

## RESEARCH ARTICLE

JOURNAL OF  
INTERNATIONAL DEVELOPMENT

WILEY

# Financial inclusion of individuals who arrived as refugees to the United States

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**Funding information**

New York Six Consortium; Hamilton College

**Abstract**

We study determinants of financial inclusion for individuals with a refugee background (refugees) from over 30 countries residing in Utica, New York. We find that greater financial inclusion is associated with refugees who are male, more educated, employed, richer, older at time of migration, have better language skills, and have lived in the country longer. Financial inclusion also increases with the degree to which refugees trust financial institutions and decreases with the degree to which refugees' close friends are from the same ethnic group. Country of origin, religious affiliation, and religiosity are strong predictors in many specifications.

**KEYWORDS**

financial inclusion, financial institutions, migration, refugees

## 1 | INTRODUCTION

The development literature has placed significant attention on the financial inclusion of individuals living in developing countries of varying income levels. More recent research extends this literature to assess the financial integration of migrants now living in wealthier countries throughout Europe (Brücker et al., 2019; Hirschler, 2009), the Middle East (Wellalage & Locke, 2020), and the United States (Bohn & Pearlman, 2013). This study extends the financial inclusion literature by focusing on a specific segment of the immigrant population, those who arrived in the United States as refugees. The United Nations defines refugees as individuals who have left their home countries because they fear of being persecuted based on their religion, race, nationality, or membership to a particular social group (UN General Assembly, 1951). For the remainder of this study, we use the term refugee to refer to individuals who entered the United States with refugee status.<sup>1</sup>

Successful integration of refugees depends to a great extent on how well they adapt to the economic and financial systems in their host countries (Evans & Fitzgerald, 2017; Lichtenstein et al., 2016).<sup>2</sup> Lack of access can make refugees vulnerable to fraud and abuse and more susceptible to poverty and exclusion. For example, bank account

ownership increases savings (Aportela, )) and female empowerment (Ashraf et al., 2010). The lack of a bank account can hinder liquidity management and payments that could result in refugees incurring in high charges associated with the use of onerous financial services such as money orders or check-cashing services (Lusardi, 2010). Also, cash transactions can be riskier for those unbanked, since individuals have no recourse if the funds are stolen (Gross et al., 2012). A refugee's decision to remain unbanked can have long-term effects, since having a bank account can facilitate wealth creation, allowing for consumption smoothing when faced with unexpected expenses or at retirement (Rhine & Greene, 2006).<sup>34</sup> Borrowing can also be an important way to address emergencies and to pay for household and social expenses such as water, health services and education (Peachey & Roe, 2006). Hence, borrowing and saving may be welfare enhancing even if not always output-increasing.

In this paper, we study refugee integration in the United States by focusing on refugees' financial inclusion—typically defined as the extent to which individuals can access and make use of formal financial services (Beck & Demirguc-Kunt, 2008). Using data for refugees from a number of countries and regions who arrived over an extended time period, we find refugee use of basic financial services to lag far behind most Americans, including typically marginalized subpopulations including Hispanics and African Americans. Our empirical approach uses survey data to characterize the determinants of access to and use of financial services for US refugees. Specifically, we employ a broad set of access and usage indicators: (i) account ownership, (ii) use of the account to save, (iii) credit card ownership, and (iv) use of mobile and online services for financial purposes. Our choice and interpretation of the measures follow that of prior studies (e.g., Allen et al., 2016; Demirguc-Kunt & Klapper, 2013; Wellalage & Locke, 2020).

The US Refugee Resettlement Program (USRP) has permanently resettled over 3 million refugees in the United States in the past four decades.<sup>5</sup> In addition to aligning the US definition of refugees with United Nations protocols, the Refugee Act of 1980 established the US Office of Refugee Resettlement and the processes by which the government worked with public and private agencies to permanently resettle refugees. The act also created the mechanism to adjust the maximum annual intake of refugees (United States Congress, 1980). Since 1980, refugee admissions to the United States have become increasingly diverse, with resettled refugees from 78 countries in 2016 alone, more than twice the number in 1981 (Fix et al., 2017). Despite the size and diversity of this population group, outcomes for refugees have received relatively little attention.

The forced nature of refugee migration, in which individuals have little control over where they resettle, differentiates the refugee experience from that of other migrants. Unlike other immigrants, refugees to the United States have little choice concerning the state or city in which they are resettled (Ott, 2011). Given the differences in the purpose for migrating, the level of preparedness for the move to the United States, the social services available, and the process by which migration occurs, results from studies of immigrant integration in general and those that focus on financial considerations in particular (see Osili & Paulson, 2008a, 2008b) may not hold for this segment of the population.<sup>6</sup> Efforts to examine financial outcomes of refugees remain inadequate with much of the action still revolving around studies that are conceptual or descriptive in nature, less suitable for statistical analysis, and often exhibit a strong representation of refugees who are self-settled and from neighbouring countries with a shared culture and history with the host country.

As of 2019, only 2% of American households lacked access to a bank account. Financial inclusion has been on the rise across all demographics in the United States. From 2013 to 2019, households in the lowest income quintile (less than \$25 400) and African American and Hispanic residents without access to a bank account dropped from 20% to 6% and from 15% to about 4%, respectively.<sup>7</sup> In stark contrast, our data show that almost 30% of refugees surveyed do not have access to a savings or checking account, with some variation observed across the different ethnic groups. For example, Bosnian and former Soviet Union refugees exhibit the lowest averages for lack of access to saving services with almost 21% of former Soviets and 15% of Bosnians lacking a savings account. African refugees report the highest average with 44% without a bank account. Refugees, even those who have lived in the United States for many years, and would easily classify in the last stage of the displacement-to-integration process meaning that their financial needs closely resemble those of the host population (Hansen, 2017), lag far behind the

general public in access to basic banking services. In this regard, a better understanding of the determinants of refugees' financial inclusion could contribute to the design of more effective settlement and integration policies and programs.

Several barriers likely impede the access to, and use of, formal financial services among migrants and refugees in particular. Limited economic stability and time in the host country can make it difficult for refugees to seek out financial products or financial advice. Other common barriers affecting people facing financial exclusion can be more pronounced among refugees, including a lack of documentation, language barriers and a lack of trust in the financial sector (Atkinson & Messy, 2013).<sup>8</sup> Various supply and demand side barriers undermine refugees' ability to easily access and use formal financial services. Refugees often lack familiarity with the financial and welfare system in the host country and have limited knowledge and skills to understand the terms and features of different financial products and services. Such limitations tend to persist and be transmitted to children of migrants once they have settled in the host country (Organisation for Economic Co-operation and Development [OECD], 2014).<sup>9</sup>

Our paper contributes to the literature by focusing on refugees from numerous countries and conflicts who have been resettled to a single US city over a time span of 30 years. Using a new survey of refugees who were resettled in Utica, New York, we estimate models that predict the likelihood of refugee financial market participation. To a first approximation, studying refugees in the same city allows us to control for factors that impact the supply of financial services across states and cities in the United States. Moreover, refugees whose behaviour we study face the same competitive environment, make decisions in the same regulatory environment, and are subjected to the same legal structure and infrastructure. In addition, by holding factors such as the availability of refugee services, strength of the job market, and local culture constant, we can identify refugee specific factors that affect their access and use of financial services. Overall, we are not aware of other empirical studies directly addressing the financial inclusion of refugees in the United States.

Our main empirical specifications are estimated using probit models and focus on several metrics of access and desire to use formal savings and borrowing services. We find that the probability of owning a bank account is higher for refugees that are male, employed, older, and have lived in the country longer. Depending on the country of origin, the likelihood of account ownership varies with the degree to which refugees' close friends are from the same ethnic group and for refugees who attend religious services frequently (at least once a week). We also observe that the likelihood of saving formally increases for male and employed refugees who have been in the country longer and decreases with the degree to which one's close friends are from the same ethnic group. The probability of owning a credit card increases for refugees who are male, employed, more educated, richer, have children, and have spent more than 5 years in the country and for Bosnian refugees who attend religious services frequently.<sup>10</sup> We also find that individuals who are employed, have higher income, are younger, and have been in the country for more than 5 years are more likely to use mobile and online banking. Education also makes it more likely for refugees to use online banking. In contrast, the degree to which one's friends are from the same ethnic group lowers the likelihood of online banking.

Survey questions also allow us to estimate the role that refugee trust in US financial institutions plays in their access to and desire to use financial services. We find that trust in financial institutions measured as the degree to which refugees think their money is safe in a US bank increases the likelihood of financial integration for all metrics other than internet financial transactions. Country or continent of origin and religious orientation are strong predictors in many specifications. Overall, our results square well with the broader literature on financial inclusion. We also highlight interesting results that emerge regarding the role of trust in the financial sector, time in the host country, the portion of friends in the same ethnic group, and religiosity. Finally, our results confirm prior findings of diminished access for women with regard to savings and credit card accounts, but this gender gap does not hold for the use of mobile and internet banking.

The remainder of the paper is organized as follows. Section 2 provides a literature review on determinants of financial inclusion. Section 3 discusses the survey data, and Section 4 presents the econometric methodology. We provide the main results in Section 5. Section 6 concludes.

## 2 | DETERMINANTS OF FINANCIAL INCLUSION

Our work relates to the pool of recent studies that examine the individual determinants of financial inclusion across countries. For example, using the 2012 Global Findex database for 123 countries and 124 000 households, Allen et al. (2016) find that the probabilities of owning and using an account at a formal institution are higher for richer, more educated, older, urban, and employed individuals. The likelihood of borrowing formally also increases for the same individual characteristics. Zins and Weill (2016) used the same database on 37 African countries and find similar results. They also find that mobile banking is driven by the same determinants of traditional banking. Using the 2012 Global Findex database, Fungáčová and Weill (2015) study financial inclusion in China and find that richer, more educated, older men are more likely to be financially included. Concerning barriers to financial inclusion, poorer people care more about their lack of money and the fact that another member of the family has an account, whereas more educated people are more concerned about cost and trust in the banking system. Finally, older people are more concerned about lack of money, distance, and religious reasons. They also find that income and education influence the choice between formal and informal credit, but education does not lead to higher formal credit in China.

