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Country, Culture or Competition - What Drives Attitudes Towards Immigrants in Sub-Saharan Africa?

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Sub-Saharan Africa is becoming an increasingly important destination for international migration. The region hosts immigrants from other African countries and from other parts of the world, such as China. Given high poverty levels and weak social security systems in Sub-Saharan Africa, host populations might fear increasing competition for resources and labor, potentially resulting in negative attitudes towards immigrants. We provide the first systematic study of attitudes towards immigrants in Sub-Saharan African countries that uses a causal framework. Using a survey experiment in Uganda and Senegal, we study both attitudes towards immigrants in general and towards specific immigrant groups. In particular, we focus on Chinese immigrants, whose increasing presence in Africa is seen by many as the most important contemporary geopolitical shift involving the continent. We find that attitudes towards immigrants are mainly driven by sociotropic cultural and sociotropic economic concerns. Furthermore, immigrants from China are perceived less positively and economically more threatening than immigrants in general.

JEL: F22, O15, O55
Keywords: Attitudes towards immigration, China in Africa, migration, experiment, conjoint

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I. Introduction

While typically being associated with out-migration towards Europe and the MENA region, Sub-Saharan Africa is home to one of the world's fastest-growing immigrant populations (OECD, 2021). Besides hosting large refugee populations and high numbers of intra-regional migrants, Sub-Saharan Africa is increasingly becoming a destination in new North-South and South-South migration corridors. Immigration is important in the region because it can improve economic productivity and inclusion in global supply chains and foster knowledge diffusion. Despite the economic potential associated with immigration, host populations might fear increasing competition for resources and labor, given high poverty levels and weak social security systems in Sub-Saharan Africa. Perceived threats to the host population can potentially result in negative attitudes towards immigrants. These public attitudes do not only matter for the successful integration of immigrants. They can also shape future migration flows (Friebel, Gallego and Mendola, 2013) and migration policy (Facchini et al., 2008) such as an easing of immigration policies that are planned by the African Union and in the African Continental Free Trade Area. Anecdotal evidence on public opinion toward immigrants in Sub-Saharan Africa ranges from optimism about the potentially positive effects of immigration to skepticism, xenophobia, and even violent riots targeting foreigners (Mohan and Tan-Mullins, 2009; Facchini, Mayda and Mendola, 2013). Systematic quantitative evidence, however, remains scarce. To date, the scientific literature on attitudes towards immigrants has focused almost exclusively on Europe and the USA as destination countries, see for example Card, Dustmann and Preston (2012), Hainmueller and Hopkins (2015) and Valentino et al. (2019). For developed countries, re-

search shows that public attitudes are predominantly shaped by sociotropic concerns about immigrants' cultural and economic impacts (Adida, Lo and Platas, 2019). Contrary to common belief, egocentric economic concerns such as fear of labor market competition play a less important role. However, the extent to which these results depend on the Western context with its cultural and historical peculiarities and high income levels remains unclear.

In developing countries, drivers of public opinion towards immigrants might differ from those in developed countries. Egocentric economic concerns may play a larger role because labor market competition is fiercer and social protection systems are less developed. By contrast, sociotropic economic and cultural concerns may be less important due to the absence of competition for social services and higher cultural heterogeneity in the respective countries (Alrababa'h et al., 2021).

We study attitudes towards immigrants in Sub-Saharan Africa with new experimental and observational survey data from Uganda and Senegal and thus, to our knowledge, provide the first large-scale causal study of the determinants of attitudes toward immigrants in Sub-Saharan Africa. Our paper adds to the literature in three ways. First, we investigate whether drivers found influential in developed countries also apply to Sub-Saharan Africa. Second, we extend the three well-established theoretical drivers of public attitudes – sociotropic economic concerns, egocentric economic concerns, and sociotropic cultural concerns – by a fourth one: concerns about foreign influence, which we call power concerns. Power concerns may be particularly relevant in Sub-Saharan Africa due to the region's history of colonialism and dependence, as contrasted with China's official non-interference policy

(Dreher et al., 2018). Third, we differentiate between different immigrant groups, focusing especially on attitudes towards Chinese immigrants. This group has recently gained importance in many Sub-Saharan African countries as China's economic impact has grown. This occurred through trade and financial flows. Nowadays, China is one of Africa's largest sources of official development assistance (Strange et al., 2017) with lending activities greater than those of the World Bank, the IMF, or all OECD governments combined (Horn, Reinhart and Trebesch, 2021). The increasing presence of Chinese in Africa is seen by many as the most important ongoing geopolitical shift involving the continent (Park, 2009).

We estimate preferences for immigrant characteristics using a fully randomized conjoint experiment, where respondents select their preferred immigrant profile among different profiles of hypothetical immigrants. Conjoint experiments are routinely employed in the literature on attitudes towards immigrants because they allow to causally estimate treatment effects in multidimensional choice settings and are robust to social desirability bias (Hainmueller, Hopkins and Yamamoto, 2014).

Additionally, we take inspiration from Card, Dustmann and Preston (2012) and use observational survey data to strengthen the results from the conjoint experiment. We use different indicator questions to measure egocentric economic, sociotropic economic, sociotropic cultural, and power concerns, and estimate their predictive power for explaining respondents' attitudes towards immigrants. Furthermore, we differentiate between immigrants in general and Chinese immigrants in particular. For our study, we chose Uganda as the top refugee-hosting country in Africa and one of the top five hosting countries in the world. The country has been praised for its progressive

refugee policy (Omata, 2020) and is also an important destination country for other forms of migration. Senegal, by contrast, is an important destination country for migrants within the Economic Community Of West African States and has much higher emigration rates than Uganda. The experience with migration is thus different from that in Uganda. Each country has both a quite international capital city and regions with little experience with foreigners. This variation within countries helps us understand whether the observed patterns are general or highly dependent on context. Overall both countries thus also hold external validity for different regions across the continent, despite differences in culture, history, and economic situation that may moderate differences in attitudes toward immigrants.

In the conjoint experiment, we find that sociotropic concerns, both economic and cultural, are decisive in driving general preferences for immigrants. Respondents strongly prefer immigrants who are willing to integrate and who have high-paying jobs, irrespective of the respondents' skill levels. Moreover, respondents prefer African immigrants over non-African immigrants.

Our survey measures strengthen the results from the conjoint experiment, underpinning the importance of sociotropic concerns. While Chinese immigrants are viewed somewhat more negatively than the average immigrant, attitudes towards both groups are shaped by the same mechanisms. Power concerns are generally high among respondents. However, they have no explanatory power for attitudes towards immigrants.

The remainder of the paper is structured as follows. In section II, we discuss the relevant theory and existing evidence that our analysis is built on. We then introduce our hypotheses and study design in section III. Our

estimation approach is discussed in section IV before presenting the results in section V. Section VI concludes.

II. Drivers of attitudes towards immigrants: theory and evidence

The economic and political literature distinguishes three main theoretical drivers of attitudes towards immigrants: egocentric economic concerns, sociotropic economic concerns, and sociotropic cultural concerns (see for example Hainmueller and Hopkins (2015) and Valentino et al. (2019))[1].

Egocentric economic concerns describe the fear of negative consequences for individuals' economic prospects resulting from immigration, for example by competing with immigrants in the labor market (also often referred to as the labor market competition hypothesis). If natives fear potential job losses or a decrease in wages, they should particularly oppose immigrants with a similar set of skills as themselves. Consequently, attitudes should depend on both the natives' and the immigrants' skill-levels and the local labor market conditions.

Sociotropic economic concerns describe concerns about the host economy as a whole, its welfare system, and social services (Alrababa'h et al., 2021). In general, high-skilled immigrants are expected to contribute more to the host country's economy by making higher net contributions to the welfare state than low-skilled immigrants. Accordingly, natives should strictly prefer high-skilled immigrants over low-skilled immigrants irrespective of the natives' skill-level.

[1]Studies focusing on attitudes towards refugees in particular additionally investigate humanitarian concerns, see for example Bansak, Hainmueller and Hangartner (2016) and Alrababa'h et al. (2021).

Sociotropic cultural concerns capture the perceived threats of immigrants to the host country's culture, its norms, and values. Based on cultural concerns, one expects natives to prefer immigrants who share a similar cultural background over immigrants who are perceived to be culturally distant.

Recent studies from Europe and the USA broadly agree that sociotropic concerns, both economic and cultural, are the key drivers of public attitudes towards immigrants (Adida, Lo and Platas, 2019; Bansak, Hainmueller and Hangartner, 2016; Card, Dustmann and Preston, 2012; Hainmueller and Hopkins, 2014, 2015; Valentino et al., 2019; Denney and Green, 2021). In these studies, respondents consistently favor skilled and educated immigrants, irrespective of the respondents' own qualification or education. Respondents also prefer immigrants who are perceived to be culturally similar over immigrants that are perceived to be culturally distant. Common proxies for cultural similarities are immigrants' origin country, his/her religion, or the ability to speak the host country's language. Egocentric economic concerns are of little relevance in Western societies: While earlier studies stress the importance of potential labor market competition (Scheve and Slaughter, 2001; Mayda, 2006), more recent experimental studies find little to no support for bias against immigrants with a similar set of skills (Hainmueller, Hiscox and Margalit, 2015; Hainmueller, Hopkins and Yamamoto, 2014; Valentino et al., 2019; Hainmueller and Hopkins, 2014). These findings are in line with literature that estimates the economic and wage effects of immigrants on host countries to be small in general (Dustmann, Schönberg and Stuhler, 2016).

Although developing countries receive the majority of immigrants world-

wide, quantitative studies on attitudes towards immigrants in developing countries are scarce. Most studies are purely observational (e.g., Adida, 2011; Facchini, Mayda and Mendola, 2013; Whitaker and Giersch, 2015; Buehler and Han, 2018; Gordon, 2018; Harris et al., 2018; Ghosn, Braithwaite and Chu, 2019; Ruedin, 2019; Hartman and Morse, 2020) and lack causal identification. Causally identified studies are often case-specific and have limited external validity, see for example Lehmann and Masterson (2020) and Rosenzweig and Zhou (2021).

Two studies deserve special attention, as they causally investigate drivers of attitudes towards immigrants in non-Western contexts: First, Alrababa'h et al. (2021) investigate natives' attitudes towards Syrian refugees in Jordan using a conjoint experiment where respondents chose their preferred refugee among pairs of different refugee profiles. They find that attitudes towards refugees in Jordan are primarily driven by humanitarian and cultural concerns. Egocentric and sociotropic economic concerns are found to be less important drivers of anti-refugee attitudes.

Second, Cogley, Doces and Whitaker (2019) investigate attitudes towards immigrants in Ivory Coast using a vignette-experiment. Here, respondents were presented single randomly composed profiles of hypothetical immigrants that were assumed to already reside in Ivory Coast. Respondents were then asked to decide whether a given immigrant profile should be naturalized, tolerated or deported. The authors find that immigrants' legal status, education and employment play an important role for respondents' decisions. Cultural concerns, measured by religion, language skills and origin country have mixed effects on respondents' attitudes and do not provide clear results.

Despite some overlap, both studies differ markedly from ours. Alrababa'h et al. (2021) focus exclusively on refugees, whereas our main focus is voluntary, i.e. typically economic migration from different parts of the world. Cogley, Doces and Whitaker (2019) do not investigate economic concerns in depth. They only differentiate between unemployed and employed immigrants without accounting for jobs with different skill- or status-levels. Moreover, they do not investigate egocentric economic concerns at all. Finally, they use a vignette design which has shown to perform worse than paired conjoint experiments (Hainmueller, Hangartner and Yamamoto, 2015).

When looking specifically at attitudes towards Chinese immigrants in Africa, the literature becomes even more limited. Already the actual number of Chinese immigrants in the continent is unclear as no official figures exist. Guesstimates talk about 1 to 2 million Chinese immigrants in Africa (ILO, 2020) [2]. Park (2009) gives a brief overview over the history if Chinese migration to Africa, and provides anecdotal evidence for increasing anti-China sentiment fueled by a mixture of geopolitics, local rumours, negative (western) media coverage and labour-marked competition.

Some quantitative studies investigate public opinion towards the Chinese government and its engagement in Sub-Saharan Africa. Sautman and Hairong (2009) surveyed African university students and find that African views on China's engagement on the continent are far less negative than portrayed in Western media. More recent data from the Afrobarometer comes to a similar conclusion: African respondents are largely aware of China's engagement and rate it positive overall. However, the picture is nuanced,

[2]Proxies for the presence of Chinese workers in Africa are for example the number of Weibo users, a Chinese Twitter equivalent (Cervellati et al., 2022)

with strong differences between regions and countries (Sanny and Selormey, 2020).

Studies investigating host populations' responses to specific Chinese projects in Africa come to mixed conclusions. While Xu and Zhang (2020) find a positive relationship between proximity to Chinese projects and views of Chinese aid among respondents, a study by Wegenast et al. (2019) finds that anti-Chinese sentiment increases among local citizens when Chinese mines are set up. Similarly, Iacoella et al. (2021) find that proximity to Chinese projects is associated with an increase in civil unrest and political participation in Africa, potentially triggered by negative perceptions about China's influence in the region and loss of trust in the local government.

To our knowledge, attitudes towards Chinese immigrants have been quantitatively investigated only once. When studying attitudes towards immigrants in Ivory Coast, Cogley, Doces and Whitaker (2019) include immigrants' origin as a dimension in their vignette experiment, one of the origin countries being China. Contrary to anecdotal evidence and common belief, they find that Chinese immigrants where significantly more likely to be recommended for naturalization than immigrants from other countries. However, the positive effect for Chinese immigrants does not hold when looking at deportations.

III. Hypotheses, data & study design

A. Hypotheses

We test whether the three main theoretical drivers of attitudes towards immigrants - egocentric economic concerns, sociotropic economic concerns, and sociotropic cultural concerns - are relevant in the Sub-Saharan African

context. We also introduce a fourth concern which we call power concerns. Power concerns capture citizens' fear that immigrants and their country of origin could gain an out-sized influence in the host country, potentially threatening the host countries' sovereignty. Concerns about state control and agency are important in the context of the European refugee "crisis" (Jeannet, Heidland and Ruhs, 2021) and in the USA (Briggs and Solodoch, 2021). The study by Iacoella et al. (2021), linking Chinese projects to political participation, points towards concerns about foreign influence in Sub-Saharan Africa.

Building on Alrababa'h et al. (2021) and Park (2009), we hypothesize that (1) egocentric economic concerns are important drivers of attitudes towards immigrants in Sub-Saharan Africa, due to weak labor markets, high poverty rates, and unemployment. Furthermore, as most immigrants in Sub-Saharan Africa come from neighboring countries (Connor, 2018), the proportion of immigrants who speak the same language and have a similar skill-level compared to the local population is higher, making labor market competition a more realistic threat compared to Western countries; (2) sociotropic economic concerns are less important drivers because people are more self-reliant (due to the absence of public services and income support in many areas), decreasing competition for public services; (3) sociotropic cultural concerns are less important drivers, due to host countries' heterogeneous and cosmopolitan societies (Henn and Robinson, 2021); (4) power concerns are important drivers in Sub-Saharan Africa, where the influence and interference of foreign powers has a long and ongoing history, and modern-time involvement is often linked to exploitation and referred to as neocolonial (Mohan and Tan-Mullins, 2009; Cook et al., 2016). Power

concerns might be especially pronounced for attitudes towards Chinese immigrants (Iacoella et al., 2021); (5) attitudes towards Chinese immigrants are more opposing than attitudes towards immigrants in general, based on anecdotal evidence of anti-Chinese sentiment in Sub-Saharan Africa (Park, 2009).

All hypotheses have been pre-registered before the data collection.[3]

B. Sampling and data collection

To investigate our hypotheses, we collected original individual-level survey data in Uganda and Senegal. While we are aware that these two countries are not representative of the whole of Sub-Saharan Africa, they provide two very interesting case studies from two important regions.

Uganda was home to over 1.7 million immigrants in 2019 (3.9 % of its population), three-quarters of them being refugees. Uganda is among the top five refugee-hosting countries in the world and the leading country in Africa. Uganda also hosts significant numbers of regular labor or transit migrants from neighboring countries such as Rwanda and Tanzania (Mosel, Leach and Hargrave, 2020). While non-African immigrants account for less than 1% of Uganda's immigrant stock (Mosel, Leach and Hargrave, 2020), they are very visible in daily life and the media. Indians are historically the most relevant group of non-African immigrants to Uganda, settling there mostly when Uganda and India were both British colonies. They constitute a group of immigrants who have been members of society for many decades. However, this relationship has not always been a harmonious one. Notably, several tens of thousands of Indians were expelled in 1972 by the regime of

[3]The pre-analysis plan has been submitted to OSF on 08 October 2021.

