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From Asylum Seekers to Illegal Migrants: The intention to overstay of Afghan asylum seekers in Germany

Romuald Méango, May Khourshed and Diana López-Falcón

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Abstract:

Asylum seekers with a rejected application account for three out of five illegal migrants in Germany. This research sheds some light on the motives behind the decision of asylum seekers to overstay. We conducted a survey on a population of Afghan asylum seekers in three large German cities and elicited subjective beliefs about the chance of obtaining the right to stay in Germany, the perceived risk of deportation and outcomes related to the legal status. We included a Randomized Controlled Trial that provided information about the actual proportion of deportation to half of the population. Furthermore, we elicited the intention to overstay under different hypothetical scenarios. According to the data we collected, Afghan asylum seekers have upwardly biased beliefs about the risk of deportation. Providing information about the actual proportion of deportation in the population does not have a sizable effect on those beliefs or on the intention to overstay. The perceived chance of obtaining the legal right to stay is a key determinant of the intention to overstay. Moreover, we also document substantial variations of subjective beliefs and intention to overstay across cities.

Zusammenfassung:

Asylsuchende mit einem abgelehnten Gesuch stellen drei von fünf illegalen Migranten in Deutschland. Diese Untersuchung wirft ein Licht auf die Motive hinter der Entscheidung von Asylsuchenden, trotzdem im Land zu verbleiben. Hierzu wurde eine Umfrage unter afghanischen Asylsuchenden in drei deutschen Großstädten durchgeführt, um ihre subjektiven Überzeugungen zur Chance, das Bleiberecht in Deutschland zu erhalten, das wahrgenommene Risiko einer Abschiebung und Erfolgsaussichten struktureller Integration im Zusammenhang mit dem Rechtsstatus zu erheben. Dies beinhaltete eine randomisierte kontrollierte Studie, in der die Hälfte der Teilnehmer Informationen über den tatsächlichen Anteil an Abschiebungen erhielten. Darüber hinaus wurde die Verweilabsicht unter verschiedenen hypothetischen Szenarien erhoben. Nach den von uns gesammelten Daten haben afghanische Asylsuchende nach oben verzerrte Überzeugungen hinsichtlich des Risikos einer Abschiebung. Die Bereitstellung von Informationen über den tatsächlichen Anteil der Abschiebung an der Bevölkerung hat keinen nennenswerten Einfluss auf diese Überzeugungen oder auf die Absicht, länger zu bleiben. Die wahrgenommene Chance, das legale Bleiberecht zu erhalten, ist ein entscheidender Faktor für die Verweilabsicht. Darüber hinaus finden wir erhebliche Unterschiede in subjektiven Überzeugungen und Verweilabsichten zwischen den untersuchten Städten.

Keywords:

Subjective expectations; Intention to overstay; Asylum seekers; Germany; Afghanistan

JEL Classification:

D84, F22, J18, J61, O15

From Asylum Seekers to Illegal Migrants: The intention to overstay of Afghan asylum seekers in Germany *

Romuald Méango, May Khourshed and Diana López-Falcón

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Abstract

Asylum seekers with a rejected application account for three out of five illegal migrants in Germany. This research sheds some light on the motives behind the decision of asylum seekers to overstay. We conducted a survey on a population of Afghan asylum seekers in three large German cities and elicited subjective beliefs about the chance of obtaining the right to stay in Germany, the perceived risk of deportation and outcomes related to the legal status. We included a Randomized Controlled Trial that provided information about the actual proportion of deportation to half of the population. Furthermore, we elicited the intention to overstay under different hypothetical scenarios. According to the data we collected, Afghan asylum seekers have upwardly biased beliefs about the risk of deportation. Providing information about the actual proportion of deportation in the population does not have a sizable effect on those beliefs or on the intention to overstay. The perceived chance of obtaining the legal right to stay is a key determinant of the intention to overstay. Moreover, we also document substantial variations of subjective beliefs and intention to overstay across cities.

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*Correspondence address: Munich Center for the Economics of Ageing. Amalienstr.33, 80799 Munich, Germany.Tel: +49 89 38602 327.E-mail: meango@mea.mpisoc.mpg.de. This research was supported by the Max Planck Society for the advancement of Science research initiative "The Challenges of Migration and Integration", Grant M.FI.A.SOZ08002. The authors thank Andreas Fabritius, Reem Hassan, Inara Mahkamova, Mehbobullah Zazai, and Tessa LoRiggio for excellent research assistance. We also want to thank Axel Börsch-Supan, Christian Hunkler, Mike Hurd, Andreas Steinmayr, and participants to various seminars for useful comments. IRB approval was obtained from the Max Planck Society for the advancement of Science. The usual disclaimer applies.

1 Introduction

Between the years 2014 and 2016, the Federal Republic of Germany registered nearly 1.1 million applications for asylum, the highest number in its history. As of 2019, more than 1.84 million asylum seekers were accounted for in the country, with Syria, Afghanistan and Iraq being the top three sending countries. The prospect for recognition and the length of the asylum procedure strongly depend on applicant's country of origin. For example, of the total number of applications submitted by Syrian asylum seekers between 2014 and 2019, only 4% had been rejected in the initial application phase, whereas the proportion was 49% for Afghan asylum seekers.[1] As for the final decisions, after initial and follow-up applications, 96% of Syrians had received a protection status as of 2019, whereas only 66% among Afghans received similar statuses. Thus, for some groups of asylum seekers, the outcome of an asylum procedure involves a large amount of uncertainty.

Those asylum seekers who see their applications rejected must then decide whether to leave the country, as they are legally obliged, or remain without legal right to stay and face the risk of deportation. An increasing number of asylum seekers with a rejected application have remained in Germany in the past years for several reasons: on the one hand, many asylum seekers do not want to leave voluntarily; on the other hand, many of them cannot be deported because they do not have a passport and/or their country of origin or nationality has not been confirmed beyond doubt. In addition, there is often little interest on the part of the countries of origin in enabling the forced return of their citizens. Moreover, deportation to countries with ongoing armed conflicts like Syria and Afghanistan has become a contentious political issue.[2]

Of those asylum seekers with a rejected application who stay, close to 80% obtain a rather precarious status referred to as "toleration" (or *Duldung* in German) until their return is enforced or their toleration status renewed. This status does not grant them the right to stay in the long run but allow them to work legally and receive social assistance to

[1] In Germany asylum seeking applicants can file an initial application for asylum and if rejected file up to two subsequent follow-up requests on technical grounds.

[2] FAZ (2019) "SPD-Innenminister gegen Ausweitung von Abschiebungen", last accessed on October 15, 2020 at https://www.faz.net/aktuell/politik/inland/spd-innenminister-gegen-ausweitung-von-abschiebungen-16233710.html.

cover their basic needs. Importantly, those who remained in the country may eventually obtain the legal right to stay.

The aim of this research is to shed some light on the motives behind the decision of asylum seekers with a rejected application to overstay. In particular, it highlights the importance of expectations with respect to the legal status and related outcomes. For this purpose, we introduced a module on subjective expectations in a survey conducted during the second half of 2019 on Afghan migrants in three large cities in Germany (Berlin, Hamburg and Munich) with the highest number of Afghan citizens. The focus on Afghanistan is motivated by the fact that Afghan citizens represent the second largest group of asylum seekers in Germany and the largest group of foreigners with a legal obligation to leave Germany.

The survey elicited subjective beliefs of Afghan asylum seekers about the chance of obtaining the right to stay in Germany (RtS) and the perceived risk of deportation. It also collected information on expected income depending on legal status, as well as expected access to social services (education, social assistance, health service) and the labor market. It included a Randomized Controlled Trial (RCT) that provided information about the actual proportion of deportation for the Afghan population in Germany to half of the sample. Finally, the survey elicited the intention to overstay under different hypothetical scenarios.

We find that Afghan asylum seekers, on average, believe that one out of two applications are granted some form of protection. This is below the actual number (two out of three) but is close to the proportion of positive decisions in the initial application phase. Respondents report, on average, 68% chance of obtaining the RtS when their current status expires. Importantly, the variance in this statistic is large, reflecting that beliefs are very heterogeneous in the population. In particular, beliefs differ significantly by the city of residence, with the most pessimistic beliefs held by residents in Munich.

Afghan asylum seekers have upwardly biased beliefs about the risk of deportation. On average, they are 20 percentage points (pp) higher than the actual numbers. The control group expected this risk to increase in the coming years. The RCT aimed at finding

out whether these beliefs would respond to information about the actual proportion of deportation. The experiment showed that providing information about the actual deportation proportion had neither a sizable effect on the expectation nor on the intention to overstay.

Intention to overstay are, on average, relatively high in the population, with respondents stating a 64% chance to overstay, were they to be denied the RtS. The empirical analysis suggests a strong association between intention and subjective beliefs about outcomes. In particular, beliefs about the chance of becoming regularized, if one were to overstay, significantly influence the intention to overstay.

To further investigate this effect, the survey included a set of questions that exogenously varied the perceived chance of obtaining the RtS between three hypothetical values (very low, medium and very high). This allows measuring the effect of this variable on the intention to overstay while controlling for individual-specific unobserved characteristics. A one-standard-deviation increase from the mean raises the intention to overstay by 10 pp. Furthermore, the option to be regularized explains more than 20% of the intention to stay for one half of the population. Here, as before, the elasticity of the decision to overstay differs significantly by the city of residence. Asylum seekers residing in Munich are considerably less willing to overstay when the chance of obtaining the RtS decreases.