Gender also matters for financial inclusion. Using the 2012 Global Findex on 98 developing countries, Demirgüç-Kunt, Klapper, and Singer (2013) find that a significant gender gap exists in account ownership, formal saving, and formal credit. Being a woman would increase the likelihood of being financially excluded. Fungáčová and Weill (2015) also find that Chinese women are less likely to be financially included because of a lack of documentation or because another member of the family has an account. They also argue that Chinese women seem to be discriminated as they do not substitute formal credit with informal credit. Aterido et al. (2013) analyse this issue in nine African countries but do not find significant gender discrimination.

Religious beliefs and practice also play a role in financial market participation. In a sample of more than 65 000 adults from 64 economies (excluding countries where less than 1% or more than 99% of the sample self-identified as Muslim), Demirgüç-Kunt, Klapper, and Randall (2013) finds that Muslims are significantly less likely than non-Muslims to own a formal account or save at a formal financial institution after controlling for other individual and country level characteristics. But the analysis finds no evidence that Muslims are less likely than non-Muslims to report formal or informal borrowing. Naser et al. (1999) find that 70% of Muslims place attention to religious issues when choosing an Islamic bank in Jordan.<sup>11</sup> Beck and Brown (2011) use household-level data for 29 economies in Eastern and Central Europe and find that Muslims are 8% less likely than non-Muslims to have a formal account, a result that is driven largely by south-east European countries (Bosnia, Macedonia, Montenegro).

Allen et al. (2016) analyse the World Bank Global Findex database and report that 13% of adults worldwide cited lack of trust in banks as a reason for why they do not own a bank account. Lack of trust in financial institutions—an involuntary barrier to broader financial inclusion—can respond to bank failures, government expropriation of banks, economic crises, cultural norms, and discrimination against specific population groups. For example, Fungáčová and Weill (2015) used the Global Findex dataset to study BRICS countries and they report that 43% of Russian individuals cited lack of trust as the reason for not having a bank account. This figure represents approximately three times the average share in the group of developing countries, and it is consistent with a country that has experienced several bank failures and episodes of financial instability. Dupas and Robinson (2013) combine experimental and survey data from Western Kenya and find lack of trust in banks among the main reasons why people do not use banking services. Taken together, this evidence suggests that expanding financial inclusion needs to be accompanied with efforts to improve the quality and reliability of financial services.

We also contribute to the still evolving literature on economic and social integration of refugees in general and refugee financial inclusion in particular. Most of the empirical research remains descriptive or less suitable for statistical analysis while often exhibiting a strong representation of refugees from neighbouring countries with similar cultural and religious characteristics as the host population. For example, Brückner et al. (2019) provide a descriptive account of the economic and social integration of refugees who arrived in Germany between 2013 and 2016. Among their main findings, the authors report that refugees take significantly longer to find their first job relative to

other migrants: almost 50% of refugees and only less than 20% of other migrants had not found their first job within 5 years after arrival. Similarly, 22% of refugees and only 9% of other migrants had not found their first job within ten years after arrival. Social networks appear to play a significant role in labour market outcomes for this population segment with 43% of refugees who were employed in 2017 reporting to have found their first job through friends, family members, and acquaintances. When comparing male and female refugees with similar observable characteristics, men are 12 percentage points more likely to be employed than women.

United Nations High Commissioner for Refugees (UNHCR) (2018) assessed the needs of refugees for financial and nonfinancial services in Jordan. The study involved interviews and focus group discussions with a total of 117 refugees of which 108 were from neighbouring Syria. Given restrictive regulations and the country's difficult economic situation, approximately 60% of refugees interviewed did not have a job with an even lower participation rate for women with 82% of female interviewees without a job. This already challenging situation in the host country can make it difficult to accurately disentangle the relationship between the specific characteristics of refugees and their outcomes from that of the host population. Of the 20% of refugees interviewed who are able to save, the great majority keep their savings in cash at home. About 80% of refugees interviewed had to borrow at least once since their arrival to Jordan and relied mostly on informal sources, such as family and relatives (51% of interviewees) and friends and neighbours (64% of them). The study notes that most refugees are self-settled with only 9% of interviewed refugees having concrete plans to resettle abroad. Also, consulted refugees highlight no particular tensions between Syrian refugees and Jordanians. This is not surprising as Syrian and Jordanian communities generally exhibit a similar culture and a shared history.

Similarly, using World Bank survey data on 1041 Syrian refugees residing in Jordan, Wellalage and Locke (2020) investigate the relationship between remittances and refugee financial inclusion. The authors show that refugees engaged with remittances are 29, 20, and 15 percentage points more likely to own an ATM card, a debit card, and insurance, respectively, relative to those who do not participate in remittances activities. The study, however, also remains limited to refugees from neighbouring Syria who share many similarities with the native Jordanian population. These findings are consistent with Bauer and Sinning (2011), who find that temporary migrants in West Germany save significantly more than permanent migrants and natives when remittances are taken into account.

With a focus on the supply side of financial services, Batsaikhan et al. (2019) conducted a survey with a total of 14 responses from financial institutions in nine European countries to learn about banks' attitudes and recommendations towards the financial integration of refugees. Half of banks in the survey consider current identification requirements ("Know Your Client" [KYC] regulations) to be restrictive for the provision of financial services to refugees. To address this, they propose the creation of a central pan-European registry of refugees to which financial institutions could have access as well as the creation of a European identity document issued to each refugee to facilitate their identification. Half of the banks with refugee clients report to have specific products for refugees such as accounts free of charge with limited transactional functions; and while none of the banks offer any specific credit or loan programmes for this population group, those refugees who receive a residence permit can apply for loans under the same conditions as any other client. Interestingly, only four banks in the survey provide relevant written guidance or training to support their staff in dealing with refugees.<sup>12</sup> Anderloni and Vadone (2008) discuss similar supply side approaches and recommendations including undifferentiated and group specific products for the financial integration of the immigrant population among European countries.

More specifically, our paper makes a novel contribution to the understanding of the determinants of financial inclusion for immigrants with refugee background residing in the United States. While there appears to be a larger body of work documenting the situation of different migrant groups in European countries (e.g., see Hirschler, 2009, for a survey), most of the limited available evidence for the United States focuses entirely on the general population of immigrants. For example, Osili and Paulson (2008a, 2008b) use the 1996–2000 Survey of Income and Program Participation (SIPP) to examine the determinants of financial market participation among immigrants in the United States. They study the role of both individual level characteristics like wealth and education as well as the effect of the country of origin institutional environment. They find that wealthier and more educated immigrants are more

likely to make use of basic banking services and have higher measures of financial depth.<sup>13</sup> They find that immigrants from countries with more developed institutional frameworks (e.g., more effective in the protection of property rights) are more likely to have a relationship with a bank and also use formal financial markets more extensively.<sup>14</sup> They conclude that country of origin institutions affect the financial market participation of recent immigrants as well as those with up to 27 years of US experience. Country of origin institutions also influence the behaviour of immigrants who arrive in the United States as children. Evidence from variation in the effect of home country institutions by age at migration, suggests that individuals appear to learn about home country institutions before the age of sixteen, probably in the home and potentially at school, rather than through direct experience. In total, institutional quality appears to shape preferences and beliefs in a way that influences both the breadth and the depth of financial market participation.

Osili and Paulson (2008b) and Bohn and Pearlman (2013) find that the size of the immigrant network affects negatively migrants' financial market participation in the United States. This result supports the idea that one role of neighbourhoods with a large population of immigrants from a single country may be the enforcement of country-of-origin norms and customs (Kandori, 1992). More broadly, these findings are consistent with work by Duflo and Saez (2002) and Hong et al. (2004), who show that social interactions have important effects on financial decisions.<sup>15</sup>

Finally, our work also relates to the broader and extensive literature showing that better developed financial markets can lead to improved conditions at the country level. These studies rely on cross-country data to show that financial development boosts up growth and reduces poverty and inequality (Beck et al., 2004; Levine, 2005; Rajan & Zingales, 1998).

### 3 | DATA

The lack of empirical studies on refugees reflects the absence of high quality data on refugees in the United States and worldwide (MacDonald, 2015; Ott, 2011). Large surveys such as the American Community Survey, the Current Population Survey, or the Survey of Income and Program Participation (SIPP) ask questions about country of birth but fail to ascertain refugee status. Researchers using these data rely on statistical approaches that exploit the country, year of entry, and other demographic data to impute refugee status or the probability of refugee status to individual immigrants in the sample (Bollinger & Hagstrom, 2008, 2011; Evans & Fitzgerald, 2017; Giri, 2018). While such approaches lead to valuable analyses of certain outcomes, the large surveys mentioned fail to ask detailed questions about access and use of financial services.

The data for our analysis is taken from the Survey of Utica Refugee Retention and Financial Inclusion (SURFFI), a 2017 survey of refugees currently living in the city of Utica, in central New York State. In 1960, the city population was over 100 000, but due to decreased economic opportunities, by the late 1990s, it had decreased to approximately 60 000 people. The population has remained around that level ever since. Over the past four decades, a large influx of refugees has helped to stabilize the population, with over 16 000 refugees arriving in Utica during this period. Refugees who come to Utica are resettled through the efforts of the Mohawk Valley Resource Center for Refugees (MVRRCR), a voluntary agency sponsored by the Lutheran Immigration and Refugee Service (LIRS). Since 1981, the MVRRCR helped settle thousands of refugees from all over the world by providing resettlement services funded by private and public grants including funding from the Office of Refugee Resettlement.

Most previous refugee studies use a point of service or some variant of a nonrandom network technique, such as snowball sampling, to build an adequately sized sample. Because those using a common social service or who share a common network may also share unobserved characteristics, such as motivation or beliefs, such approaches violate the random sampling assumption necessary to conduct statistical analyses. To avoid systematic sampling bias, SURFFI researchers visited every house within the geographic boundary.<sup>16</sup> Also, unlike other surveys aiming to survey hard-to-reach populations, the survey process did not rely on local institutions such as churches, health clinics, and large employers. The goal was to avoid biasing the sample towards any particular group. Because English

proficiency can be a significant barrier for this population, the survey was made available in five languages in addition to English, namely, Russian, Bosnian, Burmese, Karen, and Arabic. Non-English surveys accounted for 37% of all surveys collected.