Idi Amin. By the end of his regime's downfall in 1979, almost all Indian citizens had left the country and thus lost their businesses and most other possessions. Under the still ruling Museveni government, Indians were invited back to Uganda in the mid-1980s (Ember, Ember and Skoggard, 2004). Official data from 2012/13 shows that the highest number of work permits in Uganda was issued to Indian citizens (39%).

Senegal is an important destination for migrants within the Economic Community Of West African States. In 2015, foreigners accounted for roughly 1.3 % of the country's population. The majority of Senegal's immigrant population are regular migrants from neighboring countries such as Mauritania, Mali, Gambia and Guinea Bissau (IMO, 2015). What the Indians to Uganda are the Lebanese to Senegal. The Lebanese formed an important part of the Senegalese society and economy already during colonial times, engaging in trade and politics alike. They competed with French traders in peanut trade, making them the target of anti-immigration propaganda and lobbying. After Senegal gained independence 1960 (supported by the Lebanese community) the Lebanese stayed in the country, increasingly competing with Senegalese traders (Boumedouha, 1990). Today, the Lebanese form a well-established yet distinct population group in Senegal (Leichtman, 2005).

In Uganda, we surveyed 1,204 individuals between October and November 2021. In Senegal, we surveyed 1,500 individuals between February and April 2022. Together with our local partners, we identified suitable enumeration areas from different regions to conduct the surveys. In Uganda, we interviewed individuals from 36 different enumeration areas in the dis-

tricts Kampala, Mbale, Gulu, Wakiso, Masaka, and Mbarara. In Senegal, we conducted interviews with 1,500 individuals in 60 different enumeration areas in the districts Dakar, Diourbel, Matam, Saint Louis, Tambacounda and Ziguinchor. Each sample aims at being representative of the respective country's young and mobile population. After a complete household listing in each enumeration area, we randomly sampled individuals aged between 18 and 40 years for the main interview[4]. Including our experiment, each survey took roughly between 90 to 120 minutes. In addition to the conjoint tasks, we collected information on household and individual-level socioeconomic characteristics, individual migration intentions, and attitudes towards immigrants [5].

C. Sample characteristics

Table 1 summarizes socio-demographic characteristics for our full sample. The average respondent is 28 years old, female, and has no secondary education. 49% of respondents engaged in income-generating activities during the last 7 days before the interview. 26% were not working but wanting to, and 11% were studying. Under ideal circumstances, 67% of our sample would like to move within their country, and 71% would like to migrate internationally if given the chance. 49% of the respondents reported to have contact with any foreigner at least once a month, and 34% have contact

[4]Our study is part of a larger survey mainly investigating migration aspirations and migration decisions. For that purpose, the data collection was targeted to a young and mobile population.

[5]A conjoint experiment relies on randomization of the different attribute levels. Due to errors in the survey program, this randomization did not work correctly for the first 500 experiments we conducted in Uganda, making the data invalid. We tried to re-visit all of these 500 respondents to repeat the conjoint experiment, but 33 respondents (6.6% of the 500 respondents to be re-visited) had to be replaced, either because they refused to re-do parts of the questionnaire ($N = 4$) or because they could not be re-contacted ($N = 29$).

with a person from China at least once a month - for example on public transport, in the street, in shops, or in their neighborhood.

Table 1—: Respondents' characteristics

	mean	sd	min	max
Age	27.71	6.67	18.00	40.00
Gender (female = 1)	0.58	0.49	0.00	1.00
Low skilled (no sec. education)	0.46	0.50	0.00	1.00
Working	0.49	0.50	0.00	1.00
Not working, not wanting to	0.03	0.17	0.00	1.00
Not working, wanting to	0.26	0.44	0.00	1.00
Studying (university or school)	0.11	0.31	0.00	1.00
HH income quintiles	2.85	1.42	1.00	5.00
Would like to move internally	0.67	0.47	0.00	1.00
Would like to move internationally	0.71	0.45	0.00	1.00
Contact with any foreigner at least once a month	0.49	0.50	0.00	1.00
Contact with Chinese at least once a month	0.34	0.47	0.00	1.00
Observations	2704			

Don't know and *Refused to answer* are coded as missing.

IV. Empirical approach

A. Conjoint experiment

We conducted a fully randomized conjoint experiment to causally assess the relative importance of immigrants' distinct characteristics for respondents' preferences towards potential immigrants. The conjoint experiment consists of three choice tasks per respondent. Each time, respondents are asked to compare two profiles of hypothetical immigrants and choose the one

they would prefer to come to their country [6]. Each immigrant profile consists of four dimensions: *immigrant's job*, *immigrant's origin country/region*, *immigrant's willingness to integrate into the host country's society* and *immigrant's location within the host country*. Each dimension takes on a specific attribute level which is randomly drawn from a pool of pre-defined attribute levels.

Table 2 shows the different dimensions and attribute levels of the conjoint experiment. Attribute levels for Uganda and Senegal are almost identical and differ only in one level of the origin dimension. For Uganda, we include Indian immigrants, while for Senegal, we include Lebanese immigrants instead. The different levels are presented to the respondent in a visualized form while being read out and explained by the enumerator. We co-developed the attribute levels and visualizations in close collaboration with local experts to ensure that they are suited for the local context.

The two profiles to be compared in each task differ from each other in at least one dimension. We do not restrict combinations of specific levels. The order of dimensions is randomized across respondents but constant across tasks per respondent. 2,704 respondents in total, three tasks per respondent, and two profiles per task give us an effective sample size of $N = 16,224$ for the conjoint experiment.

We explicitly designed the conjoint experiment to investigate the different potential drivers of attitudes towards immigrants.

First, if sociotropic cultural concerns are important in Sub-Saharan Africa, we would expect respondents to prefer African immigrants from a similar

[6]Respondents also had the option to choose "don't know" or "refuse to answer". In Uganda, this was never the case. In Senegal, it happened 98 times (about 1% of all conjoint decisions in Senegal).

Table 2—: Conjoint experiment: dimensions and attribute levels

Dimension	Attribute Levels	Visualization
Origin	• Africa	
	• China	
	• Europe	
	• India	
	• Lebanon	
Job	• Construction worker	
	• Investor	
	• Small shop owner	
	• Supermarket owner	
Willingness to integrate	• Willing	
	• Not willing	
Location in Uganda	• Within community	
	• Outside of community	

Note: Dimensions, attribute levels, and visualizations for the conjoint experiment in Uganda. We replaced the origin attribute level "India" with "Lebanon" in the Senegalese localization of the experiment. Attribute level "Africa" explicitly excludes refugees.

cultural background, and immigrants willing to integrate into the local society. To reduce the complexity of the conjoint experiment and conferring with our local partners, we do not differentiate between specific origin countries within Africa. Importantly, the conjoint explicitly refers to African immigrants and not to African refugees. Certain combinations of attribute levels, such as refugees that work as investors or supermarket owners, would be unrealistic in the local setting.

Second, if sociotropic economic concerns are salient, we would expect respondents to strictly prefer high-skilled immigrants, namely investors and supermarket owners, over low-skilled immigrants, namely small shop owners and construction workers - irrespective of the respondents' own characteristics. If, however, egocentric economic concerns are important, we would expect respondents to prefer immigrants with whom they would not compete with in the labor market. For example, we would expect high-skilled respondents to prefer low-skilled immigrants (small shop owner or construction worker), and low-skilled respondents to prefer high-skilled immigrants (investor or supermarket owner).

To proxy potential labor market competition, we follow the literature and focus on respondents' educational attainment (Hainmueller and Hopkins, 2015), employment status (Alrababa'h et al., 2021) and income levels (Bansak, Hainmueller and Hangartner, 2016). We use educational attainment of at least some secondary education as a cut-off to differentiate between high-skilled and lowskilled respondents. To capture respondents' employment status, we rely on respondents' main job during the last 7 days and group them into working, unemployed and wanting to work, unemployed and not wanting to work, and studying. To distinguish between different

income levels, we create country-specific household income quintiles for our sample, relying on the reported household income for the last 12 months.

Finally, the immigrants' location allows us to capture respondents' overall evaluation of immigrants. Arguably, opposing immigration should lead to a "not in my backyard" mentality, driven by concerns about negative externalities in respondents' regions (Cogley, Doces and Whitaker, 2019). Evaluating immigration as something generally positive should imply the opposite, leading to preferences for immigrants who will stay close by.

Among the experimental dimensions shown in Table 2, attribute levels for origin, job and location are rather self-explanatory. Willingness to integrate, however, can leave some room for interpretation. It could also capture migrants' willingness to integrate into the society economically or to obey rules and laws. To avoid misunderstandings, we explicitly trained examples for integration, such as learning the local languages, participating in local celebrations and making local friends. This way we ensured that explanations and paraphrasing was in line with what we intended to capture.

To evaluate the conjoint experiment, we estimate Average Marginal Component Effects (AMCEs) and Marginal Means for subgroup analysis, following Hainmueller, Hopkins and Yamamoto (2014) and Leeper, Hobolt and Tilley (2020). The AMCE of a given attribute level represents the average effect of that specific level on the overall probability of the profile being preferred, relative to a baseline, averaging across all respondents and all other levels (Hainmueller, Hopkins and Yamamoto, 2014). For the estimation of subgroup differences, we follow the procedure detailed in Leeper, Hobolt

and Tilley (2020).

We estimate AMCEs with the following regression equation

$$Y_{ijk} = \beta_0 + \beta_1 Origin_{ijk} + \beta_2 Job_{ijk} + \beta_3 Integration_{ijk} + \beta_4 Location_{ijk} + \epsilon_{ijk} \quad (1)$$

where Y_{ijk} denotes the choice of respondent i in task j for profile k, β_1 captures the AMCE of the immigrant's origin, β_2 captures the AMCE of the immigrant's job, β_3 captures the AMCE of the immigrant's willingness to integrate, and β_4 captures the AMCE of the immigrant's location in the host country. For subgroup analysis, we add interactions between each attribute level and a categorical variable defining the specific subgroups.

As mentioned before, we are especially interested in the interaction between specific immigrant profiles' characteristics and respondents' characteristics, to capture potential labor market competition. If egocentric economic concerns are salient in Uganda and Senegal, we would expect respondents to prefer non-competing immigrants over potentially competing immigrants. Following the procedure described above, we group respondents into different groups and estimate sub-group preferences using marginal means.

For all estimations, we cluster standard errors on the respondent level. Following Hainmueller, Hopkins and Yamamoto (2014), we test for carry-over effects, profile order effects, attribute order effects, interactions between different attribute levels, and balance.

Conjoint experiments are routinely used to study attitudes and preferences in political and economic contexts. However, they come with specific

disadvantages.

By construction, conjoint experiments only estimate relative preferences. We investigate which immigrant characteristics are relatively preferred over others, without learning something about the general attitudes towards immigrants, i.e. whether or not respondents are, on average, pro or contra immigration. Next,conjoint experiments do not allow to compare estimated AMCEs across different dimensions if each dimension follows a different scale.

Other potential shortcomings are specific to the design of our conjoint experiment. One might argue that the attribute levels from our conjoint experiment do not always illustrate potential concerns as intended. For example, immigrants' origin and their willingness to integrate might be too vague to capture sociotropic cultural concerns sufficiently.

Next, our analysis of egocentric economic concerns captures potential labor market competition very broadly using immigrants' skill-level and respondents' education, employment status and income. Arguably, not every high-skilled individual or high-income household automatically competes with all other high-skilled individuals in the labor market. However, it is difficult to define strict job categories in the Sub-Saharan African context, where informality is common and many people work multiple jobs at the same time.

We tackle these shortcomings by complementing our conjoint analysis with observational survey data. Here, we explicitly ask respondents about their overall attitudes towards immigrants and about the different concerns, building on well-established survey questions.

B. Observational data

Survey data can help us to strengthen the results from the conjoint experiment. To measure attitudes towards immigrants using observational data, we built on survey questions from the European Social Survey, adapting them to the local context.[7] The outcome of interest, namely overall attitudes towards immigrants in general and Chinese immigrants in particular, is measured by the following two questions:

- To what extent do you think should Uganda [Senegal] allow people from other countries to come and live here?
- To what extent do you think should Uganda [Senegal] allow people from China to come and live here?

We then follow Card, Dustmann and Preston (2012) and ask respondents different indicator questions to distinguish between egocentric economic, sociotropic economic, and sociotropic cultural concerns. We furthermore asses power concerns as potential drivers of attitudes towards (Chinese) immigrants. Answers to outcome and indicator questions are measured using different Likert scales. Table 3 gives an overview of the outcome and indicator variables, including the corresponding questions.

[7]The ESS differentiates between different types of immigrants: same/different ethnicity to that of the majority community; from richer/poorer countries; from inside/outside of Europe. Our questionnaire differentiates between immigrants in general and Chinese immigrants in particular. The following two ESS questions measure sociotropic economic concerns: *Would you say it is generally bad or good for [country] 's economy that people come to live here from other countries?* and *Would you say that people who come to live here generally take jobs away from workers in [country], or generally help to create new jobs?*. Egocentric economic concerns are not captured in the ESS. Sociotropic cultural concerns are measured by the ESS question *Would you say that [country]'s cultural life is generally undermined or enriched by people coming to live here from other countries?*. We focused on the potential threat of immigrants following Sniderman, Hagendoorn and Prior (2004): *"These days, I am afraid that the Dutch culture is threatened by ethnic minorities."* Power concerns are not assessed by the ESS.

Table 3—: Survey questions for observational analysis

	Question	Answer Options
Outcome questions	"To what extent do you think should Uganda [Senegal] allow people from other countries to come and live here?"	Allow none Allow a small number Allow some Allow many
	"To what extent do you think should Uganda [Senegal] allow people from China to come and live here?"	Allow none Allow a small number Allow some Allow many
Sociotropic economic concerns	"Would you say it is generally good or bad for Uganda's [Senegal's] economy that people from other countries come to live here?"	Very bad Somewhat bad Neither bad nor good Somewhat good Very good
	"Would you say it is generally good or bad for Uganda's [Senegal's] economy that people from China come to live here?"	Very bad Somewhat bad Neither bad nor good Somewhat good Very good
	"Do foreigners who come to live here take jobs or help to create new ones?"	0 (take away jobs) to 10 (help to create new ones)
	"Do Chinese who come to live here take jobs or help to create new ones?"	0 (take away jobs) to 10 (help to create new ones)
Egocentric economic concerns	"Would you say it is generally good or bad for you and your household's economic prospects that people from other countries come to live here?"	Very bad Somewhat bad Neither bad nor good Somewhat good Very good
	"Would you say it is generally good or bad for you and your household's economic prospects that people from China come to live here?"	Very bad Somewhat bad Neither bad nor good Somewhat good Very good
Sociotropic cultural concerns	"How much do you agree with the following statement: Countrys' norms and values are being threatened by people from other countries who come to live here?"	0 (not at all) to 10 (a lot)
	"How much do you agree with the following statement:	0 (not at all) to

	Countrys' norms and values are being threatened by people from China who come to live here?"	10 (a lot)
Power concerns	"Do you think that foreign governments have too much or too little little influence in Uganda [Senegal]	0 (too little) to 10 (too much)
	"Do you think that foreign businesses have too much or too little little influence in Uganda [Senegal]	0 (too little) to 10 (too much)

Following the intuition provided in Card, Dustmann and Preston (2012), estimate the predictive power of different concerns for explaining attitudes towards immigrants. We assume that respondent i's answers to our outcome questions depend on respondent i's concerns about (Chinese) immigrants' effects on i's individual economic situation, on the economic situation of i's home country,and on norms and values of i's home country, as well as i's concerns about the influence of foreign governments and businesses. While the concerns are unobserved, we use respondents' answers to the indicator questions as proxies.

We run the following OLS regression:

(2)

$$Y_i = \beta_0 + \beta_1 EgocentricEconomic_i + \beta_2 SociotropicEconomic_i + \beta_3 SociotropicJob_i + \beta_4 SociotropicCultural_i + \beta_5 PowerGovernment_i + \beta_6 PowerBusiness_i + \beta_7 Controls_i + \epsilon_{ijk}$$

where Y_i represents respondent i's opinion on the amount of people from other countries that should be allowed to come and live in the host country. β_1 captures egocentric economic concerns, β_2 captures the expected effect of immigrants on the economy as a whole, and β_3 estimates the expected effect of immigration on the labor market. β_4 captures sociotropic cultural concerns and β_5 and β_6 power concerns related to foreign business and foreign governments respectively. β_7 captures the effect of the control variables age, gender, education, employment status (4 levels), region, contact with immigrants, household income (log), life satisfaction (0-10), and satisfaction with city/area the respondent lives in (1-5). To make estimates comparable across different answer scales, all variables are standardized. Standard errors are clustered at the district level.

