, their willingness to move, and their thoughts regarding their career prospects. After a pre-test with a small group of students in early 2014, the survey was conducted in two waves the same year. As a result, we obtained 474 valid responses with students from the following departments: agronomy (18.3%), biotech (17.7%), economics (22.2%), engineering (16.1%), veterinary science (15.4%) and the natural sciences (10.3%). Figure 3 demonstrates the spatial distribution of parental municipalities of the interviewees across Altai *Krai*. The majority of students within the sample (64.96%) were from rural municipalities with populations of less than 10,000 people. Given that there are only four cities with populations over 50,000 inhabitants within the region, the rest of the students were also likely to be from rural areas. As a result, we consider the sample to be representative of skilled Russian rural youth at the end of their agricultural studies.

We use the survey data to estimate a regression with the following general specification:

$$\text{Pr(MIGR)} = f(\text{Income, PGPerceptions, Values, Ties, Controls})$$

where ‘MIGR’ is an ordinal variable describing different migration destinations, so that the equation expresses the probability (‘Pr’) of an individual declaring the intention to migrate to a certain destination as a function of the right hand variables. The coding of the migration decision is based on the response to the following question: ‘How far are you willing to move from your parental municipality?’. Respondents could answer with four distinct options: ‘within Altai *Krai*’, ‘outside Altai *Krai* excluding Moscow’, ‘Moscow’ and ‘abroad’. Among the explanatory variables we first use the vector ‘income’ reflecting the income and social status of a respondent’s household. Furthermore, we include the vector ‘PGPerceptions’ proxying for a respondent’s view of public goods provision in their respective parental municipality and Altai *Krai* as a whole. With the help of ‘ties’ we control for a respondent’s ties with their parental municipality. Also, as was pointed out previously, individual values may play a role in the decision to migrate and we include them in the regression. Finally, some further controls are introduced. A full list of variables, along with the descriptive statistics, is included in Appendix 1.

Following the logic of related studies on migration intentions (Garasky 2002; Bednaříková *et al.* 2016), we employ several choice models to estimate the parameters of the equation given above. As a baseline, we follow Cameron and Trivedi (2005) using a multinomial Probit that avoids any assumptions about preferences concerning migration destinations. In other words, we assume that individuals do not rank migration outcomes as such. Although it may be a good starting point, there are indications that this assumption may not hold, because on average, Russians clearly prefer to move to Moscow in comparison to other provinces and moving abroad is preferred to any other options (White 2007). As a result, we can rank average preferences regarding migration destinations. Thus, we decided to use ordered Probit models that assume ordered dependent variables. Further, we avoided the proportional-odds assumption and introduced uncertainty about the relevance of the ordering by using the stereotypical Logit model (Anderson 1984). This method is useful when we are unsure about the relevance of ordering or when the choices are indistinguishable. Since stereotypical Logit estimations can be viewed as a compromise between ordered and multinomial models, their results should be preferred to the other models. However, we report the results of all the estimations using marginal effects in order to avoid interpretation challenges.

Results

Fundamental factors and the NELM perspective

Migration sentiments among Russian rural skilled youth appear to be moderate but not trivial. For instance, roughly 20% of the agriculture students from the Altai *Krai* sample reported intending to move abroad. However, all the experts interviewed agreed that the willingness to emigrate within the target group had decreased by 2014. Improvements in the economic situation (at least up until 2014) were mentioned as a common cause for this phenomenon, as illustrated by the following quote:

Not everyone wants to emigrate. There are, of course, some that see their lives, and the lives of their children, in the West. But there is a stratum of people who don’t want to emigrate. That’s why the

‘brain drain’ has partially come to a halt. Here one can earn well too. You can live well here, speak the same language and it’s not necessary to move anywhere.⁷

Interestingly, Russian GDP *per capita* had stayed at about one third of that of developed European countries during the 2000s and early 2010s (World Bank 2016). We observe a similar situation in the gap between average agricultural wages in Russia and, for instance, Germany (Statistisches Bundesamt 2018; RosStat 2018b). Most of the students interviewed during the focus groups were aware of higher earning possibilities in Western countries. These perceptions may have generated incentives to emigrate and pursue better career opportunities.