The SURRFI is an interview-based survey conducted from May to August 2017 in residential neighbourhoods throughout Utica, NY. Research teams were trained to identify households with at least one refugee member. Research teams visited 7216 residential addresses constituting nearly every residential address in a three square mile area.<sup>17</sup> Of the 4198 addresses where someone answered the door, researchers determined that 1041 households had at least one refugee member. They collected surveys from 523 households, for a response rate of 50%.<sup>18</sup> Because refugees from the former Soviet Union were initially underrepresented, the survey team sought to augment the sample. Cooperative efforts with the MVRRC resulted in an additional 100 respondents from the former Soviet Union, for a total sample size of 623 surveys. To our knowledge, the SURRFI is the largest sample of refugees for a single city in the United States.<sup>19</sup>

The survey asked basic demographic information such as age, gender, country of origin, and highest level of education attained, as well as a number of financial inclusion related questions. In particular, the survey asked people to respond to the following statements associated with account ownership: “Do you, either by yourself or together with someone else, currently have a savings or checking account at any bank?” and “Do you personally have a debit card?” Account ownership represents the single most important entry point to the financial system and can facilitate a variety of financial transactions as well as encourage formal saving and access to credit services. The survey also asked refugees to respond to the following attitudinal statement associated with the use of bank accounts to save: “If you were given \$1000, would you rather put that money in a bank or keep it at home?” Respondents were also asked the following question related to access to borrowing services: “Do you personally have a credit card?” It has been well documented that savings and borrowing can allow individuals to smooth consumption, invest in education, and mitigate negative unexpected shocks. Finally, concerning the use of internet and mobile banking for payment purposes, the survey asks: “In the past 12 months, have you used your cell phone to make a payment, buy things, or send or receive money? (including the use of bank account, PayPal, or Venmo)” and “In the past 12 months, have you, personally, made payments on bills or purchased things online using the internet or a computer?” The spread of these new financial tools has not only altered the ways in which people manage their finances but has also allowed people otherwise excluded from the formal financial system to perform financial transactions within a cheap, secure and reliable framework. The construct of our financial inclusion indicators is consistent with those found in the World Bank’s Global Financial Inclusion (Global Findex) survey—a comprehensive cross-country database of financial inclusion indicators as described in Demirgüç-Kunt and Klapper (2013). Our specific choice of financial inclusion measures and their interpretation follow that of Allen et al. (2016) and Wellalage and Locke (2020) and allow us to work with a broad set of access and usage indicators. We note that because all refugees surveyed are from a single city, such factors as the unemployment rate, labour and housing market characteristics, and even the degree of native resident acceptance of the refugee community are implicitly held constant throughout our regression analysis. We provide precise definitions of all the variables employed in our analysis in Table 1.

Table 2A shows summary statistics. The average age of respondents is 33.4 years,<sup>20</sup> 56% are female, and roughly 70% have completed at least a high school degree. While more than half of the sample is currently employed, most households have modest incomes, with 58% below \$30 000 annually. Approximately three quarters of refugees have a savings account and a debit card and would rather put \$1000 in the bank than at home. Out of the 50% of refugees who have a credit card, 86% reported that they used it in the past 12 months. Approximately 60% and more than 40% of the sample has used the internet and a cell phone, respectively, for financial purposes. Overall, refugees in this sample broadly report significantly lower financial inclusion metrics as those observed for the wider population of households in the lowest income percentile and those in the non-White or Hispanic group.<sup>21</sup> The mean response for the agreement with the statement “My money is safe in a US bank” is 4.03 which maps to the “agree” category. We consider this to be our primary measure of trust in U.S. financial systems. To test the degree to which this variable measures the same concept as our financial inclusion metrics, we note that the pairwise



**TABLE 1** Variable description

Variable	Description	Source (SURRFI Question)
Female	Dummy equal to 1 if the respondent is a female and 0 otherwise.	
Has Children	Dummy that takes a value of 1 if the respondent has at least one child.	How many children do you have? ANS: 1, 2, 3, 4, 5, 6, 7, 8, 9, none.
4 Years College or More	Dummy equal to 1 if the respondent has a 4 Year College or a more than 4 Year College Degree.	What is the highest level of education you have completed? ANS: Less than high school, high school degree, GED, some college, 2 year college, 4 year college, more than 4 year degree, other.
Employed	Dummy equal to 1 if the respondent is currently employed.	Are you currently employed? ANS: Yes, No.
\$30K < Income < \$60K	Dummy equal to 1 if the respondent reports a household income between \$30K and \$60K; and 0 otherwise.	Would you say that the combined job related income of your household is: ANS: Less than \$30K, between \$30K and \$60K, greater than \$60K.
Income ≥ 60K	Dummy equal to 1 if the respondent reports a household income greater than \$60K; and 0 otherwise.	Would you say that the combined job related income of your household is: ANS: Less than \$30K, between \$30K and \$60K, greater than \$60K.
Age of Entering US	Age of entering US measured in years. It is the difference between the respondent's age and his/her years in US.	What is your age? ANS: Under 14, 14–17, 18–21, 22–30, 31–40, 41–50, 51–60, over 60.
Years in US ≤ 5	Dummy equal to 1 if the difference between the year the survey was conducted (2017) and the year the respondent arrived to the United States is 5 years or less.	In what year did you arrive to the United States?
6 ≤ Years in US ≤ 10	Dummy equal to 1 if the difference between the year the survey was conducted (2017) and the year the respondent arrived to the United States is between 6 and 10 years.	In what year did you arrive to the United States?
Years in US > 0	Dummy equal to 1 if the difference between the year the survey was conducted (2017) and the year the respondent arrived to the United States is more than 10 years.	In what year did you arrive to the United States?
Friends in Same Ethnic Group	Ordinal variable that takes on values 1–5 and measures the degree to which a respondent's friends are from the same ethnic group.	My friend group is composed of people from my ethnic background. ANS: Strongly disagree, disagree, neutral, agree, strongly agree.
Frequently Attend Religious Services	Dummy equal to 1 if respondent attends religious services at least once a week.	How often do you attend religious services? ANS: Never, only for important religious holidays/events, at least once a week, once or twice a month, once or twice a year.
Weak English Skills	Dummy that takes a value of 1 if respondent scored 1 or 2 on the language skill assessment.	Interviewers performed a post interview language skill assessment of the respondent. A score of 1 being the lowest and 5 the highest.
Money Safe in US Bank	Ordinal variable that takes on values 1–5 and measures the degree to which a respondent thinks her money is safe in a US bank.	My money is safe in US bank. ANS: Strongly disagree, disagree, neutral, agree, and strongly agree.



**TABLE 1** (Continued)

Variable	Description	Source (SURRFI Question)
Africa	Dummy that takes a value of 1 if respondent is from a country in Africa, namely: Somalia, Sudan, Kenya, Liberia, Congo, Libya, Morocco, South Sudan, Rowanda, Tanzania.	In what country were you born?
Middle East	Dummy that takes a value of 1 if respondent is from a country in Middle East, namely: Iraq, Syria, Yemen, Afghanistan.	In what country were you born?
Southeast Asia (SE Asia)	Dummy that takes a value of 1 if respondent is from a country in South East Asia, namely: Burma, Myanmar, Thailand.	In what country were you born?
Former Yugoslavia	Dummy that takes a value of 1 if respondent is from a country in Ex-Yugoslavia, namely: Bosnia and Herzegovina, Montenegro, Sarajevo, Croatia, Macedonia, Serbia.	In what country were you born?
Former Soviet Union (Former USSR)	Dummy that takes a value of 1 if respondent is from a country in the Former Soviet Union, namely: Belarus (Belorussia), Latvia, Lithuania, Moldova, Poland, Romania, Russia, Ukraine,	In what country were you born?
Muslim	Dummy equal to 1 if respondent's religion is Islam and 0 otherwise.	What is your religion, if any? ANS: Christianity, Islam, Buddhism, Other, NONE.
Other Religion	Dummy equal to 1 if respondent's religion is Buddhism or other; and 0 otherwise.	What is your religion, if any? ANS: Christianity, Islam, Buddhism, Other, NONE.
No Religion	Dummy equal to 1 if respondent professes no religion [NONE]; and 0 otherwise.	What is your religion, if any? ANS: Christianity, Islam, Buddhism, Other, NONE.

correlations are positive and do not surpass 0.35. These low to moderate levels of correlation suggest that these metrics are separate, though somewhat related concepts.

An essential feature of our research design concerns the overlapping waves of refugees by region of origin to Utica, the destination city. Refugees arrive over a relatively long period of time from each region allowing us to estimate the effect of time on measures of financial inclusion. Table 2B provides a breakdown of our sample by region of origin and years spent in the United States. Refugees from Southeast Asia (largely the ethnic Karen people from Myanmar/Burma) account for 42% of the sample and have lived in Utica for an average of 8.6 years. Our estimation approach capitalizes on the variation in years. Because time likely affects the access and use of financial services nonlinearly, we use categorical dummy variables corresponding to 5 years or less, 6 to 10 years, and more than 10 years (up to a maximum of 30 years). For refugees from Southeast Asia, there is a considerable percent in each time category. Refugees from the former Yugoslavia (mostly Bosnians) and the former Soviet Union (mainly Belarusians, Russians, and Ukrainians), who represent 22% and 19% of the sample, respectively, have been in Utica much longer, but they also arrive over a long time span. Refugees from African countries make up 13% of the sample while those from the Middle East account for another 4%.