This paper relates to the rapidly growing literature about individual subjective expectations (see, e.g., Manski, 2004), that has investigated several investment decisions and behaviors, including birth control choice (Delavande, 2008), risky sexual behavior (Delavande and Kohler, 2016), education choice (Jensen, 2010; Attanasio and Kaufmann, 2014), choice of college major (Wiswall and Zafar, 2015), and career decisions (Van der Klaauw, 2012). Within the literature on migration, the subjective expectation framework has been used to understand migrants' expectations about outcomes at destination (e.g. McKenzie et al., 2013; Hoxhaj, 2015). We contribute to this literature by studying the subjective beliefs of asylum seekers, and put them in relation with their decision to overstay.

This paper also contributes to the research on the determinants of irregular migration.

Part of this literature is interested in the effect of migration policies on the flow of undocumented persons, e.g.Orrenius and Zavodny (2003); Gathmann (2008); Amuedo-Dorantes et al. (2013). Another stream of this line of research looks at the effect of individual expectations, (e.g. Mbaye, 2014; Bah and Batista, 2018). Our paper is closely related to the latter, in particular to Bah and Batista (2018) who provide experimental evidence about the importance of the perceived risk of dying *en route* and the perceived chance to be regularized for the intention to migrate irregularly. Whereas most of these contributions look at economic migrants, our focus is on a population of asylum seekers who have already arrived in the host country, yet face a significant risk of illegal stay.[3] To the best of our knowledge, this is the first paper to look at the overstay decision of asylum seekers using a subjective expectation framework.

For a large-scale quantitative survey, focusing on a population at risk of undocumented stay is easier than focusing on a population of undocumented migrants. Indeed, undocumented migrants qualify as a "hard-to-reach" population (see Tyldum and Johnston, 2014). A similar approach has become common in surveys on (internal and international) migration that elicit intention to migrate from populations in source countries, e.g., Gallup World Poll (Gallup, 2018). Unlike most studies that include only categorical answer options, our study records these intentions as probabilistic measures. Moreover, we study possibilities of this decision under different hypothetical scenarios.

Our work is also related to the role of information in determining migration decisions. Shrestha (2020) provides information about mortality rates during the migration journey to potential migrant workers in Nepal. Dunsch et al. (2019) and Bah et al. (2019) show a video documentary to potential irregular migrants in West Africa. In our case, we provide information about the actual proportion of deportation in the population, but do not find this information to be very effective in changing expectations. Indeed, it has only a limited effect on subsequent migration intentions.

Finally, this paper relates to the literature on (illegal) migrants' human capital investment, such as education, language or return migration. Mukhopadhyay (2019)

[3]Asylum seekers with a rejected application form a large proportion of migrants with a legal obligation to leave in Germany (about 152 thousand from an estimated total of 250 thousand in 2019).

finds a link between the probability of deportation and the education decision of illegal migrants. Khourshed and Méango (2020) show that Syrian refugees in Germany who expect higher economic returns from German language acquisition are more likely to invest in it. Coniglio et al. (2009) find that the willingness to return among economic immigrants in Italy is higher among skilled-migrants, because of the lower expected return of illegal migration. The findings in this paper point out the substantial differences in subjective beliefs across cities. Because these beliefs are important for the investment decisions of asylum seekers, cities where migrants expect a low chance of future regularization, such as Munich, might eventually have a lower absolute number of illegal stayers. However, these stayers might acquire less skills.

The rest of the paper is organized as follows: Section 2 gives a brief description of the context of asylum migration in Germany. Section 3 presents sample characteristics. Section 4 describes subjective beliefs in the sample. Section 5 presents the results of the RCT. Section 6 describes intentions to overstay and the effect of the chance to be regularized on it. Finally, section 7 concludes the paper with a discussion on the implications of the findings.

2 Context

This section provides a brief contextual description of the asylum migration to Germany and the motivation of the survey.[4] According to the German Federal Statistical Office, the number of asylum seekers living in Germany has tripled between 2013 and 2019. from a little more than 615 thousand in 2013, it spiked to more than 1.84 million in 2019, with a peak of near 1.1 million registrations between 2014 and 2016. With 214 thousand registered asylum seekers as of 2019, Afghanistan is the second most important source country, before Irak (193 thousand) and after Syria (587 thousand). At the height of the asylum migrant crisis, about 150 thousand Afghans entered Germany (between 2014 and 2016).

As of 2019, 15% of all asylum seekers in Germany were granted a permanent status,

[4]All sources for official statistics are collected in appendix A.

59% a temporary status, and 26% were still in a precarious status (pending application, pending appeal or rejected application - *ungesicherten Status*). The prospect of recognition strongly depends on the country of origin. As of 2019, 96% of asylum seekers from Syria received some form of protective status (with 3% receiving permanent protection), while only 1% were legally obliged to leave the country. In contrast, for asylum seekers from Afghanistan, 66% were given protection statuses (with 7.6% of those receiving a permanent status), while 12% were legally obliged to leave. Moreover, the proportion of asylum seekers with a secure status also varies across federal states, e.g. as of 2019, Bavaria 68%, Hamburg 80%, Berlin 82%. This spatial inequality has been linked to the political orientation of the ruling party, with federal states governed by the largest left-wing party (SPD) being less likely to deny an application (Schneider et al., 2020). There is also considerable gender bias, e.g., as of 2019, 59% of Afghan males received a positive decision compared to 81% of Afghan females.

Asylum seekers with a rejected application are required to leave within a period of maximum 30 days and may receive financial support if they decide to leave voluntarily. If they do not comply, they face the risk of deportation. In practice though, deportation is rarely enforced. For example, in 2019, only 391 of the nearly 25 thousand asylum seekers from Afghanistan with a legal obligation to leave Germany were returned to their home country, and 582 were sent to another European country under the Dublin-agreement. Additionally, eight out of 10 Afghans who are legally obliged to leave Germany benefit from a temporary suspension of deportation or toleration status (*vorübergehende Aussetzung der Abschiebung* or more simply *Duldung*). This (precarious) status is issued when there exists obstacles to deportation and can be valid for a time period of a few days to a few months (usually not exceeding six months).[5] A toleration does not provide the legal right to stay in Germany, has no guarantee of renewal and can be revoked under several circumstances. Whereas, the decision on an asylum application (positive or negative) is

[5]Opposing obstacles to deportations include, for example the right to safeguard the marital and family life or the assertion of illness-related dangers caused by deportation. A deportation is also impossible for factual reasons if travel documents are missing, the destination country refuses admission or traffic routes are interrupted. The immigration authorities also have the possibility of a discretionary tolerance for urgent humanitarian issues, personal reasons, or significant public interest (e.g. immediately upcoming surgery or the completion of a school or training year).

taken at the federal level by the Federal Office for Migration and Refugees (*Bundesamt für Migration und Flüchtlinge*), the issuance of a status (including toleration) and the enforcement of deportation orders fall mainly under the jurisdiction of federal states and lower level administrations.

Except under special circumstances, foreigners who have held a toleration status for at least three months can work in Germany if they receive a job offer and obtain approval of the Federal Employment Agency. According to the Asylum Seekers Benefits Act (*Asylbeweberleistunggesetz*), asylum seekers with a toleration status are entitled to receive social assistance to cover basic needs (food, accommodation, heating, health care, household consumption goods) during the first 15 months of their status. This assistance is provided either in kind, if living in group housing, or as cash payment if living in private housing. After 15 months under a toleration status, the migrant is entitled to the same level of social assistance as any legal resident.

Circumstances under which a toleration status can be transformed into a legal residence permit include the completion of a qualified apprenticeship or study, or employment as a skilled worker for a two- to three-year uninterrupted period. Furthermore, in accordance with German migration law, if a foreigner with a toleration status cannot leave the country for a longer period of time for reasons beyond their control, he or she may be granted a residence permit for humanitarian reasons. However, this usually requires that the foreigner holds a valid passport and has integrated into the local living conditions. This last condition is usually understood as showing proof of language proficiency and being able to provide for one's needs.

Within this context, the "Survey on Migrants' Expectations in Germany" was designed to understand the decision of Afghan asylum seekers to stay in Germany without the legal right to stay or exit to another country. Indeed, departure of Afghan citizens from Germany are not rare. An estimated 5,580 Afghans left Germany in 2019, including 1,766 cases where the asylum seeker had been denied protection. These numbers should be seen as lower bounds, as the exit is not always registered (e.g., when traveling by land).

The survey elicited subjective expectations among Afghan migrants residing in three

large German cities. The elicited expectations can be divided in to three categories: (i) subjective beliefs about population averages, (ii) subjective beliefs about individual outcomes if leaving or staying, and (iii) intention to overstay expressed as probability measures. The main objective of the empirical analysis is to address three questions:

- What are the beliefs of Afghan migrants with respect to the outcome of asylum applications and other outcomes related to legal status?
- Are those beliefs malleable? In particular, the belief about the risk of deportation?
- What are the determinants of the intention to overstay? In particular, how important is the prospect of obtaining the RtS in the future?

3 Survey Operations and Sample Characteristics

The target population is composed of persons with an Afghan citizenship, aged 18 or over, who arrived in Germany for the first time in 2014 or after, and live in one of the urban areas of the study. Because of budget constraint, we targeted the three urban areas with the highest numbers of Afghan citizens: Berlin, Hamburg, Munich.