Some groups of rural Russian young people may be more likely to consider migration abroad, such as the roughly 400,000 ethnic Germans residing in Altai *Krai* and Novosibirsk *Oblast*’ (so-called ‘Russian Germans’).⁸ According to one representative of an agricultural university: ‘in general, the number of students that go abroad to work is rather small. But I can certainly name a couple of examples. ... All the “Russian Germans” that studied at our university emigrated’.⁹ Representatives of these minorities may still possess cultural or family connections with Germany. While many Russian Germans have already emigrated to Germany since the end of the Cold War, there appears to be still a large pool of potential migrants (Savoskul 2016). Given the relatively high share of ‘Russian Germans’ in southern Siberia, average migration incentives there may be higher than in other regions. The same incentive may apply for other minorities in Russia that have similar foreign connections. An existing pool of émigrés from Russia may generate social networks that attract not only representatives of a specific ethnic minority but the broader Russian population as well. Interviews with the International Association of German Culture, the Centre for Migration Research and the Institute of Socio-Political Research indicate that German programmes to repatriate ‘Russian Germans’ also triggered the migration of non-minority representatives.

All the experts interviewed agreed that students from provincial universities were more likely to consider emigration. Education and living expenses are substantially higher in Moscow in comparison to other cities. Students and their parents (who usually finance their studies) from Moscow consider emigration less often. Because of available resources and social status, better-off households typically have a clear understanding about what their children will do after studies in Moscow, or they can afford to send their children to study abroad. Education in regional universities is cheaper and living costs are lower. Consequently, it attracts students with more modest budgets from middle-class households. However, regional labour markets are less robust and, as a result, graduates from provincial universities may be more open to emigration.

Similarly, students from middle-class households are more likely to go abroad. Low-income households simply do not possess the necessary means to cover the costs of

⁷Interview with a representative of the Centre for Migration Research, Moscow, 12 May 2014.

⁸Russian Germans (in German: ‘Russlanddeutsche’) represent an ethnic German minority that formed in eighteenth century Russia. Many of them live in Siberian provinces, predominantly in Altai *Krai* and Omsk *Oblast*’.

⁹Interview with a representative of the Centre of Social Demography and Economic Sociology, Moscow, 13 May 2014.

migration. In addition, these households may be less likely to have the skills necessary to overcome the bureaucratic obstacles involved in migration. Households at the other end of the spectrum are more embedded in their social surroundings and enjoy higher living standards, which discourages them from migration. In this case, neither push nor pull factors apply. Middle-class students, however, can bear the monetary and social costs of migration and have sufficient incentives to seek opportunities to emigrate. One migration expert offers the following explanation:

Successful or locally well-known people have less interest in migration. Social status plays a role here, of course. ... Less successful people simply cannot afford migration. Problems with registration and [the liquidity of rural] real estate are the factors that limit the mobility of the local population.¹⁰

As a result, there may be an inverse U-shaped relationship between the likelihood of migration and income.

Examining the estimation results in Table 1, we find some evidence that higher income is associated with greater intentions to migrate abroad, as income category 3 is significantly positively associated with migration abroad. Unfortunately, our data only map the left tail of the income distribution, which is why we cannot fully reconstruct the inverse-U relationship suggested by the qualitative evidence.

Interestingly, we do not find that the possession of land or a business has any impact on migration intentions. Moreover, variables related to local public goods provision seem unrelated to the dependent variable: that is, perceptions about how difficult it is to do business in a respondent's home municipality and the importance of healthcare for a respondent.

Cognitive factors

Media and social sentiment in Russia may affect individual willingness to migrate. One expert interviewed suggested that the political confrontation between Russia and the West that started in 2014 has generated fears among the Russian population, which negatively affect migration incentives:

Recent international developments have affected people's minds and reduce their willingness to migrate. There is a general perception that Russians are not liked in the West and people don't want to go there. However, this may not be a significant influence for a potential Russian intern going to a Western country to obtain experience.¹¹

We conducted three focus-group interviews with Russian interns in a German agricultural enterprise within one-year intervals from 2014 to 2016. During each consecutive year, we observed a higher frequency of respondents mentioning fears and uncertainty about staying in Western countries for a longer period.