Table 2C provides more detailed descriptive statistics of our financial inclusion metrics by country/continent of origin. Although refugees in our sample broadly report similar metrics as those for US households in the lowest income percentile and those in the non-White or Hispanic group, there is some variation across the different ethnic groups. Bosnians and former Soviets exhibit the highest averages for access to savings services with about 80% of

**TABLE 2A** Summary statistics

Variable	Obs	Mean	Std. dev.	Min	Max
Have Savings Account	557	0.72	0.45	0	1
Have Debit Card	423	0.74	0.44	0	1
Put Money in Bank Account	556	0.73	0.45	0	1
Have Credit Card	565	0.49	0.50	0	1
Use Credit Card	291	0.86	0.34	0	1
Use Cellphone Financially	528	0.43	0.50	0	1
Use Internet Financially	565	0.58	0.49	0	1
Female	569	0.56	0.50	0	1
Has Children	569	0.59	0.49	0	1
High School Degree	569	0.29	0.45	0	1
GED	569	0.04	0.19	0	1
Some College	569	0.08	0.27	0	1
2 Year of College	569	0.13	0.34	0	1
4 Year of College	569	0.08	0.27	0	1
More than 4 Year College	569	0.06	0.23	0	1
Employed	569	0.57	0.50	0	1
Income ≤ 30K	569	0.58	0.49	0	1
30K < Income < 60K	569	0.31	0.46	0	1
Income ≥ 60K	569	0.11	0.31	0	1
Age	569	33.36	13.67	15	91
Age of Entering US	569	21.20	14.00	0	70
Years in US	569	12.16	7.31	0	30
Years in US ≤ 5 Year	569	0.20	0.40	0	1
6 ≤ Years in US ≤ 10 Years	569	0.30	0.46	0	1
Years in US > 10 Years	569	0.50	0.50	0	1
Friends in Same Ethnic Group	569	3.67	1.19	1	5
Frequently Attend Religious Serv	569	0.54	0.50	0	1
Weak Language	569	0.33	0.47	0	1
Money Safe in US Bank	569	4.03	0.94	1	5

former Soviets and 85% of Bosnians having a savings account. Of these, 92% of former Soviets and 76% of Bosnians have a debit card. When asked if they were given \$1000 whether they would rather put it in the bank or at home, 83% of Bosnians would put that money in the bank, followed by 74% of Africans, and 67% of former Soviets. In terms of access to borrowing services, former Soviets and Bosnians once again display the highest averages with 77% of former Soviets and about 64% of Bosnians reporting to have a credit card followed far behind by Southeast Asians with almost 38%. Refugees from the Middle East report the lowest averages for all the aforementioned metrics of access and use of saving and borrowing services. Interestingly, refugees from the Middle East exhibit the highest average for the use of cellphones financially with 60% of them having used their cellphones in the previous 12 months to make a payment, buy things, or send or receive money, followed by 52% of Bosnians. Finally, the use of the internet financially is led by 80% of Bosnians and 63% of Africans and former Soviets who reported to have used the internet in the previous 12 months to make a payment, buy things, or send or receive money.

TABLE 2B Breakdown by region of origin and years in the United States

Region of origin	Frequency overall	Percent distribution by time in US					Mean years in US			
		Overall	≤5 years	6–10 years	≥11 years		Overall	≤5 years	6–10 years	≥11 years
Africa	74	13.0	28.4	13.5	58.1		9.4	2.7	7.8	13.1
Former Yugoslavia	126	22.1	1.6	0.8	97.6		18.6	2.0	9.0	19.0
SE Asia	239	42.0	26.4	54.8	18.8		8.6	3.4	8.4	16.4
Former Soviet	107	18.8	19.6	16.8	63.6		15.7	2.8	8.1	21.8
Middle East	23	4.0	39.1	43.5	17.4		6.3	1.4	7.2	15.3
Total	569	100.0	20.4	29.9	49.7		12.2	3.0	8.2	18.3

**TABLE 2C** Financial inclusion metrics  
(by country/continent of origin)

	Total	%	Mean	Std. dev.
<b>Have savings account</b>				
Africa	73	13.1%	56.2%	50.0%
Former Yugoslavia	122	21.9%	85.2%	35.6%
Southeast Asia	232	41.6%	69.4%	46.2%
Former Soviet Union	107	19.2%	79.4%	40.6%
Middle East	23	4.1%	52.2%	51.1%
<b>Have debit card</b>				
Africa	54	12.8%	68.5%	46.9%
Former Yugoslavia	87	20.6%	75.9%	43.0%
Southeast Asia	166	39.2%	67.5%	47.0%
Former Soviet Union	97	23.0%	92.0%	27.6%
Middle East	19	4.5%	52.6%	51.3%
<b>Put money in bank</b>				
Africa	73	13.1%	74.0%	44.2%
Former Yugoslavia	121	21.8%	82.6%	38.0%
Southeast Asia	234	42.1%	70.1%	45.9%
Former Soviet Union	106	19.1%	67.0%	47.2%
Middle East	22	3.9%	68.2%	47.7%
<b>Have credit card</b>				
Africa	73	12.9%	32.9%	47.3%
Former Yugoslavia	125	22.1%	64.0%	48.2%
Southeast Asia	238	42.1%	37.8%	48.6%
Former Soviet Union	106	18.8%	77.4%	42.0%
Middle East	23	4.1%	17.4%	38.7%
<b>Use cellphone financially</b>				
Africa	70	13.2%	41.4%	49.6%
Former Yugoslavia	120	22.7%	52.5%	50.1%
Southeast Asia	219	41.5%	33.3%	47.2%
Former Soviet Union	99	18.7%	51.5%	50.2%
Middle East	20	3.8%	60.0%	50.3%
<b>Use internet financially</b>				
Africa	73	12.9%	63.0%	48.6%
Former Yugoslavia	126	22.3%	80.1%	40.0%
Southeast Asia	237	41.9%	43.9%	49.7%
Former Soviet Union	106	18.8%	63.2%	48.4%
Middle East	23	4.1%	52.2%	51.1%

## 4 | EMPIRICAL METHODOLOGY

Our main empirical specifications focus on several measures of access to and desire to use saving and borrowing services. The dependent variable  $Y_i$  represents one of the financial inclusion variables. It is a binary variable equal to

1 when an individual owns or desires to make use of a given formal financial service. We use the following model to investigate its determinants,

$$\begin{aligned} Y_i^* &= X_i' \beta + \varepsilon_i, \\ Y_i &= 1 \quad \text{if } Y_i^* > 0, \\ Y_i &= 0 \quad \text{if } Y_i^* \leq 0, \end{aligned} \quad (1)$$

where refugees are indexed by  $i$ ,  $Y_i^*$  is a latent measure of financial inclusion,  $X_i$  is the vector of explanatory variables representing individual level characteristics,  $\beta$  is a vector of parameters, and  $\varepsilon_i$  is a normally distributed error term with zero mean and variance equal to one. We estimate (1) as a probit model by maximum likelihood.<sup>22</sup>

Among the individual level characteristics, we include a number of socio-economic variables that we speculate based on the existing literature might affect the access and use of financial services. All variables, summarized in Table 1, come from the SURRFI 2017 survey. *Female* indicates whether the respondent is a woman. To the extent that it is more difficult for women to have a bank account perhaps because they are less likely to work or make independent financial decisions, we expect this variable to have a negative sign. *Has Children* takes a value of one if the refugee has at least one child and zero otherwise. We speculate that a larger household can be conducive to seek out financial alternatives for consumption smoothing or for coping with a higher propensity for emergencies or unexpected shocks. We expect this variable to have a positive sign. *4 Years College or More* indicates whether a refugee has at least a four year college degree. We expect the likelihood of access and use of financial services to be positively associated with a refugee's level of education. For employment status, *Employed* takes a value of one if the refugee is employed and zero otherwise. In general, we expect employed refugees to be more likely to have a bank account since employers may require accounts to pay salaries. To account for the effects of income, we use three dummy variables: *Income ≤ 30K* takes a value of one if the refugee makes less than \$30 000 annually and zero otherwise; *30K < Income < 60K* indicates whether a refugee makes between \$30 000 and \$60 000 annually, and *Income ≥ 60K* takes a value of one if the refugee makes more than \$60 000 annually and zero otherwise. Consistent with the broader literature on financial inclusion, we expect the likelihood of access to and use of financial services to be positively related to refugees' income level.

We also include variables that pertain specifically to refugees. *Age of Entering US* is expressed in years and measures the age at which a refugee entered the United States. We expect this variable to be positively associated with financial inclusion. To capture the potential for a differential impact of time since entering the United States, we use three dummy variables as in Bohn and Pearlman (2013): *Years in US ≤ 5*, *6 ≤ Years in US ≤ 10*, *Years in US > 10*. In general, we expect refugees to be more likely to gain access and make use of formal financial services the longer their stay in the United States. *Friends in Same Ethnic Group* indicates the degree to which their friends are from the same ethnic group. One possibility is that higher exposure to people from the same ethnic group makes it easier to learn and take advantage of available financial services. Alternatively, it could contribute to the persistence of their mistrust of financial services carried over from their home countries or it could serve as a substitute for formal financial services. We therefore do not speculate and the sign of this variable is uncertain. *Frequently Attend Religious Services* is an indicator for those that frequently attend religious services (at least once a week). One possibility is that religious services serve as teaching moments and thus increase the likelihood of refugee access and use of formal financial services.<sup>23</sup> Still, we believe we cannot make a reasonable speculation and the sign of this variable is therefore uncertain. *Weak English Skills* is an indicator variable that takes a value of one if the interviewer concluded that the refugee possessed low English skills during the interview process; and zero otherwise. Beyond various supply and demand side barriers to greater access and use of formal financial services, refugees often lack familiarity with the language. We expect this variable to be negatively associated with the likelihood of refugee financial market participation.

Numerous studies suggest that trust in a country's financial systems can be a barrier to financial integration. Our measure, *Money Safe in US Bank* indicates the degree to which a refugee thinks her money is safe in a US bank. Our variable can take on values between 1 (*strongly disagree with the statement*) and 5 (*strongly agree*). A lack of trust in financial services as a result of negative personal and cultural experiences or religious beliefs may lower the likelihood of financial integration.

Finally, we include indicator variables for country/continent of origin and religious association that might be associated with the different dimensions of access and use of financial services.<sup>24</sup> For example, we may be able to capture the effect of unobserved individual characteristics that are correlated with features related to the country of origin such as the effect of institutional quality that can affect their behaviour towards financial services in the host country.