A random sample of the population of interest fulfilling the eligibility criteria was drawn from the population registry (*Einwohnermeldeamt Melderegister*). The individuals were invited by post to take an interview in one of several possible locations in the urban centers of the study. Participation was compensated with 20 Euros in cash.

The target population partly consisted of migrants with no legal documentation. This is by nature a "hard-to-reach population" because no registry data is available to sample them. Furthermore, anecdotal evidence suggested that migrants who are legally obliged to leave Germany do not reside at the place where registered in order to avoid overnight deportation. To reach this sub-population, the survey utilized the Respondent-Driven Sampling (RDS) strategy developed by Heckathorn (1997). Participants with a completed interview were asked to recruit up to three acquaintances who satisfy the eligibility criteria. A successful recruiter was compensated 10 Euros for inviting one person, 15 Euros for inviting two persons, and 20 Euros for inviting three persons.

Before and during fieldwork, the survey team contacted with influential members of the Afghan community (Imams, NGO's, social workers, community leaders, etc.) in each city to raise awareness about the study. Due to the nature of the target population and the questions asked, the survey was anonymous and no information regarding the individual's identity was kept. A coupon system, which uniquely identified participants and their recruits, was implemented to record the recruitment chains while protecting the respondents' identity at all time. To avoid multiple participation by the same individual, a staff member was assigned at the interview center on a permanent base, and conducted a screening before the start of an interview.

	Berlin	Hamburg	Munich	Total
Pop.(est.)	6,485	7,337	3,006	16,828
Sample	534	226	264	1,024

Note: Target population estimates calculated from excerpt of the "Ausländerzentralregister" accessed on 31.07.2018

Table 3.1: Number of Afghan citizens with initial entry from 2014 onward from 18 years of age - Sample size

Fieldwork was carried out in the second half of 2019 for three months in each city.[6] Computer assisted personal interviews were conducted by native speaking interviewers in Dari and Pashto, the two main languages spoken in Afghanistan. Table 3.1 shows the estimated size of the target population and the sample size in each city. Overall, the recruitment was quite successful in Berlin and Munich but less so in Hamburg. Still, in each city, the sample represents a non-negligible part of the population of interest.

The survey included questions that required the respondent to state subjective probabilities as a number between 0 and 100. The module on subjective expectations included a training phase where respondents were trained to state subjective expectation with a number between 0 and 100. For example, respondents were asked to state how many out of 100 Afghans they thought could speak Dari, the most common language spoken in Afghanistan. Then the interviewer was asked to help respondents rephrase the answer

[6]From 28/05/2019 until 31/08/2019 in Munich, from 19/09/2019 until 14/12/2019 in Berlin and Hamburg.

in the form of a probability, and a counter-probability.[7] The same exercise was repeated for the proportion of Afghan migrants to Europe who came to Germany, and the proportion of Afghan migrants who obtain the right to stay in Germany. The questions are complemented with visual aids to facilitate understanding.[8]

Table 3.2 shows some demographic characteristics by city of residence. The sample is dominated by males, consistent with the resident population. At the local level, however, women are slightly under-represented in Munich and over-represented in Hamburg and Berlin. The sample population is young (median age 28), and less educated than Germans with close to two third of respondents having obtained a lower secondary education or below. The average length of stay in Germany is 3.6 years. The three most important stated emigration motives are war, political reasons, and persecution.

The bottom part of Table 3.2 presents additional characteristics related to the current stay in Germany. Nearly six out of 10 respondents have received some form of protection. This statistic varies considerably across city and is slightly lower than official statistics in 2019 available from the Federal Statistical Office at the federal state level: Berlin 5.6 (official statistics 6.8), Hamburg 7.4 (8.1), Munich 5.2 (6.8 in Bavaria).[9] This is to be expected though, because, contrary to the population register that accounts for all Afghan citizens, our sample is restricted to those who arrived recently and, thus, are less likely to have a final decision on their status.

According to the results, access to work and education in Germany show a gender component. Occupational level in Germany is low and unequal across genders (26% for men, 4.5% for women), so is participation into education in Germany (23% for men, 18% for women), predominately in vocational education. Four out of five of the respondents have been or are currently enrolled in a German language class. Note that attendance of German classes is lowest in Munich, while the occupation rate is highest in this city. Overall, the sample characteristics are similar with those of the IAB-BAMF-SOEP survey

[7]The interviewer asked:(1) "So the percent chance that a person from Afghanistan can speak Dari is:... " (2) "It means that the percent chance that a person from Afghanistan cannot speak Dari is:... "

[8]The complete Questionnaire module is available under https://www.dropbox.com/sh/fb8ytdovg0scboz/AADgwGi5AQ53lsRq68dEc8Sfa?dl=0.

[9]Berlin and Hamburg are city states. See Appendix A for a link to the source data.

	Berlin	Hamburg	Munich	Total
Female	0.40	0.49	0.24	0.38
	(0.49)	(0.50)	(0.43)	(0.49)
Age	31.16	34.02	30.38	31.60
	(12.11)	(13.35)	(11.25)	(12.25)
Low-Skilled	0.69	0.57	0.62	0.65
	(0.46)	(0.50)	(0.49)	(0.48)
Years since arrival	3.47	3.75	3.68	3.59
	(1.37)	(1.25)	(0.94)	(1.25)
Sampled from register	0.22	0.31	0.22	0.24
	(0.41)	(0.47)	(0.41)	(0.43)
Prev. employed	0.54	0.50	0.49	0.52
	(0.50)	(0.50)	(0.50)	(0.50)
Secure Status	0.53	0.73	0.51	0.57
	(0.50)	(0.44)	(0.50)	(0.50)
Obtained educ. in DE	0.30	0.27	0.30	0.30
	(0.46)	(0.45)	(0.46)	(0.46)
No German class	0.16	0.15	0.28	0.19
	(0.37)	(0.36)	(0.45)	(0.39)
Germ. class (up to A2)	0.39	0.49	0.35	0.40
	(0.49)	(0.50)	(0.48)	(0.49)
Germ. class (B1 and more)	0.44	0.36	0.37	0.41
	(0.50)	(0.48)	(0.48)	(0.49)
Curr. Occupied	0.13	0.16	0.32	0.18
	(0.33)	(0.37)	(0.47)	(0.39)

Note: Mean values calculated on non-missing observations. Berlin N=534, Hamburg N=226, Munich N=264, Total N= 1,024. Standard deviation in parentheses. "Female" equals one if the respondent identifies as a female. "Low-skilled" equals one if the respondent has studied at most until lower secondary education. "Prev. employed" refers to a previous employment held before migrating to Germany. "Secure status" equals one if the respondent has received some form of temporary or permanent protection status. German class level B1 is the lower intermediate level from the Common European Framework of Reference for Languages (CEFR) standard, A2 the upper beginner level.

Table 3.2: Sample characteristics by city

(Brücker et al., 2018), a representative survey of asylum seekers in Germany. To sum up, the sample reflects well key characteristics of the population of interest.

4 Subjective beliefs

This section provides a description of beliefs with respect to the outcome of asylum applications and other outcomes related to legal status. At the population level, the survey elicited respondents' beliefs with respect to the proportion of Afghans who obtain the RtS in Germany and the proportion of Afghans who were deported in the last years. Questions were phrased as follows:

Q1. *Not all people from Afghanistan who come to Germany obtain the right to stay in Germany. Out of 100 persons from Afghanistan who arrived in Germany, how many do you think obtain the right to stay in Germany?*

Q2. *Out of 100 Afghans who arrived recently in Germany, how many do you think were deported (forcibly removed) and sent back to Afghanistan by the German authorities in the last past years?*

At the individual level, the survey elicited respondents' beliefs with respect to the chance of obtaining the RtS in Germany for the next three years, the chance of obtaining the RtS in three-year time conditional on staying in Germany without the RtS, and the probability to be deported conditional on not obtaining the RtS. Specifically, respondents were presented with the following hypothetical situations:
Imagine that your current status expires.

Q3. *What do you think is the percent chance that you would obtain the legal right to stay in Germany for the next three years?*

Q4. *You are not given the right to stay in Germany. But you decide to stay in Germany for the next three years. What do you think is the percent chance that you would obtain the legal right to stay in Germany by the end of the three years?*

	Berlin	Hamburg	Munich	Total sample
Obtain RtS. population (Q1)	46.61	53.94	35.29	45.29
	(21.21)	(19.13)	(22.55)	(22.11)
Deport. past population (Q2)	21.52	21.31	20.34	21.25
	(18.77)	(17.09)	(16.33)	(18.02)
Obtain RtS (Q3)	73.20	70.11	55.96	68.01
	(26.39)	(23.87)	(27.30)	(27.05)
Obt. RtS. after 3 yrs w/o RtS (Q4)	66.13	68.07	51.21	62.66
	(27.97)	(25.72)	(26.94)	(28.03)
Be deported if no RtS (Q5)	32.53	37.06	48.60	37.72
	(32.73)	(26.80)	(24.78)	(30.27)

Notes: Mean values calculated on non-missing observations. Berlin N=534, Hamburg N=226, Munich N=264, Total N= 1,024.Standard deviation in parentheses.