Running the analysis both for attitudes towards immigrants in general and towards Chinese immigrants in particular, we investigate whether the relative importance of the concerns differs between the two immigrant groups.

V. Results

A. Conjoint experiment

Figure V.A visualizes the AMCEs from equation 1. The dots plot point estimates for the AMCE of each attribute level. Whiskers around the dots show the 95% confidence intervals. Dots without confidence intervals represent the reference category for each dimension, relative to which the AMCEs are estimated. The vertical line helps to assess whether an effect is statistically different from zero at the 95% confidence level. Note that AMCEs for a specific attribute level are estimated by averaging over all attribute levels from the other dimensions. So when estimating the AMCE for, say, super-

market owners, we automatically control for origin, willingness to integrate and location.

Overall, results are similar to comparable studies on attitudes towards immigrants in developed countries, showing that sociotropic economic concerns as well as sociotropic cultural concerns, rather than egocentric economic concerns, are the main drivers of attitudes towards immigrants.

First, respondents have a preference for fellow Africans, whereas immigrants from India/Lebanon, Europe, and China are 11, 7, and 12 percentage points less likely to be selected as compared to African immigrants. While respondents do penalize immigrants of Chinese origin, they do not dislike them more than immigrants from India/Lebanon, who have a much longer history of immigration in the country. European immigrants are seen more negatively than African immigrants, but significantly more positively than immigrants from China or India/Lebanon (A3).

Second, respondents have a preference for immigrants with high-paying jobs and the potential to create employment. On average, respondents prefer high-skilled supermarket owners and investors by 14 and 22 percentage points over construction workers, respectively. Preference between small shop owners and construction workers, which are both considered low-skilled and low-paying jobs in the local context, are significant on the 5% level, but small in absolute terms (two percentage points). These results support the hypothesis that attitudes towards immigrants in Uganda and Senegal are shaped by sociotropic economic concerns.

Next, immigrants' willingness to integrate greatly affects a profile's probability of being preferred. An immigrant willing to integrate is 34 percentage

points more likely to be selected than their non-willing counterpart. The particularly sizable effect underlines the importance of cultural concerns in the host population. It is also in line with anecdotal evidence from conversations with people in the field who emphasized the importance of immigrant populations' integration.

Finally, an immigrant who will stay within the respondents' community is nine percentage points more likely to be selected than an immigrant who will stay outside the respondents' community. We interpret these results as an overall positive evaluation of immigrants: When controlling for immigrants' origin, job, and willingness to integrate, respondents prefer immigrants who live close by over immigrants with whom respondents would potentially never interact. This is in line with results from Cogley, Doces and Whitaker (2019), who do not find any evidence for a not-in-my-backyard mentality.

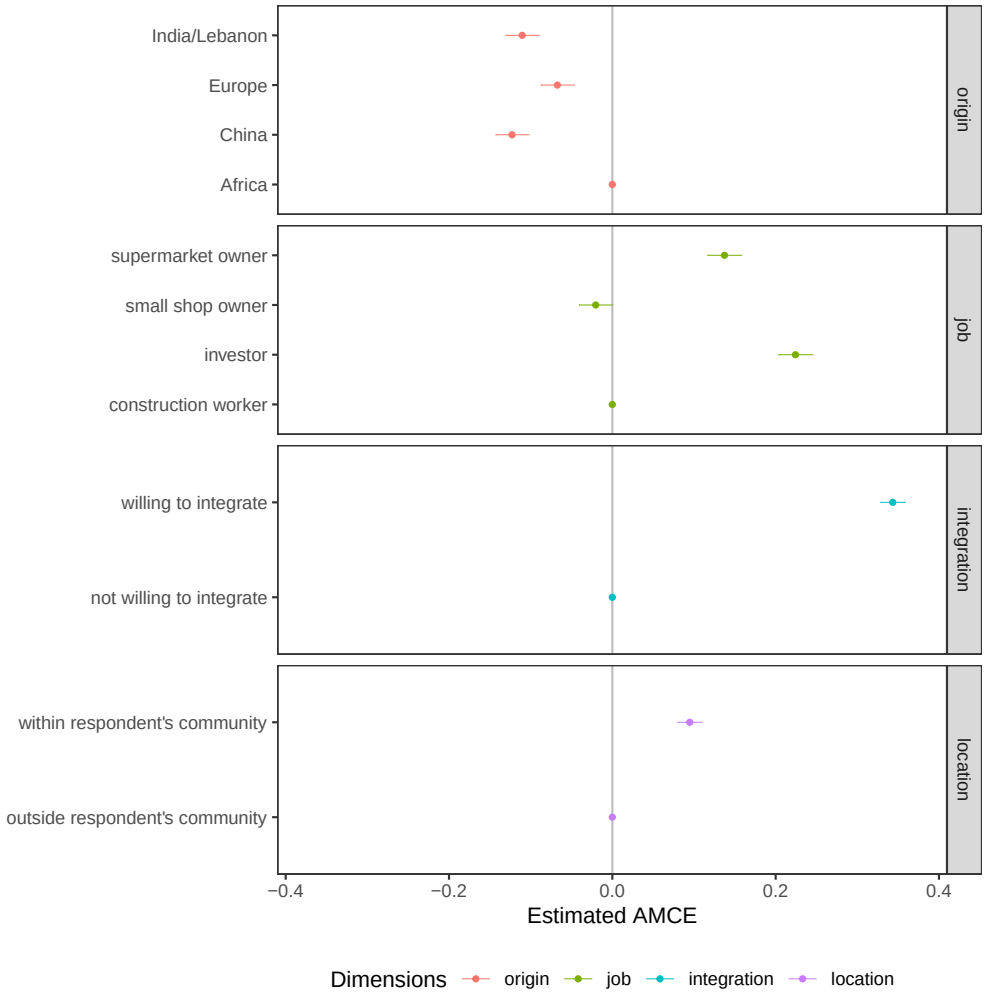


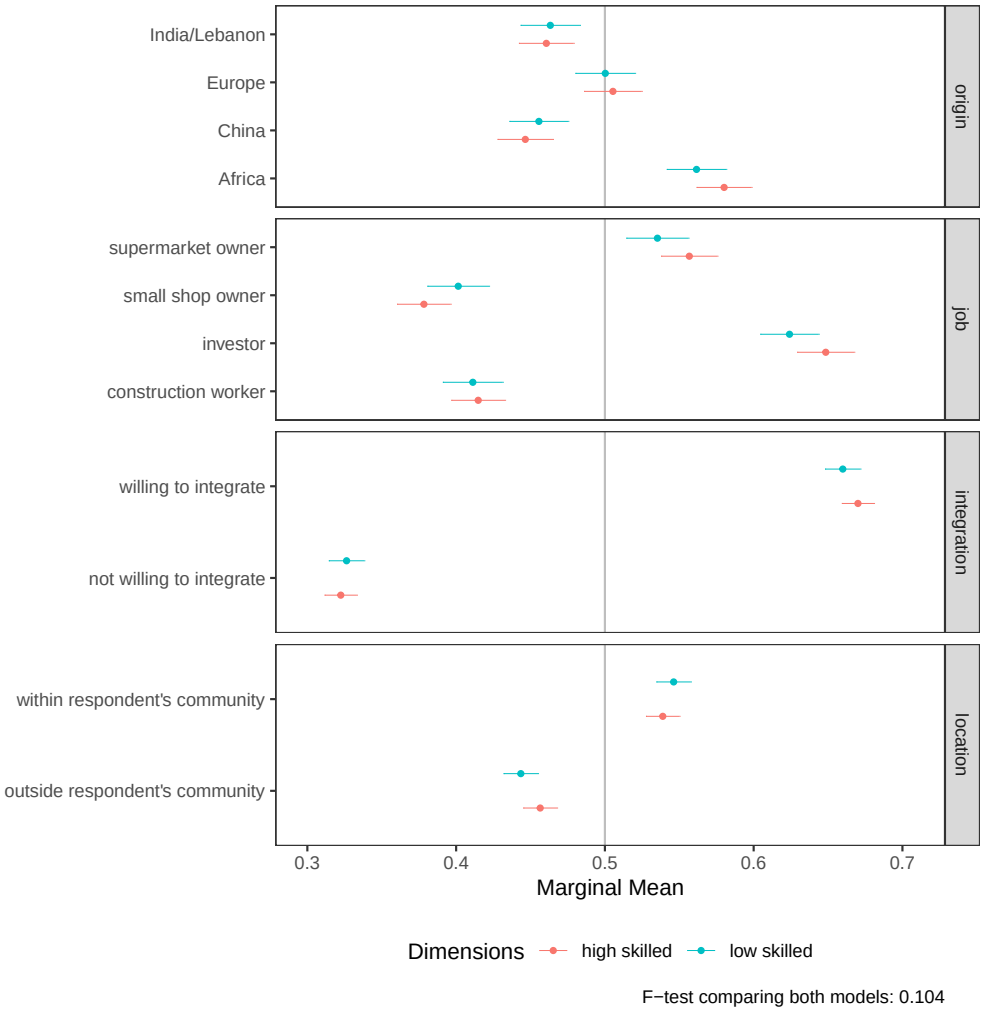
Figure 1. : AMCEs for equation 1

Note: The graph plots AMCEs for equation 1. Dots represent point estimates, whiskers around the dots represent 95% confidence intervals. Dots without whiskers represent the reference category for each dimension.

To further differentiate between sociotropic and egocentric economic concerns, we follow Hainmueller and Hopkins (2015), Alrababa'h et al. (2021) and Bansak, Hainmueller and Hangartner (2016) and estimate marginal means for different respondent sub-groups. We different between (i) high- and low-skilled respondents (V.A), (ii) different employment statuses (V.A),

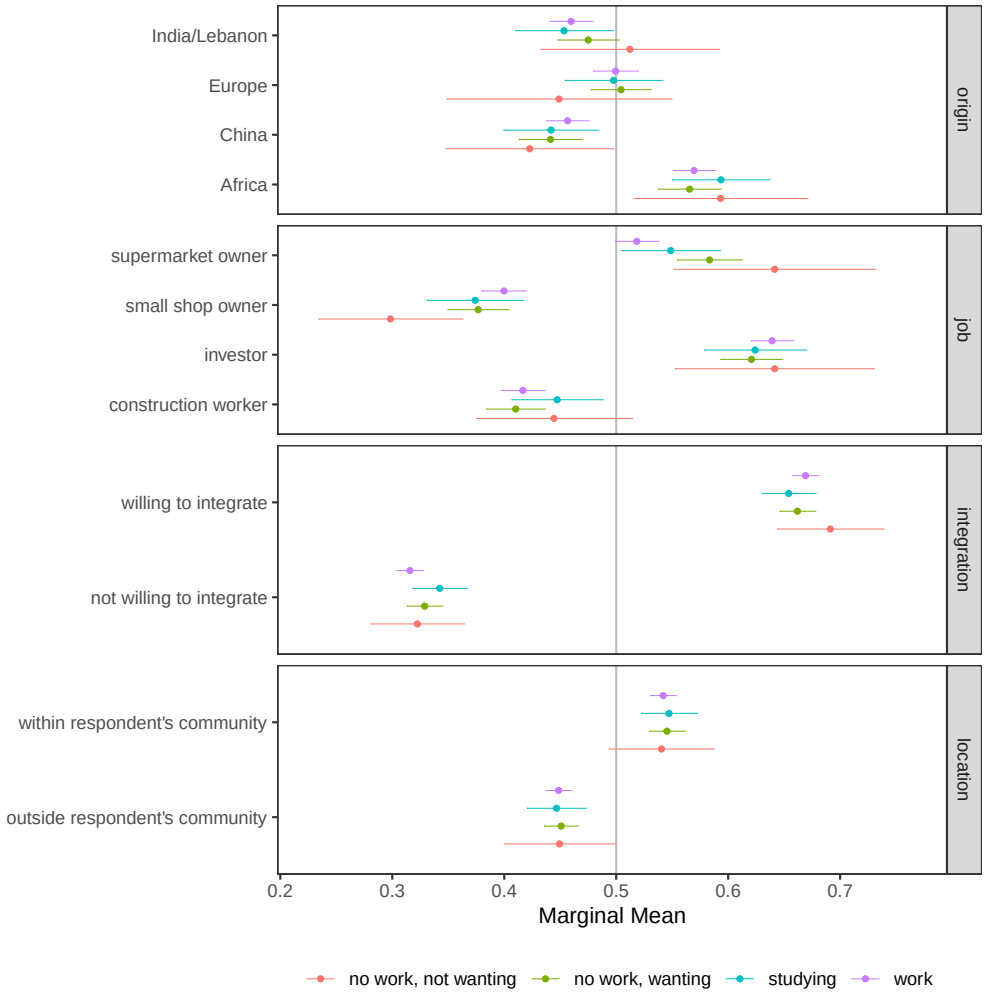
and (iii) different household income levels (V.A). No matter how we proxy potential labor market competition, marginal means do not differ substantially between respondent sub-groups. Preferences remain unchanged, with respondents strictly preferring high-skilled over low-skilled immigrants, irrespective of their own skill level, employment status or income level.

To elaborate further on potential egocentric economic concerns, we interact respondents' skill levels with the immigrant's job and the immigrant's location in the host country. Respondents might only fear competition with similarly skilled immigrants who live inside their community, and not with those who are locally distant. The three-way interaction does not affect the overall outcome. Immigrants with high-paying jobs are strictly preferred over immigrants with low-paying jobs (A.A3). Overall, we find little evidence for a significant role of egocentric economic concerns in shaping attitudes towards immigrants.



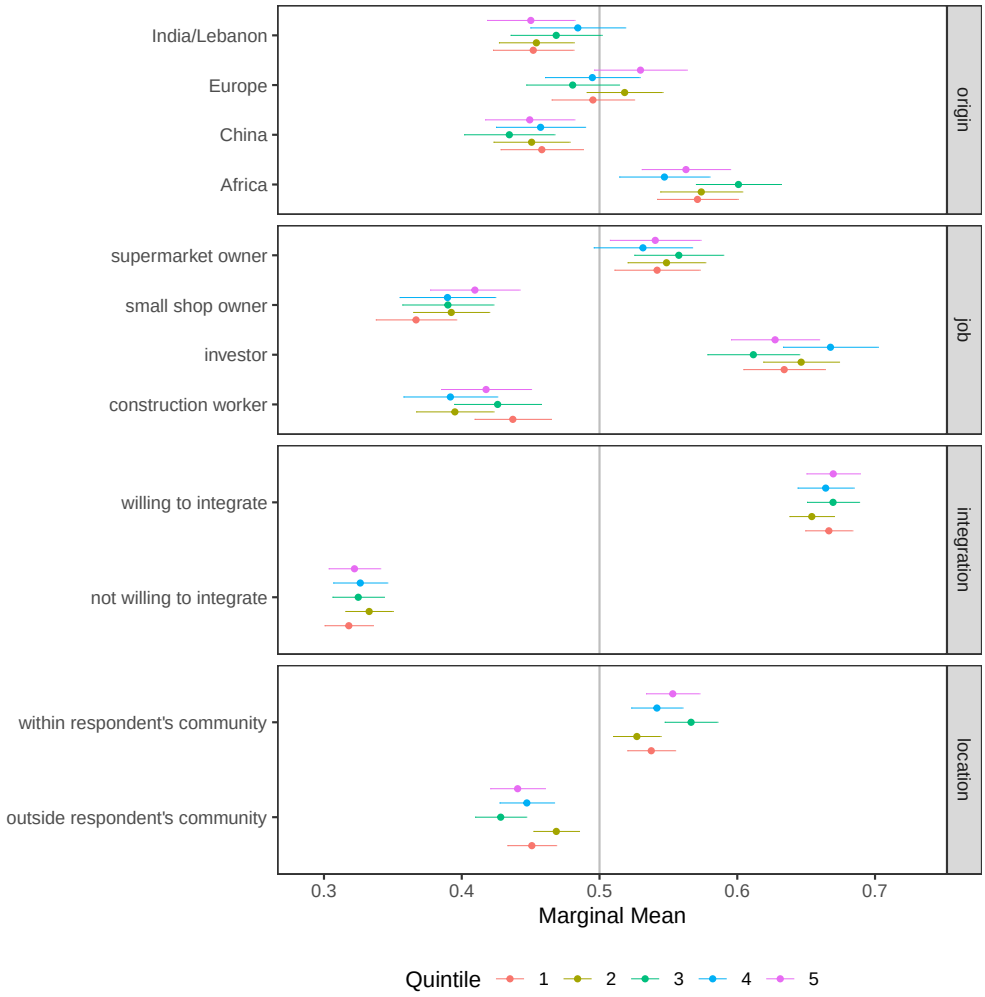
Note: The graph plots Marginal Means for subgroup analysis by skill level, measured by educational attainment. Dots represent point estimates, whiskers around the dots represent 95% confidence intervals.