**TABLE 3A** Have a savings or checking account (full sample)

Variables	1	2	3	4
Female	−0.0787** (0.0331)	−0.0806** (0.0335)	−0.0935*** (0.0324)	−0.0866*** (0.0327)
Has Children	−0.0143 (0.0439)	−0.0103 (0.0436)	−0.00639 (0.0430)	−0.00110 (0.0426)
4 Years College or More	0.245*** (0.0719)	0.243*** (0.0725)	0.234*** (0.0715)	0.258*** (0.0723)
Employed	0.219*** (0.0296)	0.221*** (0.0299)	0.221*** (0.0288)	0.223*** (0.0291)
\$30K < Income < \$60K	−0.0278 (0.0385)	−0.0440 (0.0393)	−0.0469 (0.0378)	−0.0513 (0.0385)
Income ≥ \$60K	0.115 (0.0839)	0.109 (0.0856)	0.0954 (0.0847)	0.0899 (0.0850)
Age of Entering US	0.00491*** (0.00161)	0.00491*** (0.00161)	0.00387** (0.00159)	0.00372** (0.00159)
≤5 Years in U.S.	−0.317*** (0.0443)	−0.350*** (0.0490)	−0.365*** (0.0445)	−0.346*** (0.0484)
6 ≤ Years in U.S. ≤ 10	−0.103*** (0.0399)	−0.159*** (0.0482)	−0.146*** (0.0402)	−0.123** (0.0492)
Friends in Same Ethnic Group	0.000881 (0.0137)	−0.00819 (0.0140)	−0.0112 (0.0136)	−0.00765 (0.0137)
Frequently Attend Religious Serv	−0.0223 (0.0335)	−0.0315 (0.0366)	−0.0621* (0.0359)	−0.0381 (0.0384)
Weak English Skills	0.00793 (0.0380)	0.00122 (0.0383)	0.00840 (0.0374)	0.00476 (0.0375)
Money Safe in U.S. Bank	0.0726*** (0.0160)	0.0699*** (0.0163)	0.0777*** (0.0157)	0.0733*** (0.0159)
Africa		−0.0943 (0.0607)		0.142* (0.0796)
Middle East		−0.0840 (0.0857)		0.161 (0.0987)
SE Asia		0.0510 (0.0537)		0.0762 (0.0537)
Ex Yugoslavia		−0.0465 (0.0640)		0.201** (0.0822)
Muslim			−0.178*** (0.0372)	−0.262*** (0.0563)
Other Non-Christian Religion			0.0131 (0.0706)	0.0142 (0.0713)
No Religion			−0.0826 (0.110)	−0.0810 (0.114)
Observations	557	557	557	557

Note: Standard errors in parentheses.

\*\*\* $p < 0.01$ . \*\* $p < 0.05$ . \* $p < 0.1$ .

## 5 | RESULTS

### 5.1 | Determinants of access and desire to use savings services

Table 3A examines the link between individual characteristics and the likelihood of owning a checking or savings account. In column (1), we display the marginal effects for simple probit estimations, whereas in columns (2)–(4), we show the marginal effects for specifications that account for religious affiliation, country/continent of origin, and both, respectively. We find that the likelihood of owning an account is higher for refugees that are male, employed, more educated, older, exhibit a higher degree of trust in US banks, and have been in the United States for a longer time. These results hold across specifications. For example, column (1) shows that the likelihood of owning an account is almost 8 percentage points lower for female refugees when holding other variables constant. The likelihood of owning a bank account is about 24 percentage points higher for a refugee with a four year college degree or more, whereas the likelihood for an employed refugee is almost 22 percentage points higher. Those who have been in the United States 5 years or less and between 6 and 10 years are about 32 percentage points and 10 percentage points less likely to have one than those who have been in the United States for more than 10 years. In columns (2) and (4), we add four controls for country/continent of origin (indicator variables for those from Africa, the Middle East, Southeast Asia, and the former Yugoslavia, with the former Soviet Union being the omitted category). No other group was large enough to study, so we omit those observations. We see that refugees from Africa and the former republics of Yugoslavia (primarily Bosnians) are more likely to have an account relative to refugees from the former Soviet Union (the omitted indicator variable in the regression). In addition, in columns (3) and (4), we add three controls for religious affiliation: Muslim, Other Non-Christian Religion (people who profess Buddhism, or other non-Christian religion), and No Religion (people who profess no religion). These coefficients are interpreted relative to being Christian, the omitted category. Results indicate that refugees who are Muslims are less likely to own an account than Christians, whereas we observe no differences for the other two religion categories.<sup>25</sup>

We then look at each of the four major refugee groups separately and conduct individual regressions to see whether the results on the main covariates differ by group. In Table 3B, we present results for the likelihood of

**TABLE 3B** By country/continent of origin

Africa	Former Yugoslavia	SE Asia	Former USSR
−0.270*** (0.0920)	−0.100 (0.0647)	0.00739 (0.0571)	−0.147* (0.0751)
−0.353*** (0.133)	−0.102 (0.0999)	0.0542 (0.0848)	−0.0409 (0.0731)
	0.106 (0.111)	0.0811 (0.179)	0.342*** (0.0967)
0.345*** (0.0563)	0.142** (0.0705)	0.308*** (0.0488)	0.0610 (0.0653)
−0.0528 (0.0857)	0.0654 (0.0731)	−0.0987 (0.0681)	−0.139* (0.0711)
−0.291 (0.878)	0.191* (0.110)		0.0706 (0.119)
0.00344 (0.00449)	0.00762* (0.00427)	0.00246 (0.00308)	0.00224 (0.00205)
−0.677*** (0.125)		−0.420*** (0.0978)	−0.474*** (0.0771)
−0.299** (0.125)		−0.220** (0.0916)	−0.200** (0.0835)
−0.0722** (0.0318)	−0.0410 (0.0257)	0.0270 (0.0269)	0.0836** (0.0357)
−0.130 (0.0804)	0.0598 (0.101)	0.0820 (0.0575)	−0.203** (0.0816)
0.0241 (0.111)	−0.00227 (0.101)	0.0695 (0.0622)	−0.188*** (0.0671)
0.235*** (0.0651)	−0.00743 (0.0312)	0.0633** (0.0304)	0.0682* (0.0361)
69	119	225	107

Note: Standard errors in parentheses.

\*\*\* $p < 0.01$ . \*\* $p < 0.05$ . \* $p < 0.1$ .



owning a savings or checking account. Similar to the regressions for the entire sample, the coefficient for *Female* is negative for all groups except Southeast Asia but is only significant for refugees from Africa and the former Soviet Union. We also find that refugees from Africa who have at least one child are less likely to have an account. This is consistent with Osili and Paulson (2008a), who find that each additional child decreases the likelihood of having a checking account by two percentage points. The result that those employed are more likely to have an account holds true for refugees from Africa, the former Yugoslavia, and Southeast Asia with large marginal effects ranging from 14% to 34%. The positive coefficients we saw in Table 3A on *4 Years College or More* and *Age of Entering US* appear to be largely driven by refugees from the former Soviet Union and former Yugoslavia, respectively, as these are the only groups with statistically significant coefficients in the separate regressions. The general result that refugees who have been in the United States 5 years or less and between 6 and 10 years are less likely to have a bank account holds true for all groups except former Yugoslavians for whom all respondents fall in the omitted category of more than 10 years. Interestingly, we find that Africans who have a higher proportion of friends in the same ethnic group are less likely to own an account, whereas we find opposite results for individuals from the former Soviet

**TABLE 4A** Put \$1000 in the bank or keep it at home (full sample)

Variables	1	2	3	4
Female	−0.0752** (0.0357)	−0.0775** (0.0366)	−0.0747** (0.0360)	−0.0792** (0.0367)
Has Children	−0.0116 (0.0473)	−0.0123 (0.0473)	−0.0121 (0.0474)	−0.00834 (0.0474)
4 Years College or More	−0.0102 (0.0576)	0.000718 (0.0597)	−0.0130 (0.0583)	−0.00292 (0.0597)
Employed	0.126*** (0.0365)	0.121*** (0.0369)	0.125*** (0.0366)	0.120*** (0.0369)
\$30K < Income < \$60K	−0.0185 (0.0428)	−0.0212 (0.0438)	−0.0179 (0.0429)	−0.0227 (0.0439)
Income ≥ \$60K	−0.0288 (0.0698)	−0.0380 (0.0713)	−0.0314 (0.0702)	−0.0464 (0.0718)
Age of Entering US	−0.00166 (0.00175)	−0.00160 (0.00177)	−0.00167 (0.00177)	−0.00193 (0.00179)
≤5 Years in U.S.	−0.160*** (0.0508)	−0.133** (0.0551)	−0.159*** (0.0516)	−0.131** (0.0552)
6 ≤ Years in U.S. ≤ 10	−0.0893** (0.0436)	−0.0572 (0.0518)	−0.0899** (0.0445)	−0.0485 (0.0538)
Friends in Same Ethnic Group	−0.0377** (0.0152)	−0.0350** (0.0156)	−0.0381** (0.0154)	−0.0350** (0.0157)
Frequently Attend Religious Serv	0.0383 (0.0370)	0.0555 (0.0405)	0.0366 (0.0406)	0.0540 (0.0434)
Weak English Skills	−0.0234 (0.0416)	−0.0195 (0.0422)	−0.0217 (0.0417)	−0.0176 (0.0422)
Money Safe in U.S. Bank	0.146*** (0.0167)	0.146*** (0.0171)	0.146*** (0.0167)	0.147*** (0.0172)
Africa		0.0380 (0.0675)		0.102 (0.0885)
Middle East		−0.0380 (0.101)		0.0262 (0.116)
SE Asia		−0.00463 (0.0566)		−0.000205 (0.0582)
Ex Yugoslavia		0.0756 (0.0666)		0.140 (0.0889)
Muslim			−0.00211 (0.0430)	−0.0746 (0.0665)
Other Non-Christian Religion			−0.0307 (0.0736)	−0.0130 (0.0758)
No Religion			0.0296 (0.106)	0.000505 (0.108)
Observations	556	556	556	556

Note: Standard errors in parentheses.

\*\*\* $p < 0.01$ . \*\* $p < 0.05$ . \* $p < 0.1$ .