Table 4.1: Subjective Beliefs by City

Q5. *You live in Germany but you do not have the legal right to stay in Germany. What do you think is the percent chance that you would be sent back to Afghanistan within the following three years*

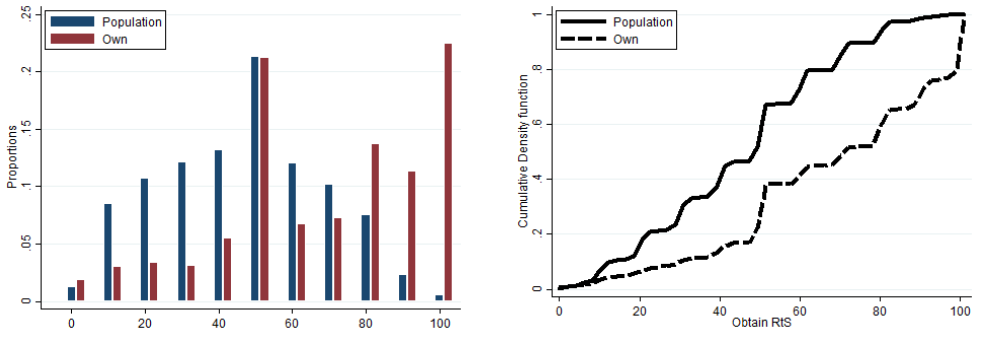
The 3+3-year window was selected for three reasons. First, it provides a time-horizon not too distant to form realistic expectations. Second, most protection statuses have a maximum validity of three years. Third, conversations with experts suggested that exit from a toleration status could be expected in a window of five to eight years.

Table 4.1 presents the average and standard deviation for each city and the whole sample. On average, respondents expect that around 45 out of 100 Afghans who arrived in Germany receive the RtS. This average belief is closer to the official statistics of positive decision in the initial application (51) than to the level of final decisions as of 2019 (66). There is significant variation across cities with respondents in Munich displaying most pessimism. The standard deviations are large, which also suggests a significant variation between individual beliefs. The first quartile of the sample distribution is at 30, and the third at 60.

With respect to their own chance of obtaining the RtS if the current status were to expire, respondents expect, on average, a 68% chance. This represents a 22 percentage

points (pp) difference with the expected population average. As before, beliefs in Munich are the most pessimistic with a 14 to 17 pp difference between it and the other two cities. The average belief in Munich (56/100) is 12 pp below the proportion of asylum seekers with some protection in Bavaria in 2019 (68), and slightly higher than this statistic in 2017 (51). The average belief in Berlin is slightly above the 2019 official proportion (72 v.s. 68), and is below in Hamburg (70 v.s. 80). Standard deviations are also large here, suggesting significant variations between individual beliefs.

Beliefs about the chance of obtaining the RtS conditional on overstaying three years are slightly lower (by 6 pp, on average) than the own chance of obtaining the RtS if the current status were to expire. Nevertheless, the same city patterns persist as with the elicited chance of obtaining the RtS.



(a) Histogram

(b) Conditional distribution functions (CDFs)

Figure 4.1: Chance of obtaining the legal right to stay

Figure 4.1 compares the distribution of answers to Q1 and Q3. Compared to the distribution of belief about the average population, the distribution relative to the own chance is shifted to the right, which implies that a large proportion have high expectation to obtain the RtS. In particular, a little more than 21% report a 100% chance.

Beliefs about the proportion of Afghans forcibly removed and sent back to Afghanistan and the chance to be deported when not obtaining the RtS are upwardly biased. On average, respondents believe that one out of five Afghans has been sent back to Afghanistan in the past few years, and that there is a 37.74% chance to be deported conditional on not obtaining the RtS. As discussed in section 2, deportation to Afghanistan is a rare event.

	RtS (pop)	RtS now	Deport. (pop.)	Deport.
Female	9.28***	3.65**	5.43***	-2.71
	(1.40)	(1.79)	(1.36)	(2.05)
Years of education	-0.18	0.10	-0.15	-0.15
	(0.12)	(0.16)	(0.12)	(0.18)
Secure Status	6.42***	8.32***	-2.42*	-1.46
	(1.42)	(1.82)	(1.41)	(2.08)
Age	0.11*	0.15**	-0.11**	-0.29***
	(0.05)	(0.07)	(0.05)	(0.08)
Hamburg	14.80***	11.09***	-0.14	-10.16***
	(1.89)	(2.42)	(2.13)	(2.77)
Berlin	9.95***	16.27***	0.39	-15.82***
	(1.54)	(1.99)	(1.61)	(2.28)
Observations	1002	984	800	989
R^2	0.186	0.112	0.030	0.068

Notes: Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.The sub-sample for the regression "Deport.(pop)" exclude the observation for one interviewer who did not understand/follow the instructions.

Table 4.2: Regression Analyses of Subjective Beliefs

In 2019, only 1.8 out of 1000 Afghan asylum seekers and 1.6 out of 100 Afghan asylum seekers with a rejected asylum application were deported.

Table 4.2 presents a linear regression of the beliefs on the individual characteristics: gender, years of education, legal status, age, and city of residence. Women are more optimistic than men about the chance of obtaining the RtS, which is consistent with the fact that, proportionally, more women obtain a protection status than men. Individuals with an already secure status are more optimistic, which also aligns with the nature of their status. Older individuals appear more optimistic about the chance of obtaining the RtS and less pessimistic about the risk of being deported. The regression analysis confirms the importance of the city of residence on the beliefs held by the respondents.

The survey elicited further beliefs about outcomes in Germany, depending on the legal status of the individual. Table 4.3 presents the average expected monthly income with or without RtS.[10] With the RtS, respondents expect to earn, on average, 1,666 Euros

[10]The exact question was: "For each of the three situations, on average, what is the monthly income

	Berlin	Hamburg	Munich	Total sample
Income with RtS	1666.91	1727.51	1610.59	1665.06
	(745.5)	(565.9)	(519.2)	(653.7)
Income w/o RtS	1148.26	1383.08	1103.41	1191.28
	(647.5)	(486.8)	(534.1)	(590.3)
Decr. Acc. Educ.	0.51	0.71	0.59	0.57
	(0.500)	(0.453)	(0.492)	(0.495)
Decr. Acc. lab. mrkt.	0.53	0.68	0.73	0.62
	(0.500)	(0.466)	(0.445)	(0.487)
Decr. Acc. Soc. Ass.	0.82	0.85	0.85	0.83
	(0.383)	(0.358)	(0.360)	(0.372)
Decr. Acc. health	0.44	0.72	0.58	0.54
	(0.497)	(0.449)	(0.495)	(0.499)

Notes: Mean values calculated on non-missing observations. Berlin N=534, Hamburg N=226, Munich N=264, Total N= 1,024.Standard deviation in parentheses.“income with / w/o RtS” average income expected in the three next years with the corresponding legal status.Distribution is trimmed at 95 percentile.“Decr.Acc.” corresponds to a decrease of the perceived access from the current status to the situation w/o RtS in the corresponding domain.

Table 4.3: Subjective Beliefs about further outcomes by City

per month. This amount is lowest in Munich (1,612 Euros), which also displays the lowest variance, and highest in Hamburg (1,731 Euros) Without RtS, respondents expect on average 1,193 Euros. As before the average is lowest in Munich (1,108 Euros), and highest in Hamburg (1,386 Euros). These numbers imply an expected monthly return to legalization between 350 Euros and 500 Euros on average, depending on the city. According to Brücker et al. (2020), the average monthly gross income of refugees who entered Germany between 2013 and 2016 was 1,282 Euros in 2018, and 1,863 Euros for those in a full-time occupation. This represents between 54% and 89% of the average gross income of comparable German workforce, depending on the category considered. Therefore, the average elicited beliefs about income sound plausible.

Finally, the survey elicited beliefs about the perceived access to social services and the labor market given their current status and in case of not obtaining the RtS. The perceived access is measured for four dimensions (education, social assistance, health services and the labor market) on a likert-scale: full access, somewhat limited access, very limited access, no access at all. Table 4.3 shows the proportion of individual who expect a decrease of their access to social services, were they not to obtain the RtS in the next years. A decrease is expected most often for the access to social assistance (82% of respondents), followed by labor market (60%). These proportions vary noticeably between cities but without a clear ordering.

To sum up, we find important differences in beliefs not only across individuals, but also across cities. Beliefs about the proportion of Afghan who obtain the RtS are on average lower than the available official statistics, but respondents are optimistic about their own chance of obtaining the RtS. The beliefs about the prevalence of deportation are noticeably higher than actual rates. Finally, individuals perceive a clear return to obtaining the RtS, both pecuniary and through access to social services and the labor market.

(including wage, government subsidies, etc.) that you expect you will have in the next 3 years (in Euros)? Situation 1: Legal right to stay in Germany, Situation 2: without legal right to stay in Germany."