¹⁰Interview with a representative of the Association of Farmers and Agricultural Cooperatives of Russia, Moscow, 16 May 2014.

¹¹Interview with a representative of the Association of Farmers and Agricultural Cooperatives of Russia, Moscow, 16 May 2014.

TABLE 1
ESTIMATIONS OF MIGRATION INTENTIONS USING MULTINOMIAL AND ORDERED PROBIT
MODELS

<i>Independent variables</i>	<i>Multinomial Probit[‡]</i>	<i>Stereotypical Logit</i>	<i>Ordered Probit</i>
<i>Fundamental factors—income and assets</i>			
Income (category 2)	−0.030 (0.415)	0.009 (0.634)	0.005 (0.877)
Income (category 3)	0.059 (0.526)	0.145* (0.052)	0.194*** (0.010)
Parents own land	0.020 (0.737)	−0.008 (0.774)	−0.003 (0.943)
<i>Fundamental factors—public goods perceptions</i>			
Business climate	−0.020 (0.737)	0.013 (0.668)	0.007 (0.881)
Importance of healthcare	−0.015 (0.578)	0.003 (0.834)	−0.003 (0.903)
<i>Cognitive factors—career aspirations</i>			
Importance of career opportunities	0.067** (0.046)	0.030 (0.110)	0.057** (0.023)
Not willing to work in agriculture	0.060 (0.121)	0.047* (0.052)	0.074** (0.013)
Wants to be entrepreneur	0.017 (0.639)	0.004 (0.815)	0.012 (0.683)
<i>Cognitive factors—social ties</i>			
Siblings out of Altai Krai	0.02 (0.957)	0.024 (0.238)	0.033 (0.313)
Friends and relatives	−0.061*** (0.006)	−0.034* (0.066)	−0.060*** (0.001)
Married	−0.023 (0.580)	−0.043** (0.040)	−0.058* (0.057)
From Barnaul	0.084** (0.047)	0.026 (0.344)	0.055* (0.100)
<i>Cognitive factors—openness/other</i>			
Dislike rural lifestyle	0.055* (0.068)	0.039** (0.045)	0.060** (0.011)
Happiness level	0.003 (0.767)	−0.001 (0.858)	0.000 (0.979)
<i>Controls</i>			
Father's education [‡]	−0.022 (0.363)	−0.029* (0.075)	−0.033* (0.073)
Age	−0.005 (0.617)	0.015** (0.040)	0.014* (0.093)
Sex	0.084** (0.031)	−0.021 (0.282)	0.002 (0.950)
Agricultural faculty	0.036 (0.351)	0.007 (0.727)	0.022 (0.447)
<i>N</i>	467	467	467

Notes: *Significant at 0.1; **significant at 0.05; ***significant at 0.01. *P*-values are reported in brackets. Marginal effects are reported and not the coefficients for all specifications. [‡]Results of multinomial Probit estimations are reported for the fourth outcome (moving abroad) only. [‡] Only the father's education was included in an expectation that it will be a better proxy of the household's social status considering conservative models of Russian families (see for instance Lipasova (2016)).

Individual openness towards Western countries appears to increase migration incentives substantially. Both expert and focus-group interviews provided evidence that experiences abroad (internships abroad, language courses) positively affected self-reported willingness to migrate. Experts even suggested that exposure to a foreign environment did not have to

be in a potential migration destination. For students who come from rural areas with limited access to information about the wider world, acquiring personal experience of a foreign country may destroy stereotypes created by the state-controlled Russian media and patriotic university curricula.¹² As one intern pointed out during a focus-group interview:

It is important to get over one's fears in order to go abroad. For us it is easier. We have completed an internship [in Germany] and we understand what one can expect in Germany. This means that in the future it will be easier to move to Germany.¹³

There appeared to be little social stigma attached to potential émigrés. The absence of social pressures to stay can be illustrated by a quote from a representative of a regional university:

There are no global negative attitudes. Some people may actually be envious. But most would probably say 'Good job! He made it'. A lot are indifferent because they only care about their own issues.¹⁴