Union. We also find that former Soviets who attend religious services frequently and who have weak English skills are less likely to own an account. The general finding that bank account ownership increases with the degree to which refugees find their money to be safe in a US bank holds true for all groups except for Bosnians. Our trust variable can take on values between 1 (*strongly disagree*) and 5 (*strongly agree*) so that an increase in the response from 3 (*neutral*) to 5 (*strongly agree*) represents a probability increase of 20 to 50 percentage points depending on the refugee group.

Next, we study the likelihood that refugees prefer to use a bank account to save. In Table 4A, we report regression results for the link between the likelihood of putting the money in the bank (instead of at home) and refugee characteristics. Although there are fewer statistically significant coefficients, these results are generally consistent with those reported in Table 3A. For example, if a female refugee were given \$1000, she is almost 8 percentage points less likely to put it in the bank, whereas an employed refugee is 12 percentage points more likely to do so. Individuals who have been in the United States 5 years or less and between 6 and 10 years are found to be about 16 percentage points and 9 percentage points less likely to put the money in the bank than those who have been in the country for more than a decade. We find that the degree to which a refugee thinks her money is safe in a US bank is positively associated with the likelihood of putting money in the bank. Interestingly, we also find evidence that the degree to which the refugee's friends are from the same ethnic group has a negative impact on the likelihood of using a bank account to save.

Table 4B involves group specific regressions. Similar to the regressions for the entire sample, the coefficient for *Female* is negative for all groups but is only statistically significant for Africans. The positive coefficients we saw in Table 4A on *Employed* appear to be largely driven by refugees from Southeast Asia as this is the only group with a statistically significant coefficient in the separate regressions. The general result that refugees who have a higher degree of trust in US banks are more likely to save formally holds true for all groups with the estimated effect being largest for former Soviet refugees.

In sum, our results for the determinants of access and use of formal savings services square well with the broader literature on financial inclusion. Some interesting features emerge such as the role of time in the host country, trust in financial institutions, religious affiliation, the portion of friends in the same ethnic group, and religiosity.

**TABLE 4B** By country/continent of origin

Africa	Former Yugoslavia	SE Asia	Former USSR
−0.221* (0.115)	−0.0238 (0.0653)	−0.0373 (0.0614)	−0.0812 (0.0788)
−0.180 (0.161)	0.134 (0.0935)	−0.0115 (0.0880)	−0.147 (0.0940)
	0.0629 (0.0988)	−0.0437 (0.186)	−0.159* (0.0824)
−0.0499 (0.113)	0.105 (0.0793)	0.213*** (0.0592)	0.189** (0.0808)
−0.0766 (0.141)	−0.0291 (0.0822)	−0.0933 (0.0713)	0.0293 (0.0946)
−0.135 (0.324)	−0.0585 (0.0976)		−0.0924 (0.123)
0.0110 (0.00911)	−0.00372 (0.00407)	−0.00300 (0.00321)	0.000254 (0.00316)
−0.194 (0.187)	−0.0954 (0.231)	−0.126 (0.0979)	−0.260*** (0.0983)
0.0883 (0.175)		−0.0294 (0.0875)	−0.331*** (0.110)
−0.0200 (0.0426)	0.00579 (0.0264)	−0.0489 (0.0302)	−0.0444 (0.0410)
−0.0202 (0.110)	0.0947 (0.127)	0.126** (0.0634)	−0.0172 (0.0943)
−0.00732 (0.137)	−0.0982 (0.0927)	−0.0244 (0.0684)	−0.0942 (0.0949)
0.126*** (0.0415)	0.117*** (0.0291)	0.113*** (0.0350)	0.248*** (0.0356)
69	120	227	106

Note: Standard errors in parentheses.

\*\*\* $p < 0.01$ . \*\* $p < 0.05$ . \* $p < 0.1$ .

Country or continent of origin is a strong predictor in many specifications, which is consistent with the existing literature on immigrants' financial inclusion.

## 5.2 | Determinants of credit card ownership

In Table 5A, we look at the probability of having a credit card. Once again, regression results estimate that refugees who are male, employed, have higher education, believe their money is safe in a US bank, and have been in the United States for more than 5 years are more likely to be financially included. We also observe that those having children and incomes greater than \$30 000 per year are more likely to have a credit card. For example, in column (1), refugees that have children are 17 percentage points more likely to have a credit card. Those that report incomes between \$30 000 and \$60 000 and greater than \$60 000 per year are about 14 percentage points and 20 percentage points more likely to have one than those with incomes lower than \$30 000. These results hold across specifications.

**TABLE 5A** Have a credit card (full sample)

Variables	1	2	3	4
Female	−0.0286 (0.0366)	−0.0629* (0.0364)	−0.0343 (0.0368)	−0.0645* (0.0364)
Has Children	0.173*** (0.0458)	0.168*** (0.0448)	0.178*** (0.0459)	0.168*** (0.0448)
4 Years College or More	0.256*** (0.0602)	0.190*** (0.0606)	0.253*** (0.0609)	0.194*** (0.0607)
Employed	0.238*** (0.0335)	0.227*** (0.0336)	0.239*** (0.0335)	0.228*** (0.0336)
\$30K < Income < \$60K	0.157*** (0.0402)	0.132*** (0.0407)	0.150*** (0.0406)	0.129*** (0.0408)
Income ≥ \$60K	0.225*** (0.0700)	0.171** (0.0702)	0.220*** (0.0705)	0.174** (0.0703)
Age of Entering US	9.47e−05 (0.00176)	−0.00131 (0.00174)	−0.000356 (0.00179)	−0.00119 (0.00176)
≤5 Years in U.S.	−0.104* (0.0538)	−0.0608 (0.0566)	−0.112** (0.0540)	−0.0595 (0.0566)
6 ≤ Years in U.S. ≤ 10	−0.0522 (0.0444)	0.00720 (0.0520)	−0.0637 (0.0453)	0.0136 (0.0543)
Friends in Same Ethnic Group	−0.00468 (0.0157)	−0.0138 (0.0157)	−0.00747 (0.0159)	−0.0119 (0.0158)
Frequently Attend Religious Serv	0.0549 (0.0377)	0.0410 (0.0413)	0.0346 (0.0418)	0.0532 (0.0446)
Weak English Skills	−0.0291 (0.0420)	−0.00261 (0.0419)	−0.0308 (0.0422)	−0.00673 (0.0420)
Money Safe in U.S. Bank	0.0395** (0.0193)	0.0550*** (0.0193)	0.0396** (0.0193)	0.0541*** (0.0192)
Africa		−0.265*** (0.0658)		−0.298*** (0.0820)
Middle East		−0.395*** (0.112)		−0.428*** (0.123)
SE Asia		−0.247*** (0.0557)		−0.262*** (0.0570)
Ex Yugoslavia		−0.174*** (0.0655)		−0.201** (0.0854)
Muslim			−0.0587 (0.0444)	0.0459 (0.0627)
Other Non-Christian Religion			0.00272 (0.0757)	0.0778 (0.0767)
No Religion			−0.100 (0.104)	−0.0303 (0.104)
Observations	565	565	565	565

Note: Standard errors in parentheses.

\*\*\* $p < 0.01$ . \*\* $p < 0.05$ . \* $p < 0.1$ .

The coefficients for weak English skills are negative for all specifications but never statistically significant. In columns (2) and (4), we see that refugees from Africa, South East Asia, the former republics of Yugoslavia, and the Middle East are less likely to have a credit card than refugees from the former Soviet Union, holding other variables constant.

In Table 5B, we present results for each of the four major refugee groups separately. Gender differences observed for the entire sample appear to be largely driven by refugees from Africa and the former Soviet Union. The general result that refugees who have children are more likely to own a credit card seems to be largely driven by Southeast Asians. The coefficient on *4 Years College or More* is positive for all groups and statistically significant for refugees from the former Soviet Union and the former Yugoslavia. The positive relationship between refugees who are employed and credit card ownership holds true for all groups except for Bosnians. With respect to income, Bosnians in the middle and highest income categories are more likely to own a credit card than Bosnians that have incomes in the lowest category; coefficients are positive for the remaining groups but are not precisely estimated. The coefficient on *Age of Entering US* is negative for all groups and statistically significant for Southeast Asians except for Bosnians, where there is a positive and statistically significant coefficient. The result that trust in financial institutions positively affects the likelihood of credit card ownership is mostly driven by Bosnian and Southeast Asian refugees. The positive coefficient on religiosity is largely driven by Bosnians.

### 5.3 | Determinants of mobile and online banking

We complete our analysis by examining the determinants of the use of mobile- and internet-based banking services. Table 6A shows that refugees who are employed, richer, younger, and have been in the country for at least 5 years are more likely to use their cell phone for financial purposes. We also find that the degree to which a refugee thinks her money is safe in a US bank is positively associated with the likelihood of using their cell phone financially. Columns (2) and (4) suggest that refugees from the Middle East are more likely to make use of mobile banking while

**TABLE 5B** By country/continent of origin

Africa	Former Yugoslavia	SE Asia	Former USSR
−0.193* (0.110)	0.0651 (0.0720)	−0.0800 (0.0560)	−0.154* (0.0915)
−0.0199 (0.152)	−0.0263 (0.0971)	0.344*** (0.0727)	0.123 (0.0881)
0.209 (0.239)	0.285** (0.112)	0.0801 (0.142)	0.158* (0.0866)
0.196* (0.112)	0.116 (0.0839)	0.298*** (0.0470)	0.128* (0.0771)
0.112 (0.143)	0.284*** (0.0877)	0.0953 (0.0639)	0.0422 (0.0876)
0.135 (0.256)	0.386*** (0.113)	0.264 (0.194)	0.107 (0.127)
−0.00422 (0.00726)	0.0119*** (0.00424)	−0.00597** (0.00297)	−0.00400 (0.00273)
−0.184 (0.174)		−0.0505 (0.0903)	−0.00330 (0.101)
0.0313 (0.158)		−0.0267 (0.0772)	0.142 (0.128)
0.00594 (0.0429)	−0.0560** (0.0285)	−0.0351 (0.0292)	0.0368 (0.0423)
0.0426 (0.111)	0.396*** (0.137)	0.0669 (0.0595)	−0.0444 (0.0933)
0.110 (0.143)	0.0417 (0.107)	−0.0154 (0.0610)	−0.0138 (0.0914)
0.0758 (0.0477)	0.0976*** (0.0347)	0.0806** (0.0360)	−0.0259 (0.0469)
73	122	238	106

Note: Standard errors in parentheses.