5 Malleability of Subjective beliefs about deportation

As discussed before, respondents in our sample overstate the probability to be deported and sent back to their home country by the authorities. Therein, the survey included an RCT to measure the effect of providing an official statistic on migrants' beliefs. A treatment group was informed of the past proportion of Afghan migrants who had been deported from Germany to Afghanistan. The control group received no information. Our interest lies in the difference of beliefs about the perceived future rate of deportation and the perceived own chance to be deported between the treatment and the control group.[11]

After the training questions, respondents were asked about their perception of the proportion of deportation in the last years (Q4). Afterwards, half of the respondents, randomly selected by the survey instrument, were provided with information about the actual statistics on the deportation level for the Afghan population in the past 3 years. More precisely, the treated group received the following information:

QI *There are official statistics about the number of Afghans that were deported from Germany to Afghanistan.From December 2016 to May 2019, in total 565 Afghan were deported from Germany by the German Authorities. This means about one Afghan out of 100 Afghans who arrived in Germany since 2016.*

The respondents who received information QI were also asked if they found this statistic reliable, answers were binary (yes/no). Subjective expectations about the perceived proportion of the population, which would be deported in the next few years were elicited directly after the information was given, for treated group, and for all respondents. Expectations about the own deportation conditional on not obtaining the RtS were elicited after a few minutes. Figure B.1, in the appendix, presents the flow-chart of the intervention.

Table 5.1 presents the average treatment effect of the shown information on the beliefs

[11] A pre-analysis plan of the RCT has been registered under the AEA RCT registry (ID: AEARCTR-0004828) and can be found under the following link: https://www.socialscienceregistry.org/trials/4828.

	Treated	Non-treated	TE	p-value
Berlin (N=532)				
Deport.past (population)	20.80	22.51	-1.71	0.31
Deport.next 3 yrs (population)	19.24	27.25	-8.01	0.00
Be deported (if no RtS)	32.02	31.04	0.98	0.73
Stay w/o RtS	71.29	67.10	4.19	0.19
Hamburg (N=135)				
Deport.past (population)	20.62	22.21	-1.59	0.60
Deport.next 3 yrs (population)	27.65	23.35	4.30	0.34
Be deported (if no RtS)	30.97	28.78	2.19	0.65
Stay w/o RtS	66.36	61.73	4.63	0.39
Munich (N=162)				
Deport.past (population)	21.52	18.65	2.87	0.26
Deport.next 3 yrs (population)	19.33	29.88	-10.55	0.00
Be deported (if no RtS)	43.89	47.21	-3.32	0.42
Stay w/o RtS	53.34	52.60	0.75	0.88

Note: P-value calculated for a t-test on the non-missing values.

Table 5.1: Treatment effects by city

for the future deportation proportion in the population and own probability to be deported conditional on not obtaining the RtS.[12] As a placebo, beliefs about past proportion of deportations are also displayed. This belief was elicited prior to the treatment and shows that the randomization worked reasonably well in each city. It also shows these expectations are very high, 20 pp larger than the true value, in the population.

In the control group, expectations about future deportations are high. Respondents expect an increase in the rate of deportation in the next few years. The averages range from 23.35 percent chance in Hamburg to 29.88 percent chance in Berlin. The information treatment leads to a decrease in expected number of deported in the future in Berlin and Munich, -10pp and -8pp respectively. However, these expectations remain rather high, given the reported official statistics. In Hamburg, where the lowest probabilities in the control group are given, the information does not seem to affect average beliefs. If anything, it suggests a confirmation bias. Non-parametric equality of median tests and

[12]We exclude the observations related to one interviewer from whom it was found later during the fieldwork that he did not understand/follow the instructions of the RCT in Hamburg. N decreases in Munich as the treatment was introduced a few weeks after the beginning of the fieldwork.

regressions controlling for individual characteristics and interviewer fixed effects yield qualitatively similar results.

A limitation of the above results is that the measured effects can be the result of an "enumerator demand effect", that is respondents are providing lower answer because the interviewer corrected them a few seconds before. Yet, expectations about one's own deportation are elicited a few minutes after the provision of information and should not suffer from bias. The elicited expectation do not differ between treatment and control group. Therefore, it seems that the information has only limited importance for individual beliefs. Appendix C provides additional evidence of this finding by calculating the importance of the provided information in a Bayesian-updating model. Furthermore, we also find that intention to overstay (see next section) is slightly higher in the treatment group, but the difference is not statistically significant.

In summary, beliefs about the risk of deportation are upwardly biased in the population and do not seem to respond to the provision of official statistics.[13]

6 Intention to stay

This section focuses on the intention to overstay in Germany. It investigates its relation with subjective beliefs about the chance of obtaining the RtS in the future, the perceived chance of deportation and the outcomes if in the presence of no RtS.

The survey elicited the intention to stay in Germany with the following questions:

Q6 *How many more years would you like to stay in Germany?*

Q7 *What do you think is the percent chance that you would stay in Germany for the next 3 years?*

Q8 *Imagine that your current status expired. You are not given the right to stay in Germany for the next 3 years. What do you think is the percent chance that you would decide to stay in Germany for the next 3 years?*

[13] The question about trust in the information does not seem to convey meaningful information. Whether an individual states that he trusts the information or not appears uncorrelated with the difference between the stated belief about past and future deportation rates.

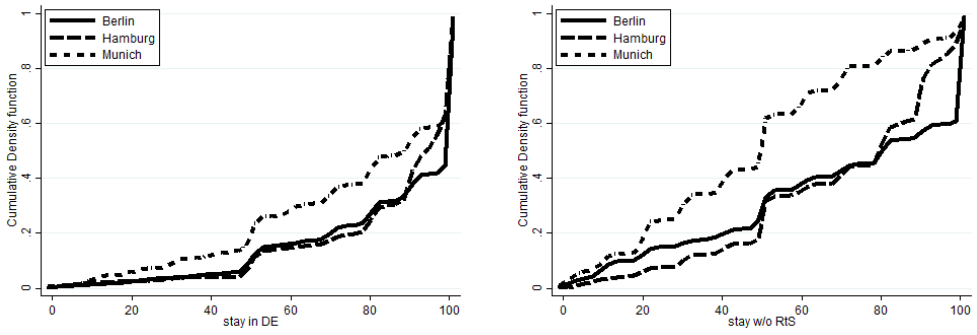
	Berlin	Hamburg	Munich	Total sample
Stay in DE (Q7)	85.51	85.38	76.17	83.07
	(22.66)	(21.32)	(27.76)	(24.12)
Stay w/o RtS (Q8)	69.75	69.90	48.73	64.36
	(32.59)	(26.29)	(28.33)	(31.53)

Notes: Mean values calculated on non-missing observations. Berlin N=534, Hamburg N=226, Munich N=264, Total N= 1,024.Standard deviation in parentheses.

Table 6.1: Intention to stay in Germany by City

6.1 Descriptive statistics

In answering question $Q6$, three out of four respondents report that they would like to stay forever in Germany. Of the remaining quarter, 57% would like to stay until conditions in the home country improve, 9% for less than 10 years, and 17% for 10 to 30 years. The distribution is very similar across the three cities. Accordingly, the willingness to stay in Germany is high.



(a) Stay ($Q7$) (b) Stay w/o RtS ($Q8$)

Figure 6.1: Conditional density functions of intention to stay and intention to stay conditional on not receiving the RtS by city

Table 6.1 presents the average for the whole sample, and by city, for the answers to $Q7$ and $Q8$. Figure 6.1 presents the conditional density functions (CDF) by city. The stated chance of staying in Germany for the next three years is high, with a mean of 83.04. A large proportion of the population (46.9%) reports a 100% chance to stay in the next three years. The average chance is lowest in Munich, 76.05%. The CDF is first-order stochastically dominated by the two other cities. Consequently, respondents in Munich are the most pessimistic about their chance to stay in the next three years. This is consistent

with their more pessimistic beliefs about the chance of obtaining the RtS and the chance to be deported if not obtaining the RtS.

The intention to stay without RtS is 19 pp lower than the unconditional probability to stay. Fewer respondents state a 100% chance to stay (24.72%), from which four out of five reside in Berlin. Once again, Munich's CDF is markedly dominated by the CDFs in the two other cities and the difference in average is about 21 pp. Nearly four out of 10 residents in Berlin report a 100% chance to stay without RtS.

Of note is that reported alternative destinations, if one would decide to exit Germany, are very diverse. The top three countries mentioned are France (14%), Canada (11%) and the United Kingdom (8%). Four out of 10 respondents mention a European country other than Germany, while only 7% mention returning to Afghanistan.

6.2 Determinants of the intention to stay without RtS

This section relates the intention to stay without RtS with three types of variables:

(i) individual characteristics: gender, age, legal status, time since arrival in the EU and city of residence;

(ii) subjective beliefs about legal status and deportation: chance of obtaining the RtS if staying for three years without the RtS, chance to be deported conditional on not obtaining the RtS;

(iii) expected outcomes in Germany: monthly expected income without the RtS, and the wage return from obtaining a legal status - that is the difference between the income with the RtS and the income without the RtS - as well as indicators of the perceived access to social service without the RtS.[14]

Table 6.2 displays the result of two specifications, where the control variables are introduced progressively. The first specification (OLS(1) and OLS(2)) is a linear regression of the stated chance of stay without RtS on the control variables. In this specification, gender,

[14]Each indicator variable is equal to one if the individual expect a full access or a somewhat limited access.