Figure 2. : Marginal Means for subgroup analysis by skill level



Note: The graph plots Marginal Means for subgroup analysis by employment group, based on the last 7 days before the interview. Dots represent point estimates, whiskers around the dots represent 95% confidence intervals.

Figure 3. : Marginal Means for subgroup analysis by employment group



Note: The graph plots Marginal Means for subgroup analysis by household income quintiles, based on the households' reported income during the last 12 months. Dots represent point estimates, whiskers around the dots represent 95% confidence intervals.

Figure 4. : Marginal Means for subgroup analysis by household income quintiles

To summarize, based on our conjoint analysis, we find that attitudes towards immigrants in Uganda and Senegal are predominantly shaped by sociotropic cultural as well as sociotropic economic concerns. While these findings are in line with studies from the Western context and partly in line

with studies investigating attitudes towards refugees in developing countries, one cannot directly compare point estimates across studies due to different conjoint dimensions and attribute levels. Still, it is worthwhile putting our findings into perspective, comparing them with existing studies, while keeping limitations in mind.

Cultural concerns are often proxied using either nationalities (Hainmueller and Hopkins, 2015; Cogley, Doces and Whitaker, 2019), religion (Alrababa'h et al., 2021) or a combination of both (Bansak, Hainmueller and Hangartner, 2016). Hainmueller and Hopkins (2015) find that in the USA, Iraqi migrants - the culturally most distant origin group in their study - have a 10.6 percentage points lower probability of being preferred for admission compared to Western or Mexican immigrants. These results are comparable in size to our findings of a ten percentage point penalty for Chinese and Indian immigrants. Similarly, Cogley, Doces and Whitaker (2019) vary immigrants' origin in Ivory Coast but obtain mixed results. Contrary to our findings, immigrants from neighboring African countries were less likely to be recommended for naturalization, and Chinese immigrants were more often recommended. Point estimates for non-majority religions are broadly within the same range. Bansak, Hainmueller and Hangartner (2016) find that Muslim asylum-seekers are penalized by 11 percentage points in the USA. Alrababa'h et al. (2021) find that Alawite Muslims and Christians were penalized by 34 and 15 percentage points in Jordan.

Our estimates for immigrants' job categories are also in line with existing studies. Valentino et al. (2019) find that in Europe, immigrants with high-status jobs (computer programmer or engineer) are preferred twelve percentage points over immigrants with low-status jobs (construction or

landscaping worker). Hainmueller and Hopkins (2015) differentiate between immigrants with different jobs in the USA and find that the difference in the likelihood of being preferred between the highest skilled immigrant (doctor) over the lowest skilled immigrant (janitor) is 18.5 percentage points.

The documented effect homogeneity across respondent subgroups, aiming at measuring egocentric economic concerns, is also found in existing studies. But given that education levels, employment status and household income are very broad measure of whether the respondent competes with the potential migrant, one should generally be critical of this standard way of measuring economic competition. A better measure for competition may be the profession, as done by Hainmueller and Hopkins (2015). We did not differentiate between specific profession because in the Sub-Saharan African context, professions are less regulated than in the United States or parts of Europe. There is typically no occupational licensing and workers change their occupations often and also work in different jobs. Assuming that competition takes place within cells defined by occupation did not strike our local partners or us as particularly useful. The survey analysis allows to directly capture labor market competition and sheds more light on the topic.

Our experimental results are robust to several additional specifications. We test for profile order effects (Figure A.A3), attribute order effects (Figure A.A3), and carryover effects (Figure A.A3) - none of which alter our results substantially. Preferences for certain attribute levels do not depend on the profile, the order, or the task they appear in.

Moreover, attribute levels are balanced within dimensions and have the same probability of being sampled. Figure A.A3 presents the frequency of each attribute level in our sample.

To control for potential experimental fatigue among respondents that had to be revisited, we re-estimate AMCEs excluding these households. Estimates remain unchanged, reassuring us that revisiting households did not impact our estimates (Figure A.A3).

We control for two-way interaction effects between different attribute levels by interacting all attribute levels with each other. Results are invariant: Respondents strictly prefer high-skilled over low-skilled immigrants, African over non-African immigrants, immigrants who are willing to integrate over those who are not willing to integrate, and immigrants within their community over those outside - irrespective of the other profiles' attribute levels.

Next, we control for respondents' gender (Figure A.A3) and location (rural-urban, Figure A.A3) by conducting subgroup analysis using marginal means. Differences in estimates are significant at the 5% level for gender subgroups, but absolute differences are negligible. Differences between rural-urban subgroups are insignificant, indicating broadly homogeneous preferences across subgroups.

Finally, we test for heterogeneity by country (Figure A.A3). Conducting our main estimations separately for Uganda and Senegal leaves the overall picture unchanged, with some significant but small differences in effect sizes for the integration and location dimensions. Interestingly, respondents in Senegal view European immigrants significantly more negatively than respondents in Uganda. That fits the impression from the field that people in Uganda and Senegal have different opinions on immigrants from former colonial powers. Based on our experience, there are no signs of particularly negative sentiment towards British immigrants in Uganda. However, in Senegal, French immigrants have been seen much more critically - at least

during personal conversations of the authors.

So far, these results use unweighted data because survey weights are still under development. In future versions, we will also provide estimates that are nationally representative.

B. Survey data analysis

Estimates from our observational analysis complement the findings from our conjoint experiment and offer a more pronounced picture.

First, we have analyze answers to our survey questions, differentiating between immigrants in general and Chinese immigrants in particular. Table 4 compares the differences in means of the main observational variables of interest (see appendix A1 for a visualisation of the outcome variables and the different indicator questions).

In line with results from our conjoint experiment, respondents view Chinese immigrants significantly more negatively than immigrants in general, whereas differences are small in magnitude, and overall attitudes are modestly positive towards both groups.

Respondents also perceive Chinese immigrants as significantly more threatening to their countries' economic situation and immigrants overall are perceived to be more beneficial for the creation of jobs. Differences in perceptions about threats to their individual economic situation are insignificant. Notably, the majority of respondents thinks that both immigrants in general and Chinese immigrants in particular have an average positive effect on the three economic indicators in our survey.

Respondents do not think that either immigrant group poses a threat to Uganda's/Senegal's norms and values, and cultural concerns are significantly

less pronounced for Chinese immigrants.

For comparison, in the ESS, European respondents rate immigration as slightly beneficial for their countries' economy (5.2 on a scale from 0 (bad for the economy) to 10 (good for the economy)) and enriching for their countries' culture (5.4 on a scale from 0 (cultural life undermined) to 10 (cultural life enriched)).[8]

To capture power concerns, we ask about the perceived influence of foreign countries and foreign businesses. These two variables, however, should be taken with a grain of salt. In Uganda, we did not differentiate between foreign governments/businesses in general and those from China in particular. In Senegal, we did, but many data points contain "don't know" or "refuse to answer", especially for the Chinese government and Chinese businesses, due to unawareness of respondents.

Interestingly, while respondents' views on immigrants are generally moderately positive, opinions on foreign governments and businesses are rather negative, on average. And while respondents seem to view Chinese immigrants more negative than immigrants overall, the picture is reversed for power concerns. In line with many other surveys such as Afrobarometer, power concerns are less negative for Chinese governments and businesses.

To identify the channels driving attitudes towards immigrants, we estimate correlates of attitudes towards immigrants using equation 2. Outcome and indicator variables are standardized, we include the full set of controls, and cluster standard errors at the district level. For the Ugandan sample, we extrapolate answers to indicator questions on the perceived influence of

[8]A key feature of the ESS data is that the modal respondents select the middle category and only between half and two-thirds of respondents select other values (Ademmer and Stöhr, 2018). In our data, respondents' opinions are much less centered around the middle of the range, see figure A1.

Table 4—: Difference in means for main observational variables of interest, overall immigrants vs. Chinese immigrants

	(1) Immigrants overall		(2) Immigrants from China		T-test Difference
Variable	N	Mean/SE	N	Mean/SE	(1)-(2)
Allow immgrants to come to home coutry: none (=1) to many (=4)	2668	2.851	2652	2.580	0.272***
		(0.015)		(0.015)	
Are immigrants good or bad for respondet/household's economy: good (=1) to bad (=5)	2633	2.782	2634	2.802	-0.020
		(0.020)		(0.019)	
Are immigrants good or bad for country's economy: good (=1) to bad (=5)	2632	2.656	2624	2.796	-0.140***
		(0.023)		(0.023)	
Do immigrants take or create jobs: create (=0) to take (=10)	2629	4.580	2622	3.990	0.590***
		(0.061)		(0.062)	
Do immigrants undermine country's norms and values: not at all (=0) to a lot (=10)	2638	3.697	2618	2.494	1.202***
		(0.065)		(0.056)	
Do foreign governments have to little or too much influence in country: too little (=0) to to much (=10)	2422	5.966	1257	3.437	2.529***
		(0.070)		(0.096)	
Do foreign businesses have to little or too much influence in country: too little (=0) to too much (=10)	2420	5.907	1265	4.570	1.337***
		(0.066)		(0.100)	

Notes: The value displayed for t-tests are the differences in the means across the groups. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

foreign governments and business to the missing variables for the perceived influence of Chinese governments and businesses.

V.B visualizes the main results, overlaying findings for attitudes towards immigrants in general (red) and Chinese immigrants in particular (blue). Dots plot point estimates, whiskers around dots plot 95% confidence intervals. Indicator variables proxying respondents' concerns are coded such that more negative values represent stronger concerns. Outcome variables proxying respondents' attitudes towards immigrants are coded such that more positive values represent more positive attitudes. Thus, if a specific concerns is a significant predictor of attitudes towards immigrants, their coefficient should be negative and significant. Detailed results can be found in Table A7 in the appendix.

Results from our observational OLS regression largely corroborate the experimental findings from the conjoint experiment. Egocentric economic concerns do not seem to be a major driver of attitudes towards immigrants. Despite explicitly asking respondents about immigrants' threat to their own and their households' economic situation, egocentric economic concerns are not a significant predictor of attitudes towards immigrants in general, and are not significantly related to attitudes towards Chinese immigrants.

Larger sociotropic economic concerns, measured by asking respondents about immigrants' effects on the host economy as a whole and on the job market, are associated with significantly more negative attitudes towards immigrants, underpinning the importance of immigrants' ability to contribute to the host country's economy. A one standard deviation increase in sociotropic economic (job) concerns is associated with a 0.23 (0.09) standard deviation decrease in attitudes towards immigrants in general, and a 0.27

(0.14) standard deviation decrease in attitudes towards Chinese immigrants in particular.

While results from the conjoint experiment highlight the importance of sociotropic cultural concerns (measured by immigrants' origin and willingness to integrate), we only observe such a pattern in the observational analysis for immigrants in general. Regarding Chinese immigrants in particular, respondents do not seem to fear that current immigrants undermine the country's norms and values.

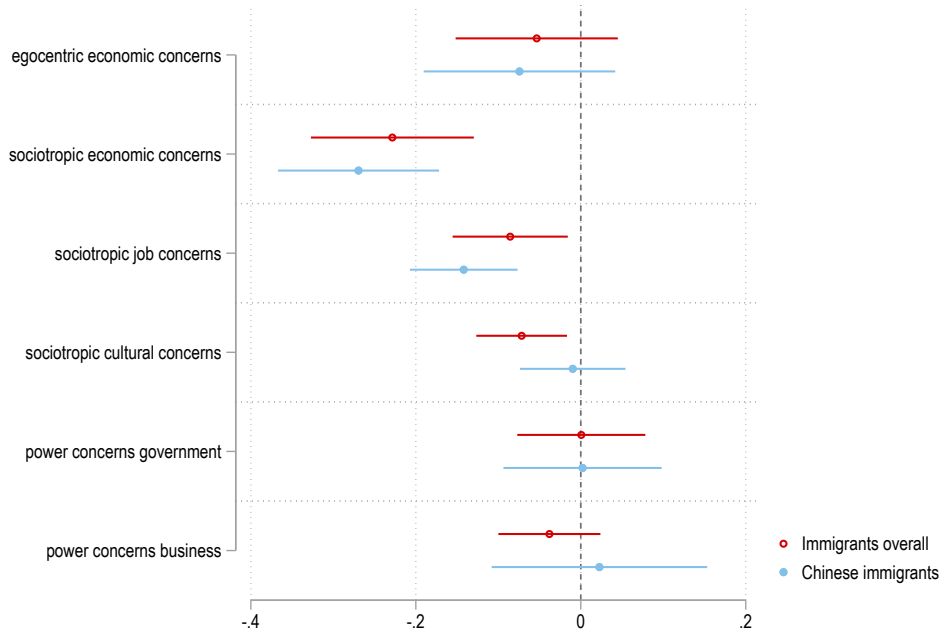
Although we find pronounced power concerns in absolute terms, their predictive power for attitudes towards immigrants is statistically insignificant in both specifications. Respondents who have relatively greater power concerns are not more critical of immigrants. While this finding contradicts our hypothesis about power concerns, it is in line with several conversations we had with locals in the field. In Uganda and Senegal, people are worried about the influence about foreign governments and businesses, but they clearly differentiate between governments and businesses and immigrants themselves.

Altogether, while Chinese immigrants are perceived slightly more negatively and economically more threatening, attitude formation towards this group is not systematically different from that towards immigration overall. Specifically, while the level of the estimation varies, the concerns shaping the attitudes are equal across migration groups.

Sociotropic economic concerns inquiring about effects on the host country's economy as a whole are the most important determinant of attitudes towards both groups of immigrants. The point estimates for sociotropic economic concerns are significantly larger than those for job concerns, or any

other type of concerns (Table A8).

Given the shortcomings of the indicator variables measuring power concerns, we re-estimate our model without power concerns. We also estimate the main specification without control variables to maximize our sample size. Estimated coefficients remain robust in both additional specifications (A7).



Note: The graph plots OLS estimates for equation (standardized attitudes = standardized concerns including controls). In Uganda, power concerns were not independently collected for Chinese immigrants, i.e., only in general. In Senegal, we will also collect them separately for all migrants and the Chinese specifically. For table see A7.

Figure 5. : OLS estimates for equation 2. Outcome and indicator variables are standardized. The regression includes the full set of controls.

VI. Conclusion

While there is a vast literature on attitudes towards immigrants in Western countries, little systematic knowledge of the perception of immigration

in Sub-Saharan Africa exists. Understanding what Africans think about migration and what influences their opinions will be important for key policy developments, such as the planned African-Union-wide visa-free travel and similar plans made in tandem with the African Continental Free Trade Agreement. Another important trend affecting countries is the increasing activity of China in Africa. There have been both financial investment and increasing Chinese immigration to Sub-Saharan Africa, yet the existing knowledge about the perception of this immigration is mostly anecdotal. To fill this gap in the literature, we provide the first large-scale study of attitudes towards immigrants in Sub-Saharan countries that uses a causal framework. We study attitudes towards immigrants in general and focus on specific ethnic groups, particularly the Chinese, whose increasing presence in Africa is seen by many as the most important ongoing geopolitical shift involving the continent. We select two countries for our study - Uganda and Senegal. Uganda is the top refugee-hosting country in Africa and one of the top five hosting countries in the world. The country has been praised for its open-door policy and progressive refugee policy. Senegal, by contrast, is well-known for being one of the main origin countries of regular and irregular migration to the EU. Its role as both an origin and a destination country within ECOWAS is less well-known. Furthermore, both countries have immigrant groups from Asia whose presence dates back to colonial times. More recently, they experienced substantial immigration from China. Studying attitudes towards immigration in two main immigration countries in East and West Africa provides external validity to our findings. Using experimental and survey-based estimates, we analyze whether egocentric economic, sociotropic economic, cultural, or power concerns determine attitudes toward

immigrants.

Our findings from the experimental analysis provide quantitative evidence that sociotropic cultural and sociotropic economic concerns are strong drivers of immigration sentiment. Respondents react most strongly to immigrants' willingness to integrate into the local society and their economic effect on the Ugandan [Senegalese] economy.