\*\*\* $p < 0.01$ . \*\* $p < 0.05$ . \* $p < 0.1$ .

TABLE 6A Use cell phone for financial purposes in the past 12 months (full sample)

Variable	1	2	3	4
Female	−0.0484 (0.0400)	−0.0379 (0.0397)	−0.0469 (0.0402)	−0.0388 (0.0398)
Has Children	0.0737 (0.0548)	0.0694 (0.0537)	0.0742 (0.0548)	0.0688 (0.0537)
4 Years College or More	0.0884 (0.0611)	0.0522 (0.0614)	0.0981 (0.0618)	0.0585 (0.0617)
Employed	0.123*** (0.0419)	0.151*** (0.0416)	0.124*** (0.0419)	0.152*** (0.0417)
\$30K < Income < \$60K	0.105** (0.0459)	0.110** (0.0460)	0.107** (0.0461)	0.108** (0.0460)
Income ≥ \$60K	0.186** (0.0723)	0.184** (0.0716)	0.191*** (0.0724)	0.185*** (0.0717)
Age of Entering US	−0.0124*** (0.00222)	−0.0135*** (0.00219)	−0.0122*** (0.00224)	−0.0133*** (0.00220)
≤5 Years in U.S.	−0.0831 (0.0669)	−0.120* (0.0688)	−0.0780 (0.0676)	−0.117* (0.0686)
6 ≤ Years in U.S. ≤ 10	0.0327 (0.0510)	0.0301 (0.0582)	0.0410 (0.0520)	0.0414 (0.0605)
Friends in Same Ethnic Group	−0.0209 (0.0168)	−0.0153 (0.0169)	−0.0188 (0.0170)	−0.0142 (0.0169)
Frequently Attend Religious Serv	0.0302 (0.0416)	0.0205 (0.0446)	0.0426 (0.0461)	0.0342 (0.0482)
Weak English Skills	−0.0194 (0.0482)	−0.0203 (0.0475)	−0.0228 (0.0483)	−0.0242 (0.0475)
Money Safe in U.S. Bank	0.0400* (0.0214)	0.0436** (0.0213)	0.0383* (0.0214)	0.0426** (0.0213)
Africa		−0.0902 (0.0740)		−0.109 (0.0929)
Middle East		0.298*** (0.114)		0.278** (0.128)
SE Asia		−0.125* (0.0642)		−0.142** (0.0661)
Ex Yugoslavia		−0.144** (0.0705)		−0.155* (0.0929)
Muslim			0.0350 (0.0488)	0.0295 (0.0701)
Other Non-Christian Religion			0.0601 (0.0852)	0.0966 (0.0865)
No Religion			−0.0195 (0.109)	−0.0265 (0.108)
Observations	515	515	515	515

Note: Standard errors in parentheses.

\*\*\*,  $p < 0.01$ . \*\*,  $p < 0.05$ . \*,  $p < 0.1$ .

individuals from SE Asia and former Yugoslavia are less likely to do so. We find no statistically significant difference in terms of gender, English skills, and religious affiliation.

Table 6B presents results for each of the four major refugee groups separately. While in the regressions for the entire sample, the coefficients for female and weak English skills are negative but not precisely estimated, Africans that are female are more likely to use their cellphones financially whereas Africans with weaker English skills are less likely to do so. Southeast Asians with children and with at least a college degree are more likely to use their cellphones financially than other Southeast Asians in our sample. Being employed is positively related to the likelihood of using mobile banking for Africans and Southeast Asians. With respect to income, Bosnians in the middle and highest income categories are more likely to use their cellphones financially than Bosnians that have incomes in the lowest category; coefficients are positive for the remaining groups except for Africans in the middle income category but are not precisely estimated. The negative relationship between the age of entering the United States and the likelihood of using mobile banking holds true for all refugee groups. In particular, each year older is estimated to reduce the likelihood of using mobile banking by approximately 1 to 2 percentage points. For those from Southeast Asia, having more friends in the same ethnic group is negatively related to the likelihood of using their cellphone financially, whereas for the remaining groups, the relationship is negative but not significant. The positive but marginally significant coefficient in Table 6A on money safe in a US bank is mostly driven by refugees from Southeast Asia and former Soviet Union.

Finally, Tables 7A and 7B report regression results for the likelihood of using the internet for financial purposes. Refugees who are employed, more educated, richer, younger, and have been in the country for more than 5 years are more likely to make use of online banking services. In addition, refugees who report a higher portion of friends in the same ethnic group are less likely to use the internet for financial purposes. Coefficients on weak English skills are negative but are not precisely estimated for any specification. Columns (2)–(4) suggest that refugees who are Muslims are more likely to use the internet financially while those from South East Asia are less likely to do so. We find no statistically significant difference for gender, degree of trust in financial institutions, religiosity, and English skills.

**TABLE 6B** By country/continent of origin

Africa	Former Yugoslavia	SE Asia	Former USSR
0.191* (0.103)	−0.00253 (0.0776)	−0.0504 (0.0580)	−0.125 (0.0858)
−0.0238 (0.155)	0.0310 (0.117)	0.180** (0.0864)	0.0886 (0.102)
−0.0190 (0.221)	−0.151 (0.102)	0.325** (0.165)	0.114 (0.0895)
0.374*** (0.0972)	0.101 (0.108)	0.157*** (0.0578)	−0.0348 (0.0950)
−0.148 (0.139)	0.176* (0.0953)	0.0571 (0.0666)	0.156 (0.102)
0.0404 (0.269)	0.387*** (0.112)	0.153 (0.194)	0.139 (0.125)
−0.0170** (0.00848)	−0.0173*** (0.00536)	−0.00861** (0.00369)	−0.0159*** (0.00295)
−0.0598 (0.193)		−0.167 (0.104)	−0.0632 (0.112)
0.00478 (0.140)		0.0812 (0.0804)	−0.0692 (0.122)
−0.00432 (0.0418)	0.0190 (0.0326)	−0.0719** (0.0282)	−0.00298 (0.0458)
0.0133 (0.108)	0.137 (0.132)	0.0637 (0.0625)	−0.158* (0.0949)
0.0936 (0.140)	−0.247* (0.128)	−0.0696 (0.0646)	0.0485 (0.102)
−0.0287 (0.0481)	0.0367 (0.0381)	0.0640* (0.0349)	0.103** (0.0472)
70	118	219	99

Note: Standard errors in parentheses.

\*\*\* $p < 0.01$ . \*\* $p < 0.05$ . \* $p < 0.1$ .

TABLE 7 A Use internet for financial purposes in the past 12 months (full sample)

Variables	1	2	3	4
Female	0.00828 (0.0364)	0.0106 (0.0370)	0.0169 (0.0361)	0.0123 (0.0368)
Has Children	0.0416 (0.0486)	0.0325 (0.0483)	0.0334 (0.0484)	0.0283 (0.0482)
4 Years College or More	0.160** (0.0627)	0.142** (0.0643)	0.169*** (0.0625)	0.140** (0.0642)
Employed	0.0992*** (0.0364)	0.101*** (0.0368)	0.0966*** (0.0362)	0.0985*** (0.0368)
\$30K < Income < \$60K	0.127*** (0.0410)	0.129*** (0.0416)	0.137*** (0.0407)	0.131*** (0.0414)
Income ≥ \$60K	0.287*** (0.0788)	0.270*** (0.0794)	0.295*** (0.0780)	0.270*** (0.0790)
Age of Entering US	-0.0109*** (0.00177)	-0.0111*** (0.00178)	-0.0101*** (0.00179)	-0.0106*** (0.00180)
≤5 Years in U.S.	-0.0865* (0.0522)	-0.0518 (0.0558)	-0.0705 (0.0526)	-0.0551 (0.0556)
6 ≤ Years in U.S. ≤ 10	-0.0241 (0.0432)	0.0360 (0.0508)	-0.000871 (0.0438)	0.0343 (0.0527)
Friends in Same Ethnic Group	-0.0564*** (0.0153)	-0.0476*** (0.0157)	-0.0497*** (0.0155)	-0.0478*** (0.0157)
Frequently Attend Religious Serv	-0.00444 (0.0370)	0.0169 (0.0405)	0.0332 (0.0405)	0.0399 (0.0436)
Weak English Skills	-0.0244 (0.0407)	-0.0151 (0.0407)	-0.0251 (0.0404)	-0.0154 (0.0407)
Money Safe in U.S. Bank	0.0230 (0.0195)	0.0247 (0.0196)	0.0192 (0.0194)	0.0240 (0.0196)
Africa		0.0101 (0.0683)		-0.0669 (0.0856)
Middle East		0.0674 (0.0990)		-0.0189 (0.113)
SE Asia		-0.0919 (0.0582)		-0.106* (0.0590)
Ex Yugoslavia		0.0380 (0.0695)		-0.0360 (0.0901)
Muslim			0.110*** (0.0416)	0.102 (0.0622)
Other Non-Christian Religion			0.0324 (0.0734)	0.0644 (0.0757)
No Religion			0.160 (0.122)	0.159 (0.122)
Observations	565	565	565	565

Note: Standard errors in parentheses.

\*\*\*,  $p < 0.01$ . \*\*,  $p < 0.05$ . \*,  $p < 0.1$ .