	OLS (1)	OLS (2)	LAD (1)	LAD (2)
Female=1	4.60**	4.23**	1.40*	1.52***
	(2.06)	(1.97)	(0.28)	(0.19)
Low-Skilled	-1.91	-1.35	0.84	0.85
	(1.98)	(1.93)	(0.15)	(0.12)
Age	0.18**	0.03	1.01*	1.01*
	(0.08)	(0.07)	(0.01)	(0.00)
Secure Status	6.42***	5.87***	1.62***	1.51***
	(2.15)	(2.08)	(0.26)	(0.21)
Years since arrival	-1.68**	-1.00	0.82*	0.90*
	(0.81)	(0.82)	(0.09)	(0.06)
Hamburg	18.15***	10.45***	3.93***	1.11
	(2.57)	(2.43)	(0.63)	(0.13)
Berlin	19.97***	11.08***	5.06***	1.69**
	(2.30)	(2.52)	(1.73)	(0.43)
Obt. RtS. after 3 yrs w/o RtS (Q4)		0.44***		1.04***
		(0.04)		(0.00)
Be deported if no RtS (Q5)		-0.08**		0.99***
		(0.04)		(0.00)
Income w/o RtS (in 100 EUR)		0.49***		1.06***
		(0.16)		(0.01)
Wage return Legal status (in 100 EUR)		0.27		1.03*
		(0.20)		(0.02)
Acc. Educ. (w/o RtS)=1		0.30		1.06
		(1.93)		(0.12)
Acc. lab. mrkt. (w/o RtS)=1		2.19		1.03
		(2.09)		(0.13)
Acc. Soc. Ass. (w/o RtS)=1		-1.16		0.92
		(2.04)		(0.12)
Acc. health (w/o RtS)=1		5.94***		1.37**
		(2.22)		(0.20)
Constant	46.17***	18.08***	0.92	0.08***
	(4.26)	(5.61)	(0.46)	(0.03)
Observations	980	826	980	826
R^2	0.114	0.317		

Notes: Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Coefficients of LAD(1) and LAD(2) in exponentiated form.

Table 6.2: Regression analyses of intention to stay w/o RtS

legal status security and the city of residence of the respondent are the main individual characteristics explaining the intention to stay. Women have higher intention to stay (4 to 5 points), while respondents with a precarious legal status have on average 5 to 6 points lower intention to stay. The effect of the city of residence is sizable even when controlling for other individual characteristics and subjective beliefs.

When asked about obtaining the RtS, the subjective beliefs considering overstaying their permit for three years have statistically and economically significant effects on their intentions.

The perceived chance of obtaining the RtS if one overstays have a statistically and economically significant effect on intention to overstay. One point increase in the former, increases the latter by 0.43 pp. That is, a one-standard-deviation increase (+28.4 pp) from the mean increases intention to stay by 12.51 pp (=28.44×0.44). Subjective beliefs about deportation have a five times weaker effect. A one-standard-deviation increase (+30.5 pp) from the mean increases intention to overstay by 2.4 pp. Expectations about income in Germany without RtS have a statistically and economically significant effect on intention to overstay. A 100 Euros (0.15 sd) increase of expected income from its mean increases by 0.50 pp the intention to overstay. The income returns to regularization have a weaker effect. Perceived access to health services seems to be an important determinant of the decision to stay without the RtS, with those who expect a full or somewhat limited access to health care being by 5.8 points more willing to overstay.

The second specification is a Least-absolute Deviation estimation of the log-odds of the chance to stay without RtS on the same control variables (LAD (1) and LAD (2) in Table 6.2). This specification is more robust to extreme observations (0 and 100) and rounding, as argued by Blass et al. (2010).[15] The coefficients are exponentiated to ease interpretation as they yield the change in odds ratio. For example, the last column (LAD (2)) suggests that women have 51% (1.51 -1) higher odds of staying than men, whereas respondents with a secure legal status have 46% (1.46 -1) higher odds of staying than their counterparts with a precarious legal status. Furthermore, a one point increase in

[15]Extreme values are replaced with slightly larger/lower ones: 0 by 0.1 and 100 by 99.9.

the perceived chance of obtaining the RtS if one overstays increases the odds by 4%. In this specification, the city indicators are no longer significantly different from zero after inclusion of subjective beliefs, although their magnitude is relatively large.

The conclusions of both specifications are similar and point to the importance of subjective beliefs; in particular, they stress the importance of perceived chance of becoming regularized in the future. We have interpreted the above results as causal effects for ease of exposition. However, there might exist unobservable characteristics influencing both the intention to overstay and individual subjective beliefs, e.g., individual traits, or private information, as suggested by Wiswall and Zafar (2015). Thus, it is more accurate to talk about association between variables.

The next section further investigates the effect of the expected chance of obtaining the RtS on the intention to overstay by exploiting within-individual variations.

6.3 Causal effects

To understand the effect of the expected chance of obtaining the RtS on the intention to overstay, the respondents are presented with hypothetical scenarios about the chance of regularization. The survey includes the following questions:

> Q9 ,Q10,Q11. *Imagine that your current status expired. You are not given the right to stay in Germany, but if you stay you will obtain with q% chance the right to stay in Germany at the end of the 3 years. What do you think is the percent chance that you would then decide to stay in Germany for the next 3 years?*

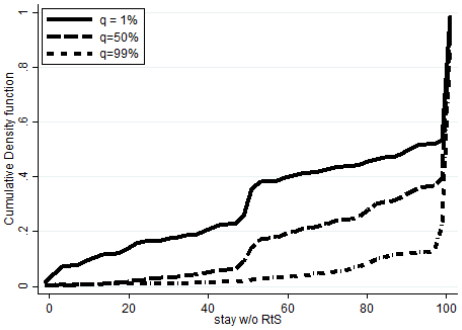
The parameter q varies to take value 1, 50 and 99. All respondents received all three questions. The order of question was randomly assigned by the survey instrument.

Table D.1, in the appendix, presents the average of answers to questions $Q9$ to $Q11$, and Figure 6.2 represents the CDFs by city. Intention to overstay is very large when $q = 99$, with an average of 93.23 percent chance. The CDFs in this case are highly-skewed as 68% of the sample answer 100, and close to 90% give answers of 75 or above. This pattern is very consistent across all cities. Berlin has the highest proportion of "100%"

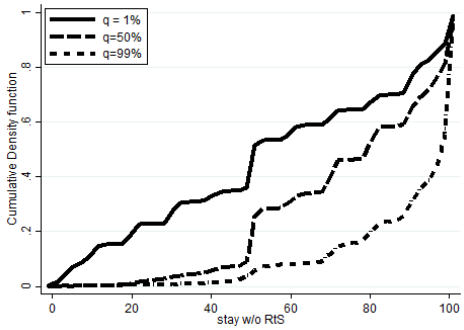
	Berlin	Hamburg	Munich	Total sample
stay if q=1 (Q9)	70.04	56.02	37.07	58.61
	(35.05)	(32.83)	(32.35)	(36.47)
stay if q=50 (Q10)	85.55	74.55	66.46	78.14
	(22.96)	(22.36)	(25.88)	(24.97)
stay if q=99 (Q11)	95.80	89.94	91.02	93.26
	(13.55)	(16.12)	(18.15)	(15.64)

Notes: Mean values calculated on non-missing observations. Berlin N=534, Hamburg N=226, Munich N=264, Total N= 1,024.Standard deviation in parentheses.

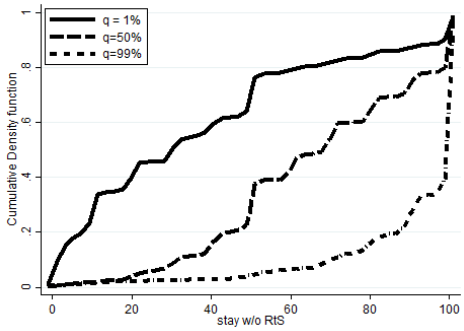
Table 6.3: Intention to stay in DE by City



(a) CDFs - Berlin



(b) CDFs - Hamburg



(c) CDFs - Munich

Figure 6.2: Intention to stay w/o RtS by city for $q = 1, 50, 99$

answers. The average intention to overstay drops by about 15 pp when $q = 50$. The magnitude of this change depends strongly on the city: Berlin -10 pp, Hamburg -16 pp and Munich -25 pp. While the distribution is more spread for $q = 50$, still 42% of the sample answer 100, and close to 90% give answers of 45 or above. Even when $q = 1\%$, 30% of the sample answers 100. Of those, 80% reside in Berlin. The drop in the average intention to stay from the case where $q = 99$ is on average of 35 pp. Again, the magnitude of this change differ strongly by city: Berlin -26 pp, Hamburg -44 pp and Munich -54 pp. Thus, Munich residents appear less willing to stay when there is almost no chance to be regularized. The difference in intention to stay between Berlin and Munich is about of 33 pp and the median intention stay is only at 30 in Munich. Hence, the chance of obtaining the RtS three years ahead appears to have a significant effect on the intention to stay without RtS.

Eliciting the data under several hypothetical scenarios creates a "pseudo-panel". We observe for each individual a vector: $((1, p_i(1)), (50, p_i(50)), (99, p_i(99)), (q_i, p_i(Q_i)))$, where $p_i(q)$ denotes the intention to stay without the RtS when the chance of obtaining the RtS three years ahead is q.[16] To calculate the elasticity of interest, we can use fixed-effects methodologies to purge the bias from individual-specific unobserved characteristics. We estimate the following models:

$$\begin{aligned} p_i(q) &= \beta q + \tau_i + u_{iq},\ q = 1, 50, 90, Q_i \text{ (Linear FE)} \\ \log\left(\frac{p_i(q)}{1 - p_i(q)}\right) &= \beta q + \tau_i + u_{iq},\ q = 1, 50, 90, Q_i \text{ (LAD FE)} \end{aligned}$$

The first specification (Linear FE) uses the elicited intention to overstay as the dependent variable, where as the second specification (LAD FE) uses a log-odd transformation of it. τ_i represents individual fixed-effect that captures observed and individual specific characteristics, and u_{iq} can be thought of as a measurement error. Regressions are conducted for the each city as well as the whole sample.