The results provide additional evidence that anti-migration sentiments are not primarily driven by egocentric economic concerns. The results based on the survey data corroborate these findings. Immigrants are judged for whether they are perceived as good for society. Whether respondents benefit personally is not as important for their assessment.

Immigrants from China, in particular, are perceived less positively and economically more threatening than immigrants in general. However, while differences in perceptions between these two groups are statistically significant, they are small in absolute terms.

Our results furthermore indicate that respondents are concerned about the power foreign businesses and governments have. However, differences in power concerns do not cause significant differences in the assessment of immigrants. Respondents thus seem to distinguish between these more abstract concerns, their attitudes towards immigrants, and their resulting preferences for immigration policy.

Overall, our study shows that despite the vastly different economic and contextual factors, the determinants of attitudes towards migrants are remarkably similar to those already established by research conducted in the US and Europe. Attitude formation processes thus seem to carry over from context to context even if the level of competition required to make a living

is vastly different. Notably, despite much more basic economic concerns, the respondents in our survey did not show more egocentric concerns.

Our results provide support for policy-makers who are planning to allow more immigration, for example, by easing migration restrictions within the African Union. They also suggest that when aiming for a reduction in tensions and xenophobia, communicating the positive impacts of immigration on society at large and promoting immigrants' willingness to integrate into host societies are worthwhile mechanisms to target.

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Appendix

A1. Descriptives

Table A1—: Attitudes towards immigrants: observational variables

	mean	sd	min	max
Allow people from other countries	2.15	0.77	1.00	4.00
Allow people from China	2.42	0.78	1.00	4.00
Immigrants good or bad for economy	3.34	1.15	1.00	5.00
Chinese good or bad for economy	3.20	1.19	1.00	5.00
Immigrants take or create jobs	5.42	3.13	0.00	10.00
Chinese take or create jobs	6.01	3.17	0.00	10.00
Immigrants good or bad for household's economy	3.22	1.01	1.00	5.00
Chinese good or bad for household's economy	3.20	1.00	1.00	5.00
Agree? Norms and values threatened by immigrants	3.70	3.34	0.00	10.00
Agree? Norms and values threatened by Chinese	2.49	2.85	0.00	10.00
Influence foreign governments	5.97	3.44	0.00	10.00
Influence Chinese governments	3.44	3.39	0.00	10.00
Influence foreign businesses	5.91	3.25	0.00	10.00
Influence Chinese businesses	4.57	3.56	0.00	10.00
Observations	2700			

Don't know and *Refused to answer* are coded as missing.

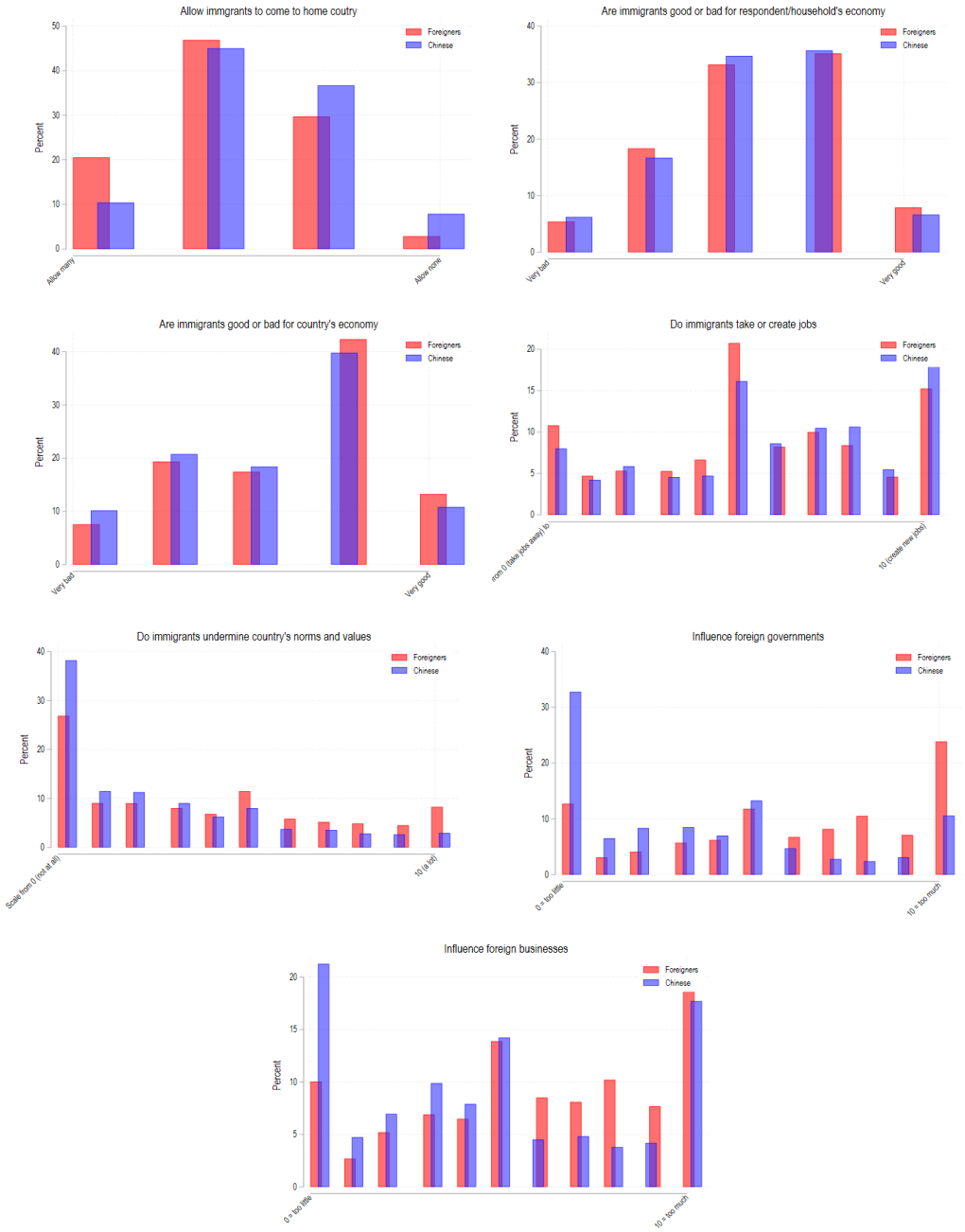


Figure A1. : Histograms for main dependent and explanatory variables

A2. Conjoint tables

Table A2—: Attitudes towards immigrants - AMCE

feature	level	estimate	std.error	p
origin	Africa	0.00		
origin	China	-0.12	0.01	0.00
origin	Europe	-0.07	0.01	0.00
origin	India/Lebanon	-0.11	0.01	0.00
job	construction worker	0.00		
job	investor	0.22	0.01	0.00
job	small shop owner	-0.02	0.01	0.05
job	supermarket owner	0.14	0.01	0.00
integration	not willing to integrate	0.00		
integration	willing to integrate	0.34	0.01	0.00
location	outside respondent's community	0.00		
location	within respondent's community	0.09	0.01	0.00

Table A3—: AMCE: linear hypothesis tests for differences in estimated coefficients

(a) Origin dimension

	β_{Europe}	β_{China}
$\beta_{India/Lebanon}$	0.00	0.22
β_{Europe}		0.00

(b) Job dimension

	$\beta_{Smallshop}$	$\beta_{Investor}$
$\beta_{Supermarket}$	0.00	0.00
$\beta_{Smallshop}$		0.00

Note: Wald test for differences between estimated coefficients, estimated using the *linear.hypothesis* command in R. In order to perform this test, we re-estimated AMCEs from equation 1 approximately using OLS, whereby estimates remain virtually unchanged. Dimensions *Integration* and *Location* can be omitted as they have only two attribute levels.

Table A4—: Attitudes towards immigrants - Marginal Means by skill level

BY	feature	level	estimate	std.error	p
high skilled	origin	Africa	0.58	0.01	0.00
high skilled	origin	China	0.45	0.01	0.00
high skilled	origin	Europe	0.51	0.01	0.58
high skilled	origin	India/Lebanon	0.46	0.01	0.00
high skilled	job	construction worker	0.41	0.01	0.00
high skilled	job	investor	0.65	0.01	0.00
high skilled	job	small shop owner	0.38	0.01	0.00
high skilled	job	supermarket owner	0.56	0.01	0.00
high skilled	integration	not willing to integrate	0.32	0.01	0.00
high skilled	integration	willing to integrate	0.67	0.01	0.00
high skilled	location	outside respondent's community	0.46	0.01	0.00
high skilled	location	within respondent's community	0.54	0.01	0.00
low skilled	origin	Africa	0.56	0.01	0.00
low skilled	origin	China	0.46	0.01	0.00
low skilled	origin	Europe	0.50	0.01	0.98
low skilled	origin	India/Lebanon	0.46	0.01	0.00
low skilled	job	construction worker	0.41	0.01	0.00
low skilled	job	investor	0.62	0.01	0.00
low skilled	job	small shop owner	0.40	0.01	0.00
low skilled	job	supermarket owner	0.54	0.01	0.00
low skilled	integration	not willing to integrate	0.33	0.01	0.00
low skilled	integration	willing to integrate	0.66	0.01	0.00
low skilled	location	outside respondent's community	0.44	0.01	0.00
low skilled	location	within respondent's community	0.55	0.01	0.00

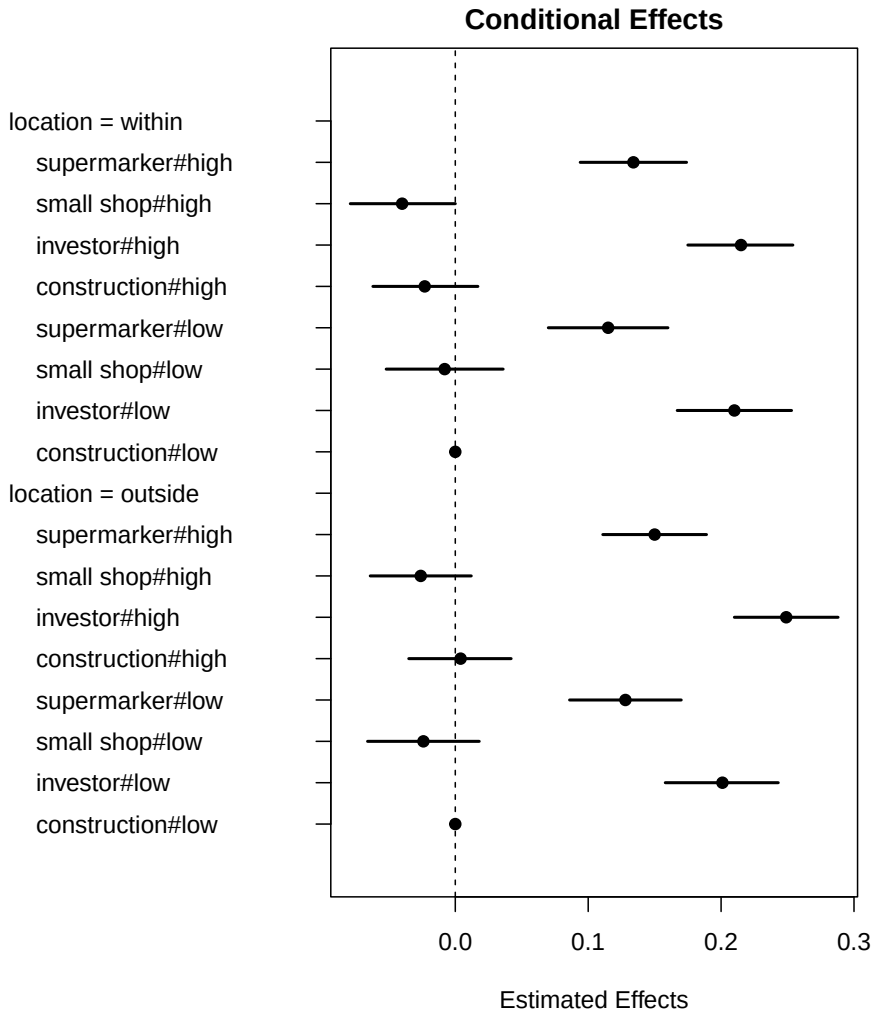
Table A5—: Attitudes towards immigrants - Marginal Means by employment status

BY	feature	level	estimate	std.error	p
not working, doesn't want	origin	Africa	0.59	0.04	0.02
not working, doesn't want	origin	China	0.42	0.04	0.04
not working, doesn't want	origin	Europe	0.45	0.05	0.32
not working, doesn't want	origin	India/Lebanon	0.51	0.04	0.76
not working, doesn't want	job	construction worker	0.44	0.04	0.12
not working, doesn't want	job	investor	0.64	0.05	0.00
not working, doesn't want	job	small shop owner	0.30	0.03	0.00
not working, doesn't want	job	supermarket owner	0.64	0.05	0.00
not working, doesn't want	integration	not willing to integrate	0.32	0.02	0.00
not working, doesn't want	integration	willing to integrate	0.69	0.02	0.00
not working, doesn't want	location	outside respondent's community	0.45	0.03	0.04
not working, doesn't want	location	within respondent's community	0.54	0.02	0.09
not working, wanting	origin	Africa	0.57	0.01	0.00
not working, wanting	origin	China	0.44	0.01	0.00
not working, wanting	origin	Europe	0.50	0.01	0.75
not working, wanting	origin	India/Lebanon	0.48	0.01	0.07
not working, wanting	job	construction worker	0.41	0.01	0.00
not working, wanting	job	investor	0.62	0.01	0.00
not working, wanting	job	small shop owner	0.38	0.01	0.00
not working, wanting	job	supermarket owner	0.58	0.01	0.00
not working, wanting	integration	not willing to integrate	0.33	0.01	0.00
not working, wanting	integration	willing to integrate	0.66	0.01	0.00
not working, wanting	location	outside respondent's community	0.45	0.01	0.00
not working, wanting	location	within respondent's community	0.55	0.01	0.00
studying	origin	Africa	0.59	0.02	0.00
studying	origin	China	0.44	0.02	0.01
studying	origin	Europe	0.50	0.02	0.92
studying	origin	India/Lebanon	0.45	0.02	0.04
studying	job	construction worker	0.45	0.02	0.01
studying	job	investor	0.62	0.02	0.00
studying	job	small shop owner	0.37	0.02	0.00
studying	job	supermarket owner	0.55	0.02	0.03
studying	integration	not willing to integrate	0.34	0.01	0.00
studying	integration	willing to integrate	0.65	0.01	0.00
studying	location	outside respondent's community	0.45	0.01	0.00
studying	location	within respondent's community	0.55	0.01	0.00
working	origin	Africa	0.57	0.01	0.00
working	origin	China	0.46	0.01	0.00
working	origin	Europe	0.50	0.01	0.96
working	origin	India/Lebanon	0.46	0.01	0.00
working	job	construction worker	0.42	0.01	0.00
working	job	investor	0.64	0.01	0.00
working	job	small shop owner	0.40	0.01	0.00
working	job	supermarket owner	0.52	0.01	0.06
working	integration	not willing to integrate	0.32	0.01	0.00
working	integration	willing to integrate	0.67	0.01	0.00
working	location	outside respondent's community	0.45	0.01	0.00
working	location	within respondent's community	0.54	0.01	0.00

Table A6—: Attitudes towards immigrants - Marginal Means by household income quintiles