Individual openness and social ties appeared to determine incentives to migrate among agriculture students in Altai *Krai*. First, according to Table 1, respondents who reported that friends and relatives were important for them were less likely to consider migration. Accordingly, married students were less likely not only to emigrate abroad but also to move to other destinations within Russia. As a result, students with fewer social ties appeared more open to new experiences, like moving abroad. In addition, the estimations reveal that being from Barnaul, the capital of Altai *Krai*, rather than from a rural area was positively and significantly associated with intentions to migrate abroad. This suggests that some basic social capital and access to information and infrastructure is necessary to consider going abroad. Expert interviews confirmed that moving is associated with numerous bureaucratic obstacles and that it may be easier for potential migrants to tackle these obstacles if they are familiar with the city.

Individual values and lifestyle appeared to play a role in individual decision-making about migration. In accordance with our theoretical framework, we found that career-oriented students were more likely to intend to emigrate. This was indicated by positive and significant coefficients of the variable reflecting the importance of career opportunities in Table 1. Interestingly, in the multinomial Probit specification, we found significant coefficients only for the outcome of going abroad, which indicates that students associated migration abroad with better chances to excel in their careers. Furthermore, it is remarkable that both variables—disliking rural lifestyle and unwillingness to work in agriculture—were positively and significantly associated with the probability of intending to migrate abroad. In other words, agriculture students who wanted to migrate abroad did not want to work in agriculture or live in rural areas. This surprising finding contradicts

¹²See Daucé *et al.* (2015) and Le Huérou (2015) for a discussion of the role of patriotism in contemporary Russian society.

¹³A quote from one of the participants of a focus-group with Russian interns conducted at a farm located in Saxony-Anhalt, Germany, 21 August 2014.

¹⁴Interview with a representative of the Stavropol State Agricultural University, Stavropol, 15 May 2014.

the aspirations of Western countries to benefit from the immigration of skilled agriculture graduates who could help meet the rising demand for skilled agriculture workers. Second, this probably reflects a strong bias in Russian society against agriculture as a career objective. Interviewed experts suggested that, given the poor image of agriculture and widespread perceptions of a 'backward' life in rural areas, working in the sector was often associated with failure.¹⁵ In addition, Russia has more agricultural universities than other countries. Curricula in these universities are often oriented towards the non-agricultural job market and represent a second best choice for students. Thus, an agricultural course is not necessarily a sign of vocational commitment. A representative of an agricultural university commented that:

In recent years so many new [agricultural] universities have appeared. Too many probably It is alarming that students study there not because they want to work in the agricultural sector but because they couldn't study anywhere else. Afterwards [after graduation] they may go anywhere except the agricultural sector.¹⁶

As a result, Russian agriculture students may not see agriculture as a fruitful prospective career path. Thus, moving abroad is seen as a next step in career development that excludes agriculture as an employment sector.

Conclusion

Globalisation and labour market integration have intensified the competition for skilled labour not only domestically but also internationally. In many countries, agriculture is one of the sectors under stress because of intensive urbanisation and an ageing population. In Russia, with its predominantly large-scale agriculture, the need for skilled workers is high. Despite a relatively dense network of agricultural universities, we observe an ongoing deficit of qualified personnel. The outflow of qualified youth from Russian rural areas persists, not only to urban centres but abroad. In this study, we attempt to identify the driving forces behind the individual decision-making of rural Russian youth to migrate abroad and to understand what the target countries can expect in terms of the number and characteristics of this potential skilled agricultural workforce.

In general, in the agricultural sphere, the potential number of skilled migrants from Russia appears to be small. As a result of the moderate recovery from the 2008 recession up to the 2015 economic crisis, this number shrank further. Although difficult to quantify, migration flows of Russian skilled youth with agricultural background to destination countries like Germany are likely to be small.

A number of factors limit the incentives to migrate. As predicted by the theory, income is one of the decisive driving forces, but its effect is far from straightforward. Our findings contribute to the emerging literature examining the relationship between income and

¹⁵Interview with representatives of the Center for Migration Research, International Alliance 'Labour Migration', Moscow, 12 May 2014.