Table 6.4 presents the estimates of the coefficient β. Due to the presence of extreme value observations, the LAD FE does not converge for the Berlin sub-sample. Instead, we

[16] Q_i corresponds to the answer to $Q5$, and $p_i(Q_i)$ to the answer to question $Q8$.

	Berlin	Hamburg	Munich	All
Linear FE				
Obt.RtS.after 3 yrs w/o RtS	0.27***	0.33***	0.52***	0.35***
	(0.01)	(0.02)	(0.02)	(0.01)
LAD FE				
Obt.RtS.after 3 yrs w/o RtS	1.02***	1.02***	1.05***	1.02***
	(0.00)	(0.00)	(0.00)	(0.00)
Observations	2023	898	1013	3934

Notes: Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.Coefficients of LAD FE in exponential form.LAD FE for Berlin presents the results of a quantile regression at the first quartile instead of the median.

Table 6.4: Regression of intention to stay without RtS

present the result for a quantile regression at the first-quartile.

The linear FE estimation implies that one-point increase in the perceived chance of obtaining the RtS, increases the intention to overstay by 0.35 pp. That is, a one-standard-deviation increase from the mean raises the intention to overstay by 9.95 pp (=28.44 $\times$ 0.35). This effect is stronger in Munich than in the other cities. The same increase from the mean raises intention to overstay by 14.8 pp, against 9.39 pp in Hamburg and 7.96 pp in Berlin. Similarly, the LAD FE estimation implies a twice as large increase of the odds of overstaying in Munich as in the two other cities.

A further measure of the importance of the chance of obtaining the RtS is given by the ratio:

$$\rho_i = \frac{\hat{p}_i(Q_i) - \hat{p}_i(0)}{\hat{p}_i(Q_i)} \tag{6.1}$$

where $\hat{p}_i(Q_i) = \hat{\beta}Q_i + \tau_i$. ρ measures the increase in the intention to overstay that is due to the chance of obtaining the RtS in the future. The larger ρ_i, the more the intention to overstay is driven by the option to be regularized.

Figure 6.3 presents a box-plot of the distribution of ρ in the population, by city. The option to be regularized drives a sizable part of the intention to overstay. The interquartile interval ranges from 0.12 to 0.22 for Berlin, that is, the option to be regularized explains from 12% to 22% of the intention to overstay of the middle half of the population in this city. This interval is $[0.21, 0.31]$ for Hamburg, and $[0.27; 0.49]$ for Munich. In the latter city, the option to be regularized explains more than half of the intention to overstay for

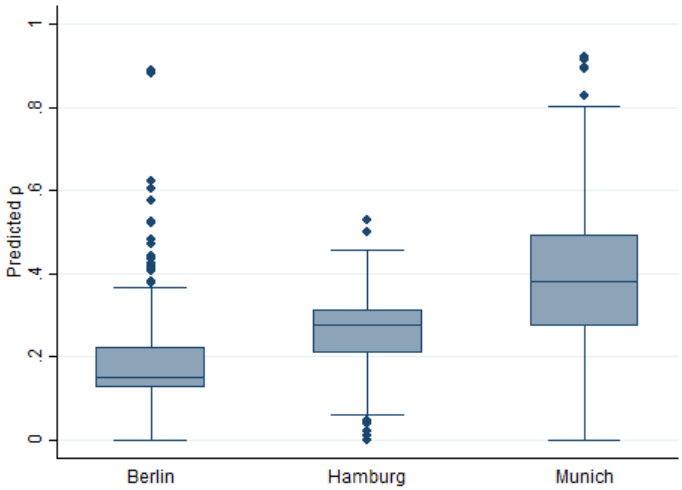


Figure 6.3: Box-Plot ρ by city

one quarter of the population. These findings illustrate the importance of the perceived chance of obtaining the legal right to stay.

7 Discussion

In summary, we find that Afghan asylum seekers are, on average, pessimistic about the proportion of asylum seekers that are granted the refugee status in Germany. However, they are optimistic about their individual chances. There is considerable heterogeneity in individual subjective beliefs. In particular, beliefs differ considerably by the city of residence. Afghan asylum seekers have upwardly biased expectations about the risk of deportation. Providing information about the actual proportion of deportation does not have a sizable effect on those beliefs.

Subjective beliefs in turn shape the intention to stay in Germany without the RtS. The intentions to overstay of the respondents are, on average, relatively high. The possibility to be regularized in the future explains more than 20% of these intentions for one half of the population. Here, as before, the elasticity of the intention to overstay to the perceived chance of being regularized differ significantly by the city of residence. Asylum seekers residing in Munich are considerably less willing to overstay when the chance of obtaining the legal right stay decreases.

To pinpoint the origin of this discrepancy across cities is beyond the scope of our study. Possible reasons might include selection of migrants in cities, different information in the network, and factors related to local government. It is unlikely that selection of migrants on individual characteristics could explain completely the findings. First, the initial distribution of asylum seekers is, more or less, randomized across federal States, especially in the case of countries of origin with large number of asylum seekers, such as in the case of Afghanistan. Second, the city-effect is sizable even when controlling for a large set of observable characteristics.

Different information might circulate in the network at the city level, and further research should be done to elicit source, content and transmission of information within local networks.

In our opinion, the political positioning of the local governments with respect to migration issues might also be an important factor explaining the city differences in subjective beliefs and intention to overstay. At the time of the survey, the Parliament of Bavaria was governed by a Center-Right party (CSU) that had advocated a harder line on migration. It had been openly critical of the political course of the federal government during the so-called migrant-crisis of 2014 and 2015, and campaigned for an upper limit of 200 thousand asylum seekers per year. Bavaria is one of the two states (the other being Saxony) that regularly deports people to Afghanistan who are neither Islamist threats nor criminals.[17] It is not unlikely that this positioning has created more pessimism among asylum seekers about their future prospect of regularization and stay. If so, our results suggest that deterrence policies might reduce the intention to overstay.

However, one should keep in mind that deterrence policies might also have unintended effects, for example on integration investments of asylum seekers. A precarious legal status creates institutional barriers for a migrant's integration in the host society. For example, it increases local firms' cost of hiring by creating uncertainty about the length of a work contract. Furthermore, the economic literature has pointed out the importance of

[17] See for example: Spiegel (2017), last accessed on October 15, 2020 "Obergrenze! Obergrenze?" https://www.spiegel.de/politik/deutschland/csu-wahlprogramm-bayernplan-ein-bisschen-obergrenze-a-1158350.html.

subjective expectations on human capital investments in several domains. In particular, the prospect of staying in a host country is often cited as a key determinant of language acquisition of migrants: the more likely the stay, the higher the returns of the host country language, and therefore, the higher the investments (see Chiswick and Miller, 2015; Khourshed and Méango, 2020).

We suggest that dampened prospects for acquiring the RtS might lead to an under-investment in German language in Munich compared to the other two cities. A standard mediation analysis illustrates this point clearly. The independent variable or treatment is the residence status (equals 1 if residing in Munich, and 0 otherwise). The dependent variable is the language level of the asylum seeker, as assessed by the interviewer at the end of a short conversation in German about the weather. Respondents with higher scores have better German language skills. The mediator is the prospect of obtaining the RtS, the answer to $Q4$. The control variables include gender, number of years of education, age and age squared, current legal status and number of months in Germany. All these aspects have been found to influence language skills in the literature (Adserà and Pytliková, 2015; Chiswick and Miller, 2015). To mitigate concerns about unobserved characteristics that would influence treatment, mediator and dependent variable, the regressions include the estimated residual term u_i from equation (6.1). Details of the intermediate regression are collected in Appendix D.

Effect	Mean	[95% Conf.	Interval]
Total Effect	-0.41	-0.59	-0.23
ACME	-0.06	-0.11	-0.01
Direct Effect	-0.35	-0.52	-0.16
% of Tot Eff mediated	0.15	0.10	0.27

Table 7.1: Results of the mediation analysis

Table 7.1 displays the results of the mediation analysis. The total effect is significantly negative (-0.41) and economically sizable (0.30 sd of the language score). This suggests that respondents in Munich have on average poorer language skills than their counterparts in Berlin and Hamburg. The total effect can be decomposed in the mediated effect (-0.06)

attributable to lower average beliefs in Munich and the direct effect (-0.35), attributable to other factors at the city level, e.g., differential access to German language class. Thus, as much as 15% of the language skill gap between Munich and the other cities could be explained by lower prospects of regularization in Munich.

These results put into perspective the consequences of a political strategy of deterrence (*Abschreckung*), which aims at decreasing future opportunities for a regular stay to avoid creating so-called pull-effects. Intention to overstay of those already present are relatively high. Given that deportation rates are low, it is likely that a large part of the asylum seekers will remain in Germany, irrespective of their status. However, their precarious legal status creates institutional barriers for their integration. Moreover, the low prospects of regularization might deter them *ex ante* from human capital investments that are key for their integration. In sum, a deterrence strategy might lead to a slightly lower number of illegal stayers, however, these stayers will attain lesser skills.