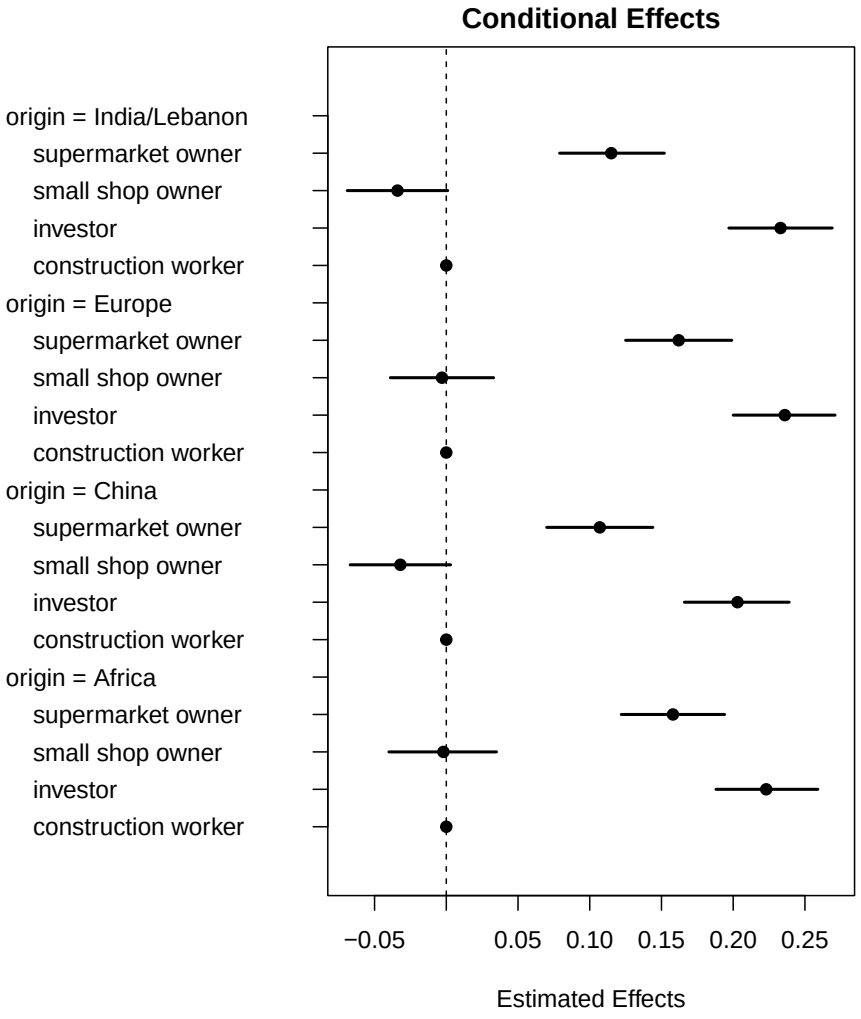
BY	feature	level	estimate	std.error	p
1	origin	Africa	0.57	0.01	0.00
1	origin	China	0.46	0.02	0.01
1	origin	Europe	0.50	0.02	0.75
1	origin	India/Lebanon	0.45	0.01	0.00
1	job	construction worker	0.44	0.01	0.00
1	job	investor	0.63	0.02	0.00
1	job	small shop owner	0.37	0.01	0.00
1	job	supermarket owner	0.54	0.02	0.01
1	integration	not willing to integrate	0.32	0.01	0.00
1	integration	willing to integrate	0.67	0.01	0.00
1	location	outside respondent's community	0.45	0.01	0.00
1	location	within respondent's community	0.54	0.01	0.00
2	origin	Africa	0.57	0.02	0.00
2	origin	China	0.45	0.01	0.00
2	origin	Europe	0.52	0.01	0.19
2	origin	India/Lebanon	0.45	0.01	0.00
2	job	construction worker	0.40	0.01	0.00
2	job	investor	0.65	0.01	0.00
2	job	small shop owner	0.39	0.01	0.00
2	job	supermarket owner	0.55	0.01	0.00
2	integration	not willing to integrate	0.33	0.01	0.00
2	integration	willing to integrate	0.65	0.01	0.00
2	location	outside respondent's community	0.47	0.01	0.00
2	location	within respondent's community	0.53	0.01	0.00
3	origin	Africa	0.60	0.02	0.00
3	origin	China	0.43	0.02	0.00
3	origin	Europe	0.48	0.02	0.26
3	origin	India/Lebanon	0.47	0.02	0.06
3	job	construction worker	0.43	0.02	0.00
3	job	investor	0.61	0.02	0.00
3	job	small shop owner	0.39	0.02	0.00
3	job	supermarket owner	0.56	0.02	0.00
3	integration	not willing to integrate	0.32	0.01	0.00
3	integration	willing to integrate	0.67	0.01	0.00
3	location	outside respondent's community	0.43	0.01	0.00
3	location	within respondent's community	0.57	0.01	0.00
4	origin	Africa	0.55	0.02	0.00
4	origin	China	0.46	0.02	0.01
4	origin	Europe	0.49	0.02	0.77
4	origin	India/Lebanon	0.48	0.02	0.37
4	job	construction worker	0.39	0.02	0.00
4	job	investor	0.67	0.02	0.00
4	job	small shop owner	0.39	0.02	0.00
4	job	supermarket owner	0.53	0.02	0.08
4	integration	not willing to integrate	0.33	0.01	0.00
4	integration	willing to integrate	0.66	0.01	0.00
4	location	outside respondent's community	0.45	0.01	0.00
4	location	within respondent's community	0.54	0.01	0.00
5	origin	Africa	0.56	0.02	0.00
5	origin	China	0.45	0.02	0.00
5	origin	Europe	0.53	0.02	0.08
5	origin	India/Lebanon	0.45	0.02	0.00
5	job	construction worker	0.42	0.02	0.00
5	job	investor	0.63	0.02	0.00
5	job	small shop owner	0.41	0.02	0.00
5	job	supermarket owner	0.54	0.02	0.02
5	integration	not willing to integrate	0.32	0.01	0.00
5	integration	willing to integrate	0.67	0.01	0.00
5	location	outside respondent's community	0.44	0.01	0.00
5	location	within respondent's community	0.55	0.01	0.00

A3. Conjoints: robustness checks



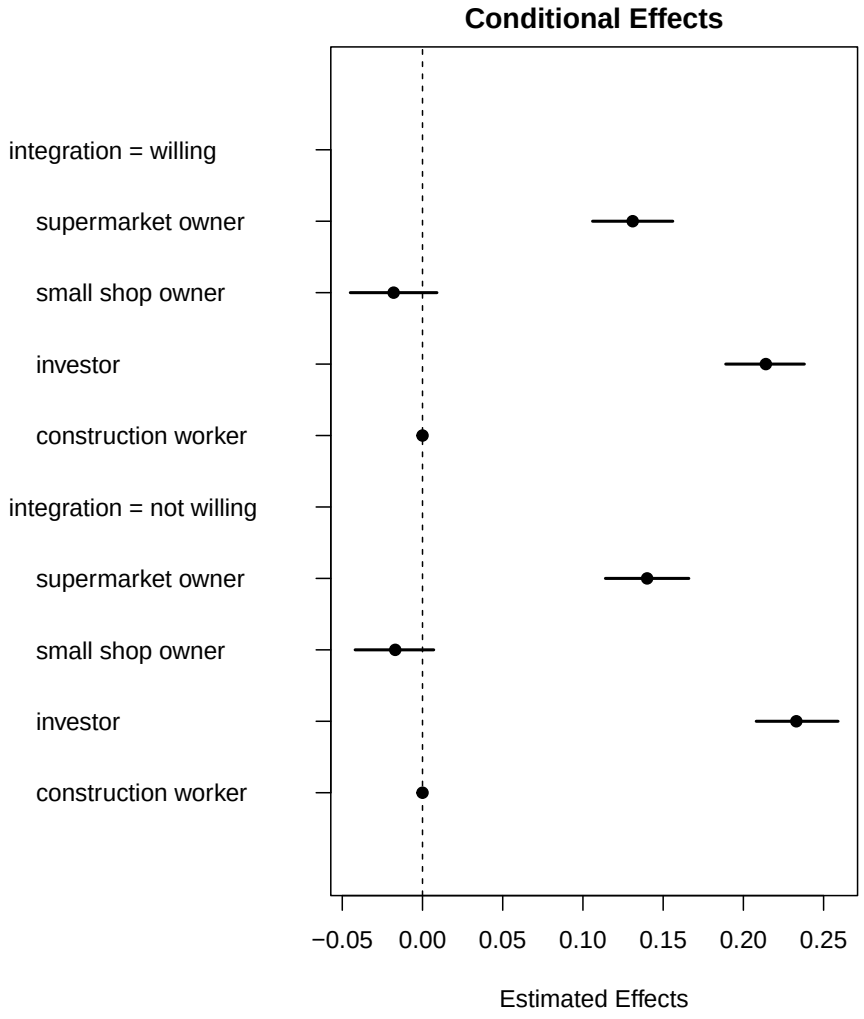
Note: The graph plots Average Marginal Interaction Effects for immigrants' job, immigrants' location and respondents' skill level, measured by educational attainment. Dots represent point estimates, whiskers around the dots represent 95% confidence intervals.

Figure A2. : AMIE for skill level and location



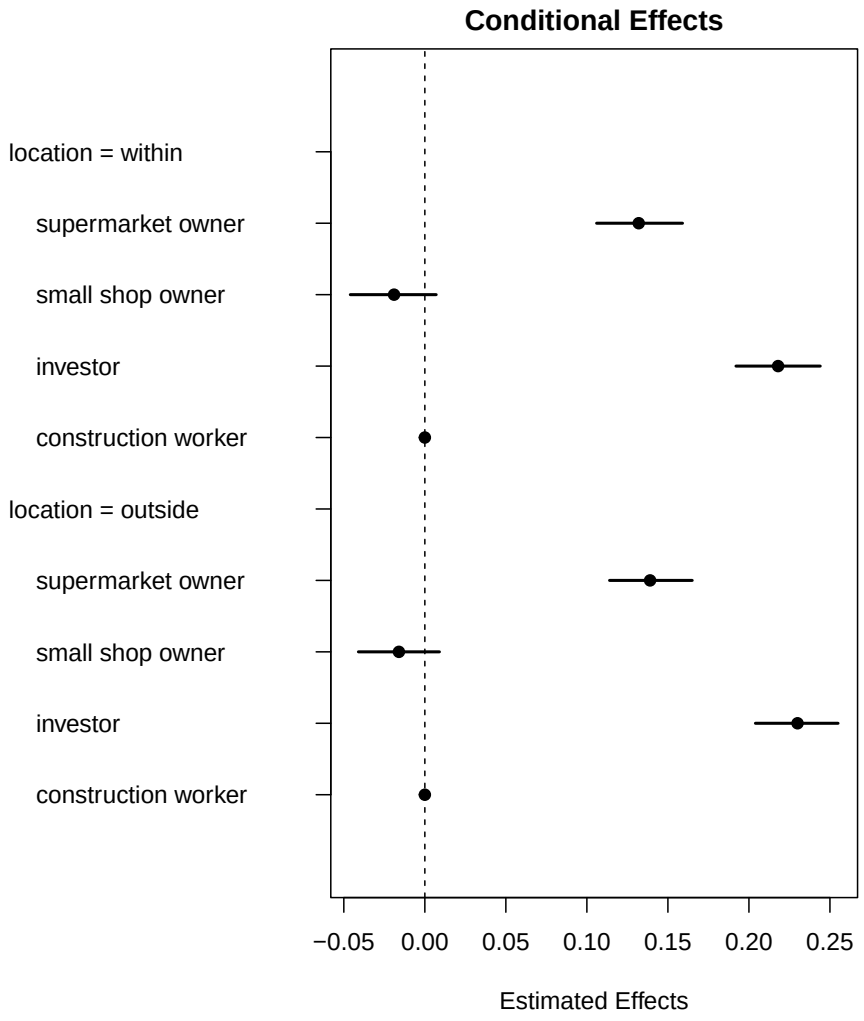
Note: The graph plots Average Marginal Interaction Effects for immigrants' job and immigrants' location. Dots represent point estimates, whiskers around the dots represent 95% confidence intervals.

Figure A3. : AMIE for job and location



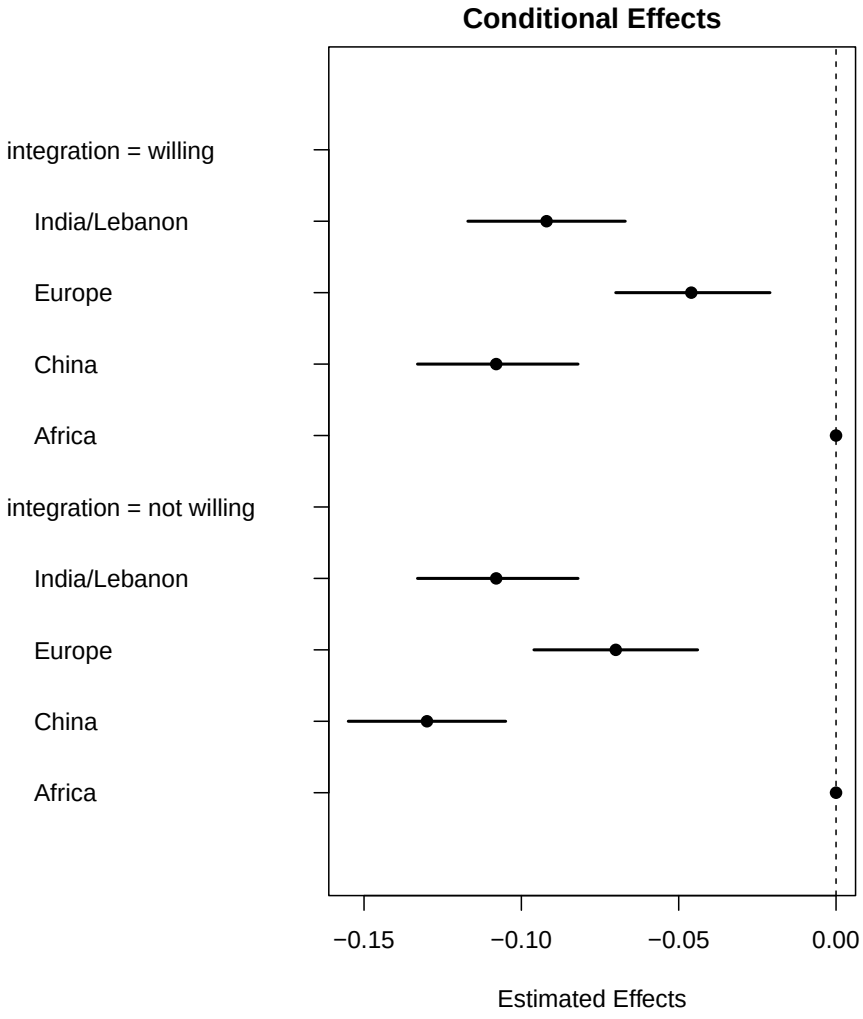
Note: The graph plots Average Marginal Interaction Effects for immigrants' job and immigrants' willingness to integrate. Dots represent point estimates, whiskers around the dots represent 95% confidence intervals.

Figure A4. : AMIE for job and willingness to integrate



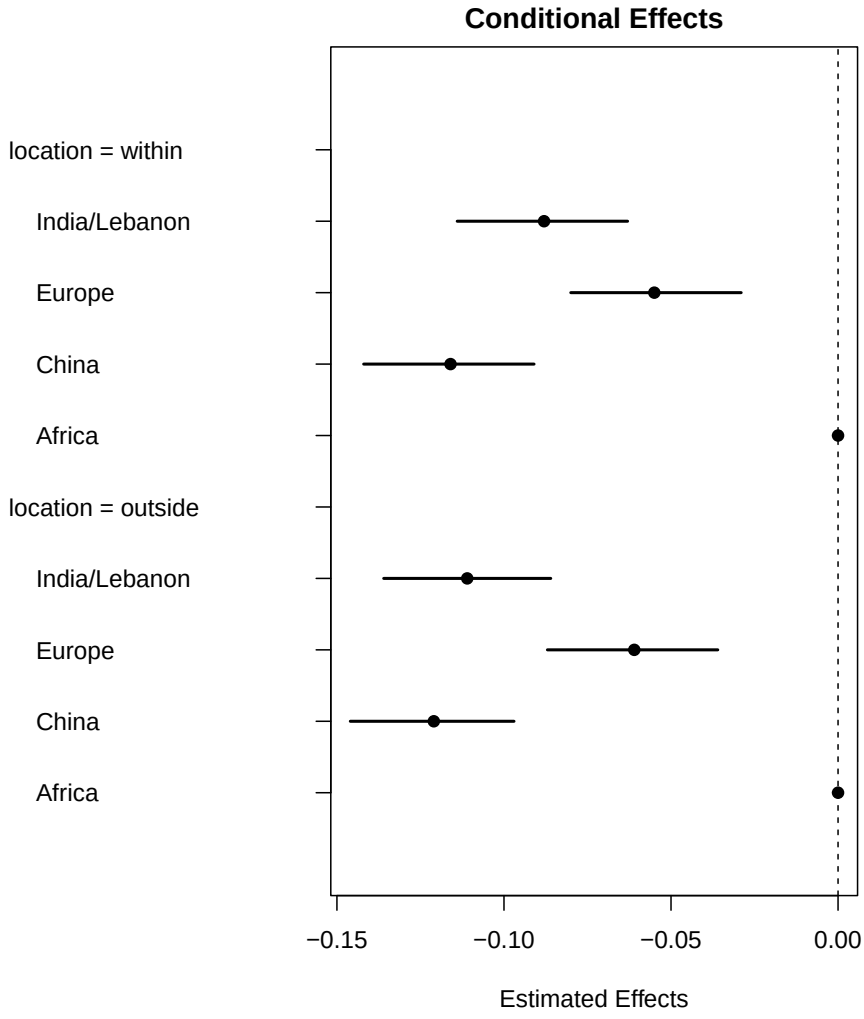
Note: The graph plots Average Marginal Interaction Effects for immigrants' job and immigrants' location. Dots represent point estimates, whiskers around the dots represent 95% confidence intervals.