¹⁶Interview with a representative of the Russian State Agricultural University (Timiryazev), Moscow, 13 May 2014.

migration intentions (Mckenzie & Rapoport 2007; Dustmann & Okatenko 2014; Guriev & Vakulenko 2015). In particular, we find an inverse U-shaped relationship between income and the probability of moving abroad. Young people representing the middle class (from households with sufficient incomes and human capital) are more likely to migrate. This self-selection may benefit the target countries because it will ensure that individuals with higher human capital are more likely to move. However, the question remains as to whether they will choose to work agriculture after arriving in their preferred country.

Attempting to address this question, this article contributes to a growing literature that highlights the importance of norms and attitudes as factors that shape individual willingness to migrate abroad. We find that more career-oriented students who do not want to work in agriculture and who do not like the rural lifestyle are more likely to have higher migration incentives. In Russia, agriculture and the rural lifestyle are broadly associated with a backward way of life and may even symbolise failure in the sense used by Farrugia (2016); thus, agriculture is not seen as an attractive career. In addition, agricultural universities are often not the first choice but represent a 'backup' option for many students. As a result, young rural Russians may associate migration abroad with an opportunity to work in better paid, non-agricultural sectors. Given this situation, Western European target countries should have moderate expectations about employing these potential Russian migrants to make up for the shortfall of qualified labour in the agricultural sector.

Our findings suggest that the individual migration decision-making is not only affected by networks in the destination countries, but also by social ties in their parental communities. In accordance with existing literature (Hanson 2010; Collier 2013), we find that those who have personal or cultural connections outside their parental communities appear more likely to consider migration. As a result, groups such as the 'Russian Germans' are likelier candidates to move to Germany in comparison to others. On the other hand, students who report a higher attachment to friends and relatives are less likely to move abroad. As a result, social embeddedness in parental communities may mitigate the incentives to migrate.

Going beyond existing discussions on networks as 'pull and push factors', we find that the information environment and the resulting fears about the West in the home country are an important predictor of individual migration intentions. In particular, Russia's increasing control of media and international isolation contribute to growing distrust towards potential Western destination countries and fears about acceptance there. Those young people who have had previous experiences abroad before are far more likely to consider migration in the future. These experiences help reduce the psychic cost of leaving the parental region by undermining existing stereotypes and reducing fears about host societies.

What are the implications of these findings? First, the low mobility of less affluent rural individuals may create poverty traps, resulting in the retention of the least skilled individuals in rural areas. More mobile members of the middle class are more likely to leave rural areas, thus contributing to a rural brain drain and, because the rich are likelier to stay, increasing rural inequality. Accompanying urbanisation and demographic processes create a vicious circle, putting Russian labour markets under more stress. These unfavourable processes can be mitigated by improving conditions for rural entrepreneurship and reducing the gap in the levels of public goods provision between rural and urban areas. In addition, promoting the rural way of life and agriculture as a modern sector may lessen negative


sentiments towards agriculture. Should the situation in parental municipalities improve, return migration after a short- or medium-term working experience abroad may invigorate local human capital and stimulate growth.

Second, the results call for the reform of the inflated network of Russian agricultural universities. Many students choose to study in agricultural universities because of the lower acceptance requirements, not because they are interested in an agricultural career. As a result, we found that a substantial number of agricultural students were not interested in agriculture at all. Reducing the number of agricultural universities and improving the quality of education they offer, along with promoting agriculture as an attractive career choice may help the situation.

Finally, Russian migrants are unlikely to resolve the lack of skilled workers in Western European agriculture. The numbers of potential migrants are modest, and they do not appear interested in working in agriculture. The agricultural sector in Western Europe may have to source migrants from other destinations or make structural adjustments within the sector to improve incentives for the domestic labour force.