**TABLE 7B** By country/continent of origin

Africa	Former Yugoslavia	SE Asia	Former USSR
0.0912 (0.107)	0.0143 (0.0650)	0.0229 (0.0617)	−0.0941 (0.0777)
−0.220 (0.151)	−0.000769 (0.105)	0.165* (0.0912)	0.0448 (0.0930)
0.0784 (0.218)	0.0355 (0.102)	0.237 (0.206)	0.127 (0.0839)
0.201* (0.107)	0.118 (0.0781)	0.185*** (0.0606)	−0.0813 (0.0849)
−0.158 (0.126)	0.0769 (0.0756)	0.127* (0.0692)	0.142 (0.0877)
	0.183* (0.103)		0.165 (0.116)
−0.0165** (0.00719)	−0.00723* (0.00412)	−0.0123*** (0.00360)	−0.0156*** (0.00254)
−0.159 (0.180)		−0.125 (0.101)	0.0465 (0.0921)
−0.136 (0.139)		0.0571 (0.0851)	−0.0747 (0.111)
−0.0920** (0.0455)	−0.0224 (0.0262)	−0.0361 (0.0308)	−0.0621 (0.0430)
−0.0321 (0.101)	0.0110 (0.103)	0.0459 (0.0649)	−0.101 (0.0931)
0.0585 (0.127)	−0.129 (0.0820)	−0.0639 (0.0675)	0.0381 (0.0906)
0.0701 (0.0531)	0.00211 (0.0349)	−0.000209 (0.0360)	0.0360 (0.0464)
70	123	230	106

Note: Standard errors in parentheses.

\*\*\* $p < 0.01$ . \*\* $p < 0.05$ . \* $p < 0.1$ .

Our final set of results involve group specific regressions and are shown in Table 7B. Similar to the regressions for the entire sample, we do not find significant gender differences in the likelihood of using the internet financially for any of the refugee groups. Southeast Asians who have children are 16.5 percentage points more likely to use the internet financially. The positive and statistically significant coefficient on *4 Years of College or More* in Table 7A is also positive for all groups but is not precisely estimated for any particular group. Similar to mobile banking, being employed is positively related to the likelihood of using the internet financially for Africans and Southeast Asians. With respect to income, Southeast Asians in the middle income category and Bosnians in the highest income category are more likely to use the internet financially than Southeast Asians and Bosnians that have incomes in the lowest category; coefficients are positive for the remaining groups except for Africans in the middle income category but are not precisely estimated. The coefficient on *Age of Entering US* is negative and statistically significant for all groups. The negative coefficient observed for *Friends in Same Ethnic Group* in Table 7A holds for all groups but it is only significant for Africans.

Overall, the use of mobile- and internet-based banking services are driven for the most part by the same individual determinants of traditional banking other than gender. Country or continent of origin, religious orientation, trust in financial institutions, and the degree to which refugee's friends are from the same ethnic group are strong predictors in many specifications. Although being female showed a clear negative impact on account ownership, female respondents appear equally likely to use mobile and internet banking services.

## 6 | CONCLUSION

The successful integration of refugees depends to a great extent on how well they adapt to the economic and financial system in the host country. Financial inclusion for refugees in the United States lags behind that of natives, and little is known about the determinants of their financial inclusion. Using a novel survey based dataset of 600 refugees from over 30 different countries that reside in Utica, NY, our study offers new evidence on the determinants of

access and desire to use savings and borrowing services for this population group. We find that socio-economic factors of financial inclusion for refugees are for the most part consistent with the broader literature on financial inclusion. Our findings also highlight the effects of gender differences, country of origin, time in the host country, the degree of trust in financial institutions, language skills, share of friends in the same ethnic group, and religious considerations. These results suggest that the financially excluded are not a homogenous group and therefore different strategies may be needed to reach specific groups and increase their likelihood of becoming financially included (see Brückner et al., 2019, for a discussion of integration policies for refugees in Germany).

The observed characteristics of the refugee population can contribute to the design of more effective settlement and integration policies, including programs that maximize the access to and use of financial institutions and the products they provide. Efforts channelled through well-respected and trusted local organizations and intermediaries can play an important role, particularly that of promoting refugee trust in financial intermediaries and the provision of tailored financial education programs for this population (Batsaikhan et al., 2019; Hansen, 2017).

In total, the sheer number of refugees in the United States warrants closer examination of their economic outcomes post-resettlement. Perhaps more important are the potential benefits of full integration and the costs to the economy and society of failing to properly integrate this segment of the population.

## ACKNOWLEDGEMENTS

Funding was provided by Hamilton College and the New York Six Consortium for Higher Education. We are grateful to the Mohawk Valley Resource Center for Refugees, Tilemahos Efthimiadis, Georgios Panos, numerous participants at different conferences, and two anonymous referees for helpful comments and discussions. We are solely responsible for any errors in this manuscript.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the authors upon request.

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## ENDNOTES

- <sup>1</sup> In particular, our sample is composed of individuals with a refugee background who have spent on average 12 years in the United States, with 80% of them having lived in the country for more than 5 years.
- <sup>2</sup> A few studies emphasize noneconomic outcomes such as subjective well-being, health, friendship formation, language acquisition, and feelings of safety or stability (e.g., Hagstrom et al., 2019; Newbold & McKeary, 2018).
- <sup>3</sup> Studies show that poor households often seek specific financial tools to achieve their savings goals and refute old prejudices held that poor households lack the surpluses to save much (e.g., Ashraf et al., 2006; Collins et al., 2009). For example, Collins et al. (2009) find a common pattern among poor households of intensive use of saving instruments but relatively small average balances.
- <sup>4</sup> Bauer and Sinning (2011) study the saving behaviour of temporary and permanent migrants in West Germany and find that immigrants save significantly less than natives. Their analysis suggests a deficit in the long-term financial integration of permanent migrants.
- <sup>5</sup> Source: Refugee Processing Center, U.S. Department of State, Bureau of Population, Worldwide Refugee Admissions Processing System: <https://www.wrapsnet.org/admissions-and-arrivals/>.
- <sup>6</sup> Betts et al. (2017) highlight the distinctive characteristics of the refugee population as they have to deal with formal and informal institutional barriers in their economic lives relative to nationals and other immigrants.
- <sup>7</sup> Federal Reserve Board, Survey of Consumer Finances, 2013, 2016, and 2019: <https://www.federalreserve.gov/econres/scf/dataviz/scf/chart/>. These data are not available for Utica, NY, so a direct city-level comparison with our data is not possible.

- <sup>8</sup> Immigrants who grow up in places where inflation, fraud, financial crises, and lack of transparency are common often distrust banks. This is the case for many Latin American migrants. Paulson et al. (2006) point out that most Vietnamese arrive with no knowledge of the US financial system, speak little to no English, have negative personal experiences with financial institutions in Vietnam, and have an aversion to debt due to its negative connotations in Vietnamese culture.
- <sup>9</sup> OECD PISA research indicates that students with an immigrant background have lower levels of financial literacy than other students.
- <sup>10</sup> Out of the 50% of refugees in our sample who have a credit card, 86% reported that they used it in the past 12 months. Thus, even though, our focus is on credit card ownership, a large proportion of refugees who own one also use it.
- <sup>11</sup> Demirgüç-Kunt, Klapper, and Randall (2013) report that in the West Bank and Gaza, more than 60% of respondents to a PlaNet Finance survey state a preference for Islamic products over conventional products, with 30% preferring those products regardless of price.
- <sup>12</sup> Hansen (2017) lays out a step by step framework for financial institutions to include refugee clients in their portfolios. The proposed strategy does not differ much from the normal procedure for expanding into a new client segment.
- <sup>13</sup> In Osili and Paulson (2008b), financial breadth is equal to one if an individual has any relationship with a bank (a savings or a checking account). Financial depth captures how many of the functions of financial markets the individual uses: savings products, payment services, or investment services.
- <sup>14</sup> Similarly, Beck et al. (2008) show that barriers to banking are lower in countries with more competition and openness, whereas Owen and Pereira (2018) find that greater banking industry concentration is associated with more access to financial services, provided that the market power of banks is limited and regulations allow banks to engage in a broader scope of activities.
- <sup>15</sup> Immigrant networks have also been shown to be important in a number of other non-financial contexts, including likelihood of employment (Munshi, 2003), wage growth and human capital accumulation (Borjas, 1995, 2000), and language proficiency (Chiswick & Miller, 1996).
- <sup>16</sup> To maximize sample sizes and avoid systematically missing households who worked different shifts, addresses were visited at two times of day on two separate days.
- <sup>17</sup> Researchers were able to enter some but not all apartment buildings, so not every residential address was visited.
- <sup>18</sup> Survey respondents ages 15–18 required parental consent, so households in which the parent was not available but which were answered by minor children counted as refugee households. No records were kept on the number of such households, but the research teams reported a large number of such households. Excluding these households would obviously raise the response rate.
- <sup>19</sup> The RISE survey from Denver Colorado surveyed 467 refugees in 2011–2012 and followed them for 4 years (Lichtenstein et al., 2016).
- <sup>20</sup> There were 94 observations where information on age was only provided in certain intervals. We used the intervals to impute ages in the summary statistics and for the regression results. Excluding these imputed observations did not significantly affect the results of the analysis.
- <sup>21</sup> Osili and Paulson (2008b) report based on the 1996–2000 Survey of Income and Program Participation that 61% of the immigrant sample has a savings or a checking account. These figures would likely be higher today as financial inclusion has been on the rise for all demographic groups in the United States.
- <sup>22</sup> However, given the characteristics of our data where almost 93% of refugees own a cellphone, selection is not a problem and so we make use of our standard estimation strategy.
- <sup>23</sup> Brücker et al. (2019) find that refugees in Germany expressed a higher support than German nationals (18% of refugees compared to 9% of German nationals) for the role played by religious leaders in the interpretation of laws.
- <sup>24</sup> For some of the indicators, we group refugees by continent of origin rather than country given the small number of refugees from most countries in the survey. This is also supported by the existing evidence that suggests informal immigrant networks occur at broad ethnic levels (see, e.g., Bohn & Pearlman, 2013; Bond & Townsend, 1996)
- <sup>25</sup> In unreported regressions we use as an alternative measure of account ownership the likelihood of having a debit card. Although there are fewer statistically significant coefficients, these results are generally consistent with those reported in Table 3A. Results for this and any other estimation discussed in the paper but not reported in detail are available from the authors upon request.

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**How to cite this article:** Hagstrom P, Pereira J. Financial inclusion of individuals who arrived as refugees to the United States. *J. Int. Dev.* 2021;1–28. <https://doi.org/10.1002/jid.3544>