Figure A5. : AMIE for job and location



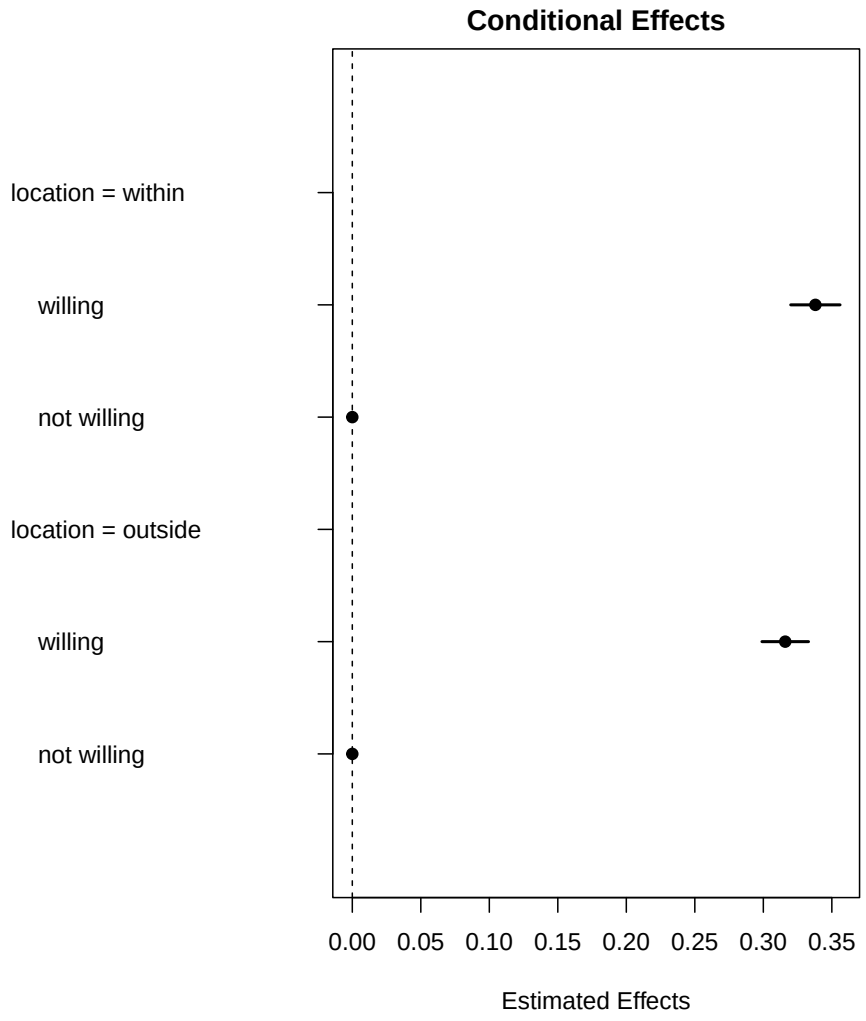
Note: The graph plots Average Marginal Interaction Effects for immigrants' origin and immigrants' willingness to integrate. Dots represent point estimates, whiskers around the dots represent 95% confidence intervals.

Figure A6. : AMIE for origin and willingness to integrate



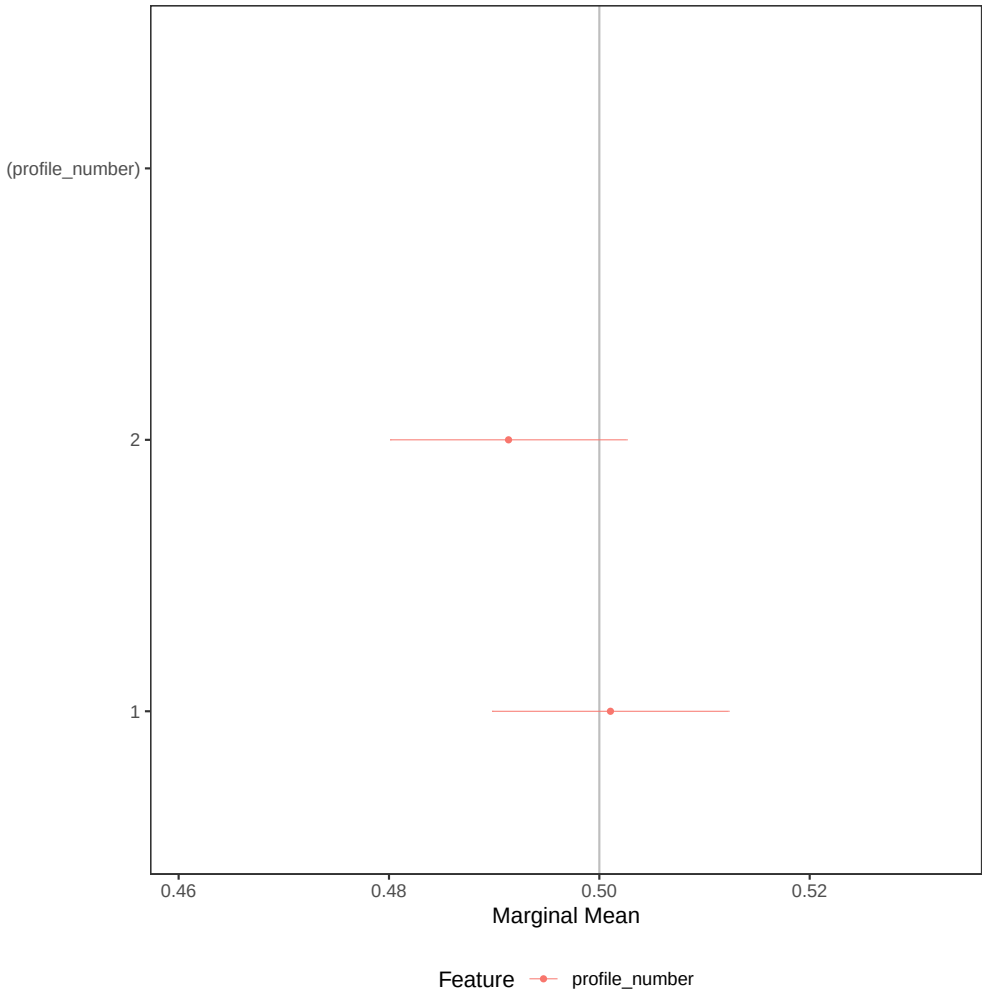
Note: The graph plots Average Marginal Interaction Effects for immigrants' origin and immigrants' location. Dots represent point estimates, whiskers around the dots represent 95% confidence intervals.

Figure A7. : AMIE for origin and location



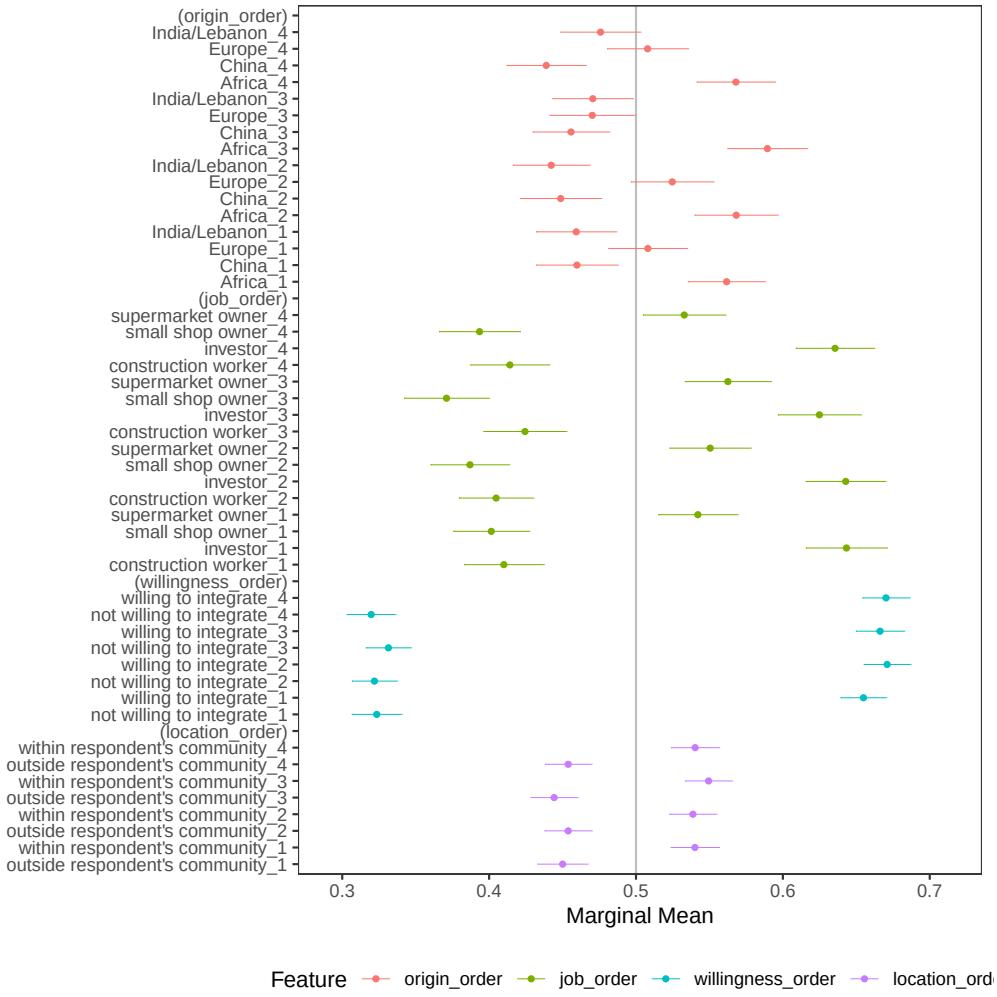
Note: The graph plots Average Marginal Interaction Effects for immigrants' willingness to integrate and immigrants' location. Dots represent point estimates, whiskers around the dots represent 95% confidence intervals.

Figure A8. : AMIE for willingness to integrate and location



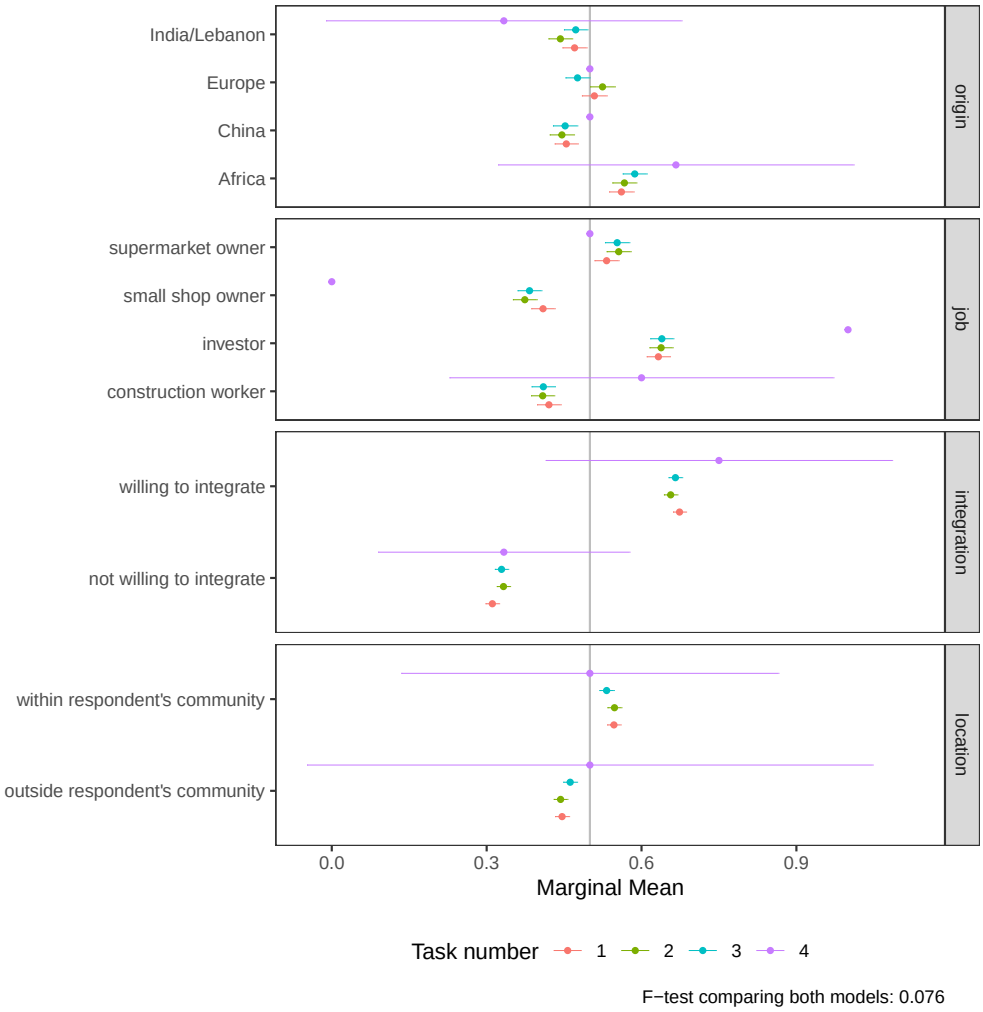
Note: The graph shows marginal means for equation 1 by profile order to test for profile order effects.

Figure A9. : MMs for equation 1 by profile order



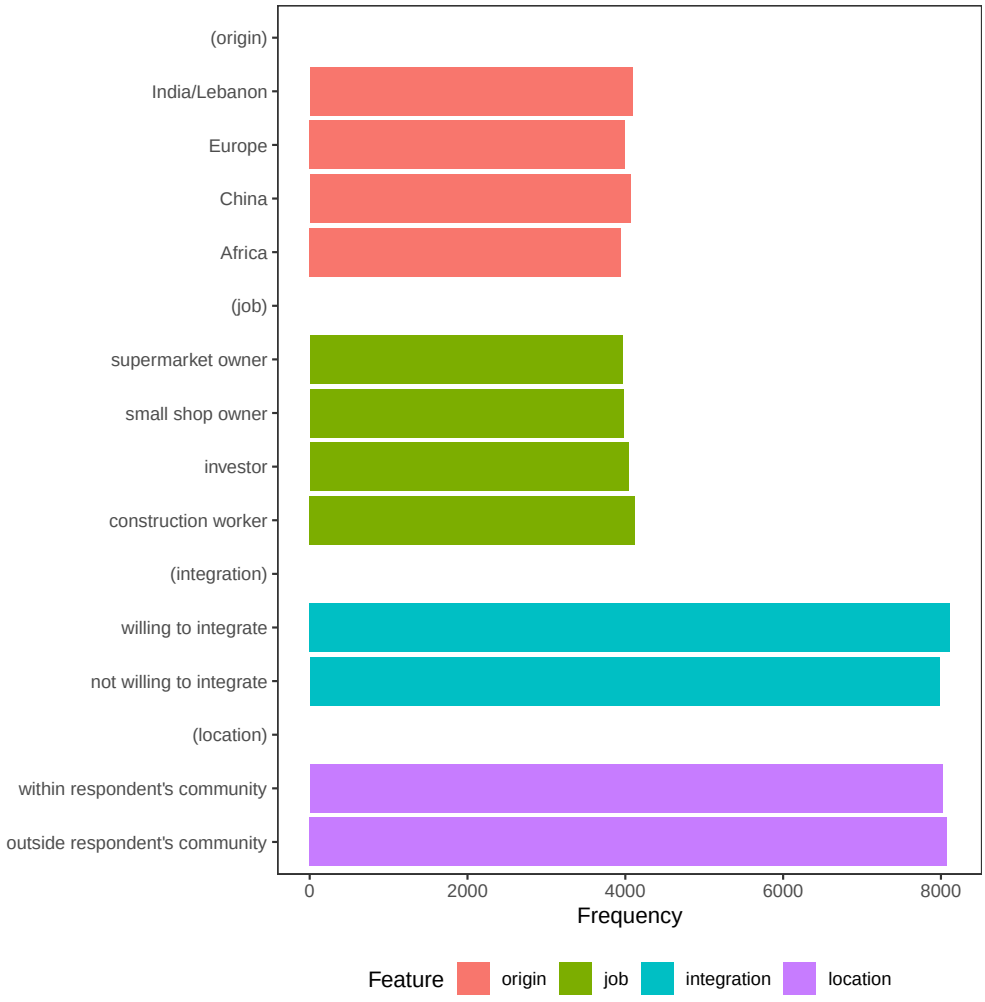
Note: The graph shows marginal means for equation 1 by attribute order to test for attribute order effects.