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Appendix 1. Descriptive statistics

<i>Variable</i>	<i>Description</i>	<i>Mean/ Percentage</i>	<i>Std Deviation</i>
<i>Dependent variable</i>			
Willingness to move	Willingness to move within Altai <i>Krai</i> (1), outside Altai <i>Krai</i> , excluding Moscow (2), to Moscow (3), abroad (4)	41.65% 34.25% 4.44% 19.66%	
<i>Independent variables</i>			
<i>Fundamental factors—income</i>			
Income	≤R20,000	52.23%	
	R20,001–R60,001	43.10%	
	≥R60,001	4.67%	
Parents own land	Parents own land (1) or not (0)	0.105	0.308
<i>Fundamental factors—public goods perceptions</i>			
Business climate	Respondent does not see problems doing business in rural area of origin (1) or otherwise (0)	0.095	0.293
Importance of healthcare	Importance of healthcare in a migration decision (1–4 scale)	3.325	0.730
<i>Cognitive factors—career aspirations</i>			
Importance of carrier opportunities	Importance of career opportunities in a migration decision (1–4 scale)	3.494	0.648
Not willing to work in agriculture	Does not want to work in agriculture (1) or otherwise (0)	0.329	0.470
Wants to be an entrepreneur	Wants to establish own business (1) or otherwise (0)	0.373	0.484
<i>Cognitive factors—social ties</i>			
Siblings outside of Altai <i>Krai</i>	Respondent has siblings living outside Altai <i>Krai</i> (1) or otherwise (0)	0.738	0.440
Friends and relatives	Importance of friends and relatives in a migration decision (1–4 scale)	2.831	0.836
Single status	Respondent is married (1) or otherwise (0)	0.338	0.473
From Barnaul	Respondent is from Barnaul (1) or otherwise (0)	0.228	0.420
<i>Cognitive factors—openness/other</i>			
Dislike rural lifestyle	1–3 scale	2.180	0.611
Happiness level	1–10 scale	7.032	2.128
<i>Controls</i>			
Father's education*	High school (1), technical (2), higher (3) education	2.095	0.740
Age	Respondent's age	20.306	1.779
Sex	Respondent's sex: male (1), female (0)	0.403	0.491
Agricultural faculty	Respondent studies at agricultural faculty (1) and otherwise (0)	0.625	0.485

Note: *Only the father's education was included in an expectation that it will be a better proxy of the household's social status considering conservative models of Russian families (see for instance Lipasova (2016)).

Appendix 2. List of qualitative interviews conducted

<i>No.</i>	<i>Organisation</i>	<i>Place</i>	<i>Date</i>
Expert interviews			
1.	Centre for Migration Research	Moscow, Russia	12 May 2014
2.	International Alliance 'Labour Migration'	Moscow, Russia	12 May 2014
3.	International Association of German Culture	Moscow, Russia	12 May 2014
4.	Department on Human Resources and Employment, Russian State Agrarian University (Timiryazev)	Moscow, Russia	13 May 2014
5.	Centre of Social Demography and Economic Sociology and Institute of Socio-Political Research	Moscow, Russia	13 May 2014
6.	Agro-industrial Association of Kuban and 'Russian Alliance of Rural Youth'	Krasnodar, Russia	14 May 2014
7.	Kuban Association of Farmers and Agricultural Cooperatives (AKKOR)	Krasnodar, Russia	14 May 2014
8.	Employment Centre, Stavropol State Agricultural University	Stavropol, Russia	15 May 2014
9.	International Relations Department, Stavropol State Agricultural University	Stavropol, Russia	15 May 2014
10.	Association of Farmers and Agricultural Cooperatives of Russia, AKKOR	Moscow, Russia	16 May 2017
Focus-group interviews with interns			
11.	Focus-group interview with Russian interns in a German agricultural enterprise	Halle region, Germany	21 August 2014
12.	Focus-group interview with Russian interns in a German agricultural enterprise	Halle region, Germany	26 August 2015
13.	First focus-group interview with Russian interns from various German enterprises (two months into internship)	Wedemark, Germany	2 June 2016
14.	Second focus-group interview with Russian interns from various German enterprises (two months into internship)	Wedemark, Germany	2 June 2016
Focus-group interviews with applicants for an internship in Germany			
15.	Focus-group interview with Russian students applying for an internship in Germany	Kostroma, Russia	29 October 2015
16.	Focus-group interview with Russian students applying for an internship in Germany	Ivanovo, Russia	30 October 2015