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Appendix

A Sources and additional of Official statistics

Sources of official statistics accessible online:

1. Eurostat: First instance decisions on applications by citizenship, age and sex - annual aggregated data (rounded).URL: https://ec.europa.eu/eurostat/databrowser/view/MIGR_ASYDCFSTA__custom_55039/default/table?lang=en.

2. Statistisches Bundesamt, DESTATIS, URL: https://www-genesis.destatis.de/genesis/online

    - Code 12531-0008: Persons seeking protection: Germany, reference date, sex, category of protection status/protection status, country groups/citizenship.
    - Code 12531-0026: Persons seeking protection: Länder, reference date, sex, category of protection status/protection status, country groups/citizenship.

3. Deportations and departure statistics from the federal government:

    - 2014 - Deutscher Bundestag, Drucksache 18/4025.URL: http://dipbt.bundestag.de/extrakt/ba/WP18/649/64916.html
    - 2015 - Deutscher Bundestag, Drucksache 18/7588.URL: http://dipbt.bundestag.de/extrakt/ba/WP18/717/71788.html
    - 2016 - Deutscher Bundestag, Drucksache 18/11112.URL: http://dipbt.bundestag.de/extrakt/ba/WP18/794/79434.html
    - 2017 - Deutscher Bundestag, Drucksache 19/800.URL: http://dipbt.bundestag.de/extrakt/ba/WP19/2312/231225.html
    - 2018 - Deutscher Bundestag, Drucksache 19/8201.URL: http://dipbt.bundestag.de/extrakt/ba/WP19/2436/243665.html
    - 2019 - Deutscher Bundestag, Drucksache 19/18201.URL: http://dipbt.bundestag.de/extrakt/ba/WP19/2589/258926.html

4. Compiled statistics on deportations by origin country, state (*Länder*) responsible of the deportation and year of deportation:

   Bundeszentrale für Poltische Bildung, URL: https://www.bpb.de/gesellschaft/migration/flucht/zahlen-zu-asyl/265765/abschiebungen-in-deutschland.

5. Short explanation of the toleration status:

   Bundeszentrale für Poltische Bildung, URL: https://www.bpb.de/gesellschaft/migration/kurzdossiers/233846/definition-fuer-duldung-und-verbundene-rechte?p=all

		Germany	Berlin	Hamburg	Bavaria
2016	Open status	68%	71%	48%	67%
	Recognized	27%	24%	48%	26%
	Denied	5%	5%	4%	7%
2017	Open status	41%	42%	24%	41%
	Recognized	51%	52%	72%	51%
	Denied	8%	6%	5%	9%
2018	Open status	30%	29%	18%	30%
	Recognized	61%	62%	76%	61%
	Denied	9%	8%	7%	9%
2019	Open status	22%	20%	13%	21%
	Recognized	66%	68%	80%	69%
	Denied	12%	12%	7%	11%

Source: authors' calculation from DESTATIS

Table A.1: Distribution of status among Afghan migrants by German federal states and year

B Flow chart of RCT

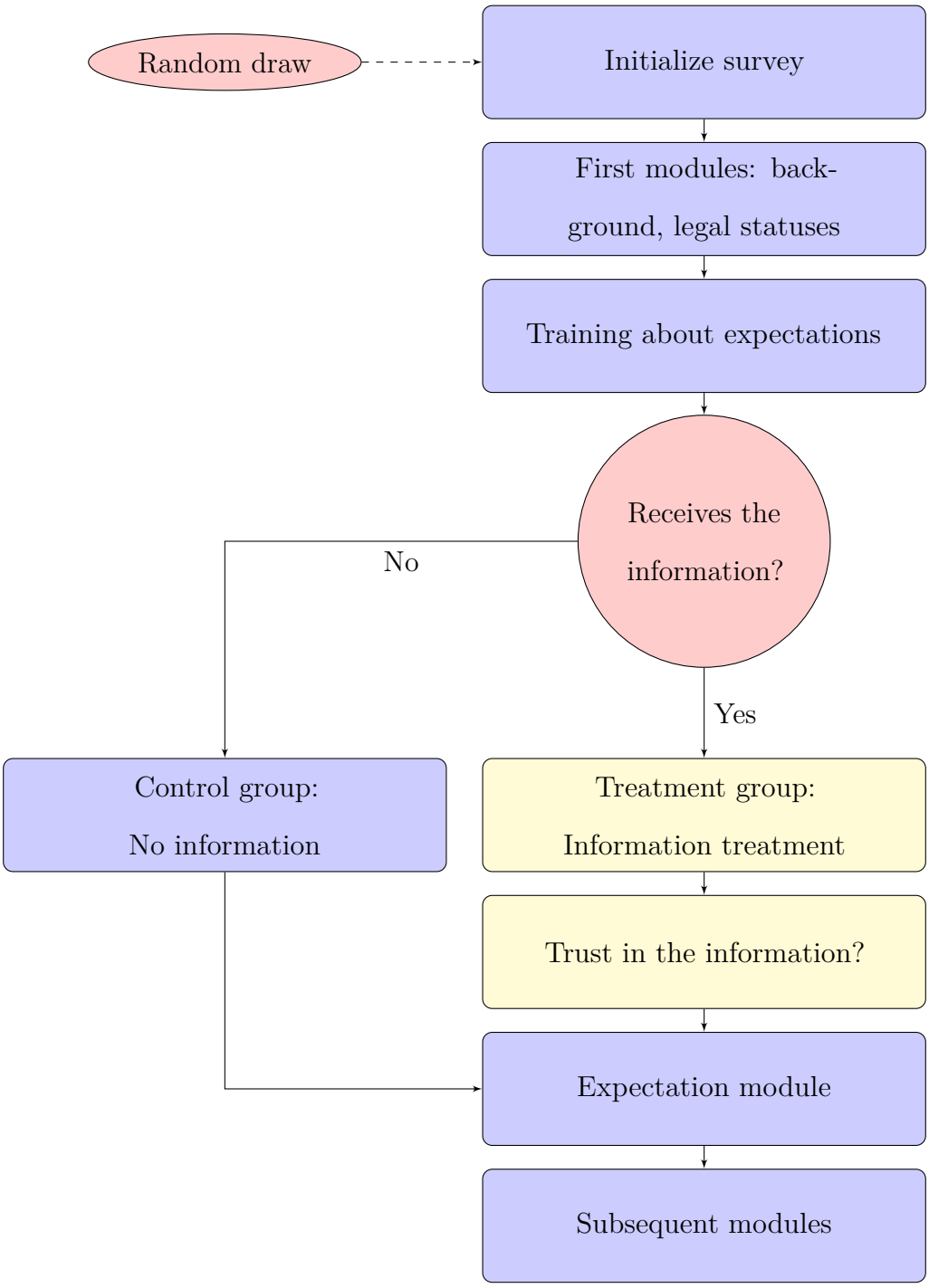

Figure B.1: Flow-Chart of the Survey Design

C Value of the information using a Bayesian-updating model

Following Zafar (2011), we can calculate the value of the information provided in the RCT using a Bayesian-updating model on the probability of a binary event (deportation or no deportation). Define:

$$X_{t+1}^{with\ info} = \eta X_{t+1}^{w/o\ info} + (1-\eta)(I - X_t) \tag{C.1}$$

where $X_{t+1}^{with\ info}$ is the belief about the deportation at time $t+1$ once the information is received, $X_{t+1}^{w/o\ info}$ the similar belief that would have been held without the information, X_t the belief held about deportation at time t, and I is the content of the information. The parameter η measures the relative importance of the new information compared to previous information for forecasting the proportion of deportation in the future. Denote $\bar{A}$ the population average of a variable A, one can derive an expression of η:

$$\eta = \frac{\bar{X}_{t+1}^{with\ info} + \bar{X}_t - I}{\bar{X}_{t+1}^{w/o\ info} + \bar{X}_t - I} \tag{C.2}$$

Because information is provided randomly, the average expectation of the treated provides an expression for $\bar{X}_{t+1}^{with\ info}$. Similarly, the average expectation of the treated provides an expression for $\bar{X}_{t+1}^{w/o\ info}$. We report $R = 1/\eta - 1$ as our measure of the importance of the information.

All cities	Berlin	Hamburg	Munich
0.141	0.274	-0.130	0.206

Table C.1: Parameter R by city

Table C.1 shows the estimated value of R for the whole sample and in each city. It confirms that the information is of relatively low importance in general. The largest importance is for Berlin. Moreover, when distinguish sub-groups of the population, we find that the information significantly more important for men, and those with poor German. However, the importance of the information is not necessarily larger for people

with already more erroneous beliefs (above median beliefs).

D Mediation analysis

	Obt. RtS	Lang. score
Munich resident	-0.16***	-0.35***
	(0.02)	(0.09)
Secure Status	0.06***	0.23***
	(0.02)	(0.09)
Female	0.01	-0.19**
	(0.02)	(0.08)
Age	-0.00	-0.11***
	(0.00)	(0.02)
Age squared	0.00	0.00***
	(0.00)	(0.00)
Years since arrival	-0.00	0.24***
	(0.01)	(0.03)
Years of education	0.00	0.05***
	(0.00)	(0.01)
Residual u	0.00***	0.00
	(0.00)	(0.00)
Obtain RtS		0.40**
		(0.16)
Constant	0.70***	3.74***
	(0.07)	(0.37)
Observations	879	879
R^2	0.212	0.320

Notes: Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table D.1: Intermediate regressions for the mediation analysis in Table 7.1