Figure A10. : MMs for equation 1 by attribute order



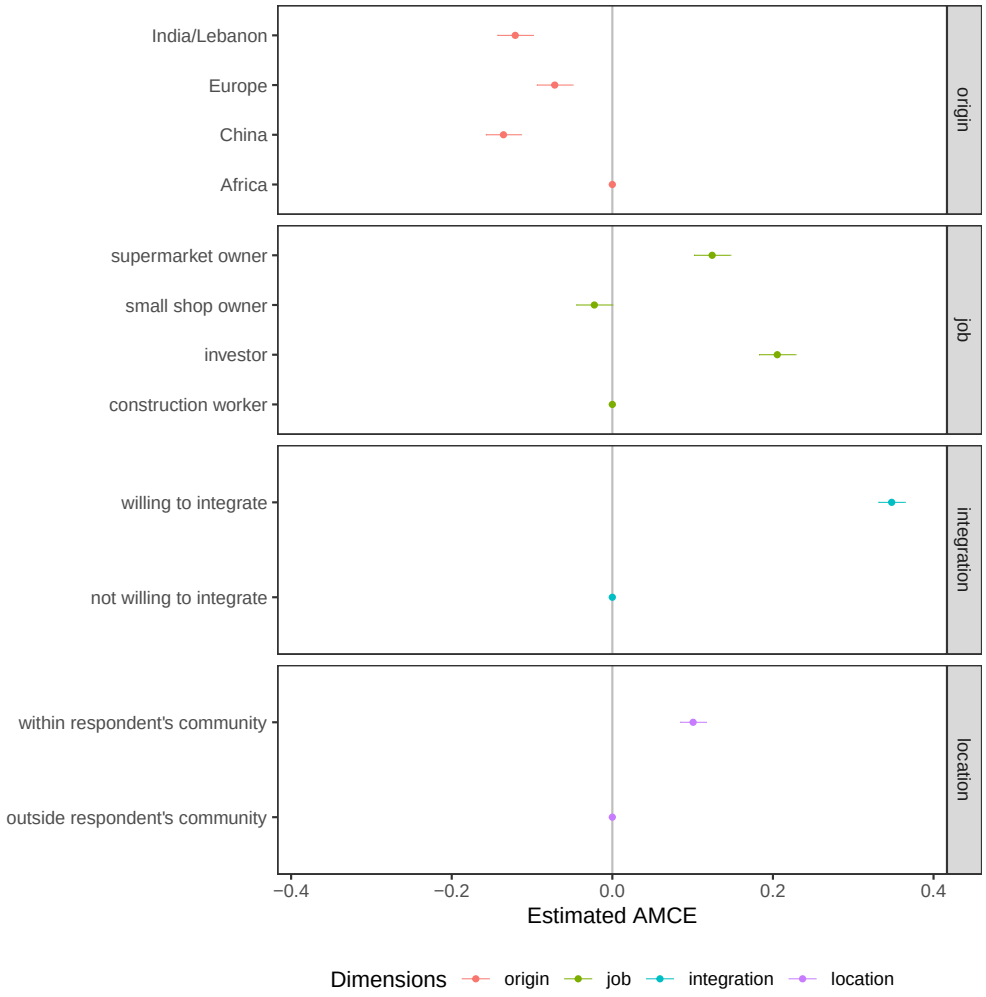
Note: The graph shows marginal means for equation 1 by task to test for carryover effects. Task number four has only been executed 6 times, therefore standard errors are huge.

Figure A11. : MMs for equation 1 by task



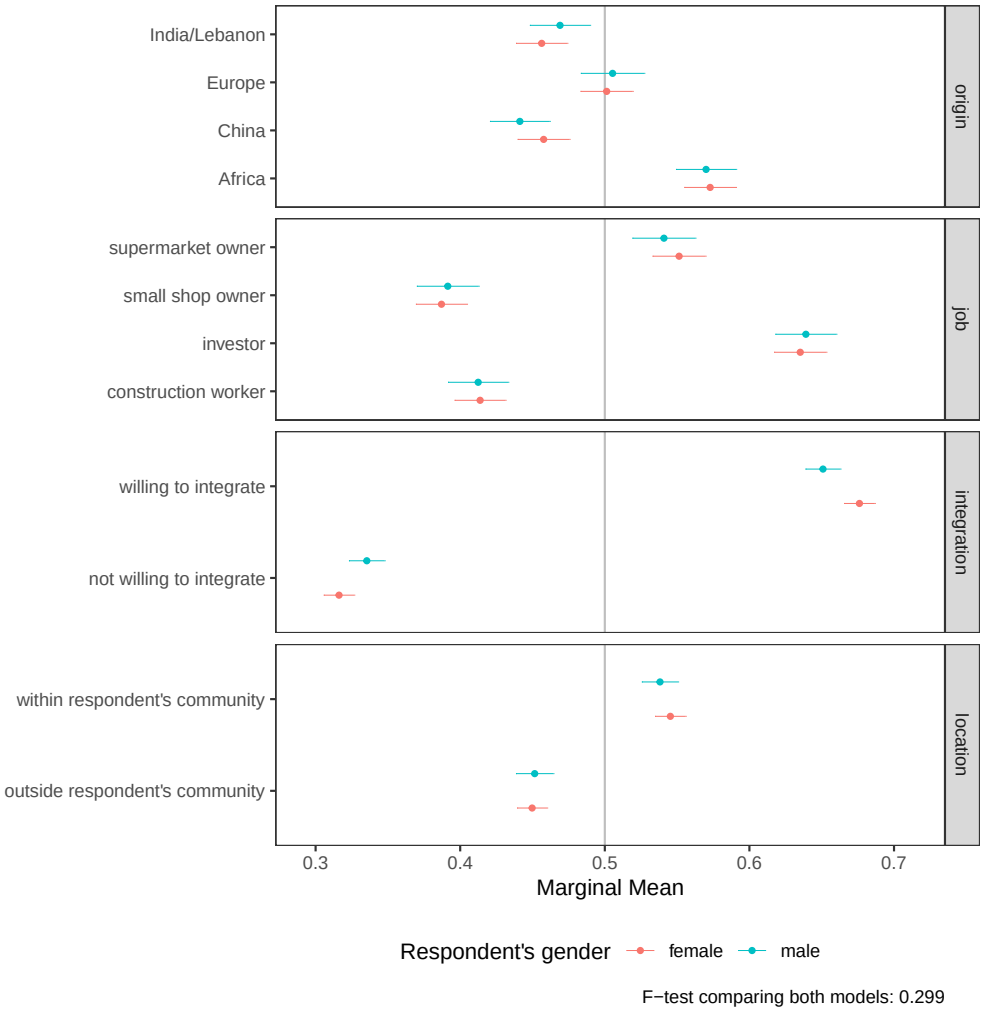
Note: The graph shows the frequency of each attribute level in the Ugandan and Senegalese sample.

Figure A12. : Frequency of attribute levels



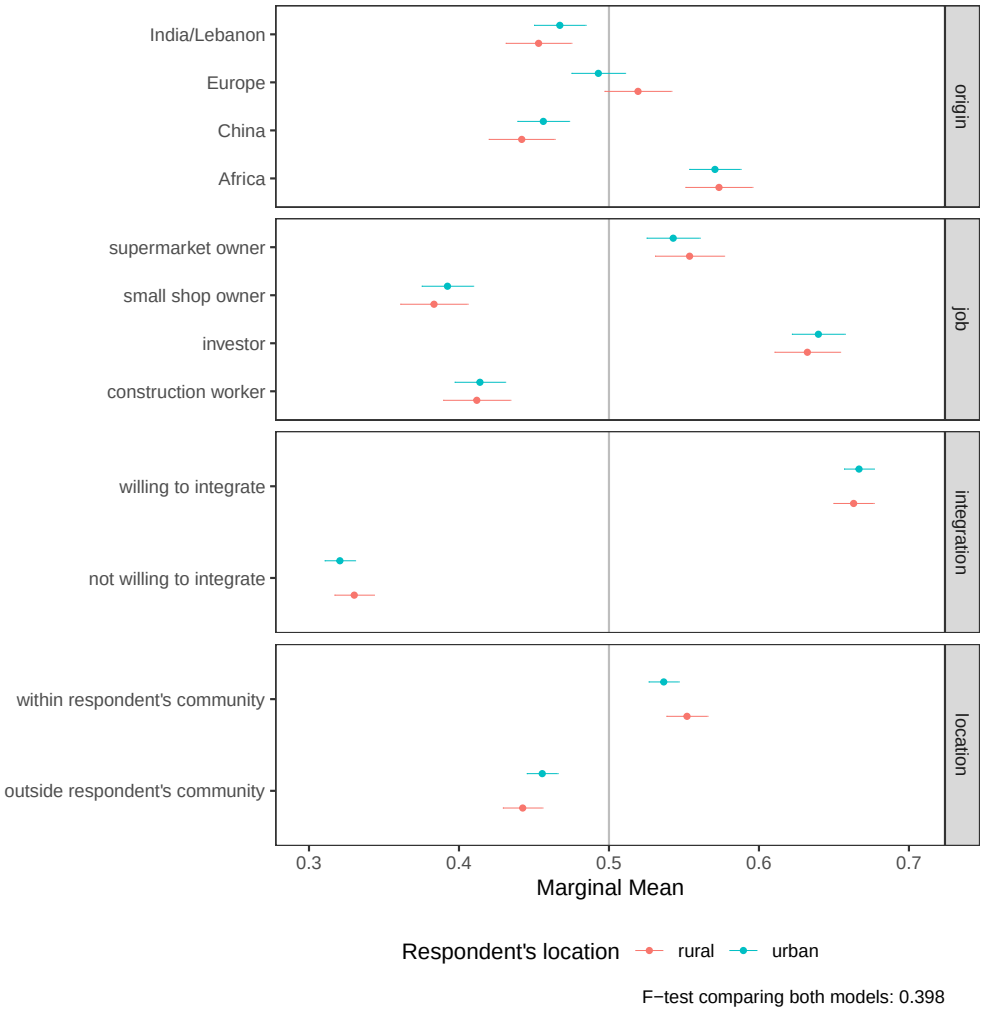
Note: The graph shows AMCEs for equation 1 excluding the respondents that had to be revisited.

Figure A13. : AMCE for equation 1 excluding the respondents that had to be revisited



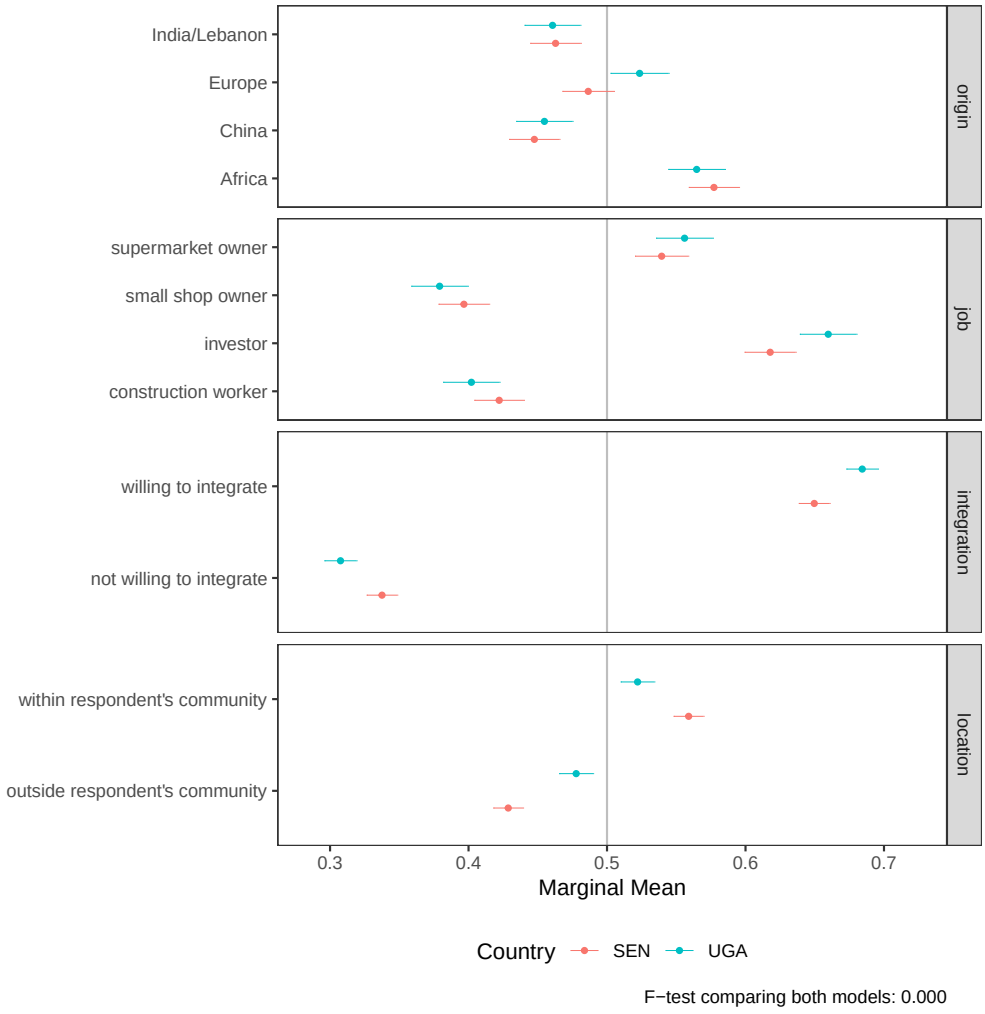
Note: The graph shows marginal means for equation 1 by respondent's gender.

Figure A14. : MMs for equation 1 by respondent's gender



Note: The graph shows marginal means for equation 1 by respondent's location (rural-urban).

Figure A15. : MMs for equation 1 by respondent's location



Note: The graph shows marginal means for equation 1 by country.

Figure A16. : MMs for equation 1 by country

A4. Observational data: OLS analysis

Table A7—: Attitudes towards immigrants: Overall vs. Chinese

	Full model		No controls		No power concerns	
	Overall	Chinese	Overall	Chinese	Overall	Chinese
egocentric economic concerns	-0.0534	-0.0743	-0.0573	-0.0604	-0.0670	-0.0695
	(0.0447)	(0.0528)	(0.0391)	(0.0464)	(0.0399)	(0.0440)
sociotropic economic concerns	-0.228***	-0.269***	-0.235***	-0.281***	-0.237***	-0.292***
	(0.0449)	(0.0444)	(0.0400)	(0.0434)	(0.0424)	(0.0358)
sociotropic job concerns	-0.0856**	-0.142***	-0.0812**	-0.147***	-0.0817**	-0.131***
	(0.0317)	(0.0296)	(0.0280)	(0.0299)	(0.0309)	(0.0330)
sociotropic cultural concerns	-0.0717**	-0.00975	-0.0752**	-0.0106	-0.0998***	-0.0240
	(0.0250)	(0.0290)	(0.0287)	(0.0260)	(0.0248)	(0.0313)
power concerns government	0.000648	0.00219	0.00560	0.0281		
	(0.0353)	(0.0436)	(0.0341)	(0.0404)		
power concerns business	-0.0380	0.0226	-0.0111	-0.00235		
	(0.0281)	(0.0594)	(0.0302)	(0.0537)		
control variables	Yes	Yes	No	No	Yes	Yes
Observations	1975	2011	2279	2308	2204	2193
R^2	0.174	0.242	0.152	0.226	0.190	0.252

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A8—: Linear hypothesis tests for differences in estimated coefficients from equation 2

(a) Immigrants in general

	β_2	β_3	β_4	β_5	β_6
β_1	0.035	0.34	0.502	0.43	0.742
β_2		0.03	0.016	0.01	0.002
β_3			0.920	0.02	0.202
β_4				0.07	0.214
β_5					0.695

(b) Chinese immigrants

	β_2	β_3	β_4	β_5	β_6
β_1	0.048	0.26	0.483	0.31	0.274
β_2		0.02	0.000	0.00	0.003
β_3			0.009	0.01	0.052
β_4				0.54	0.690
β_5					0.983

Note: Wald test for differences between estimated coefficients, estimated using the *test* command in Stata.