



Findings from a Financial Survey of East African Households in the Twin Cities

January 2020

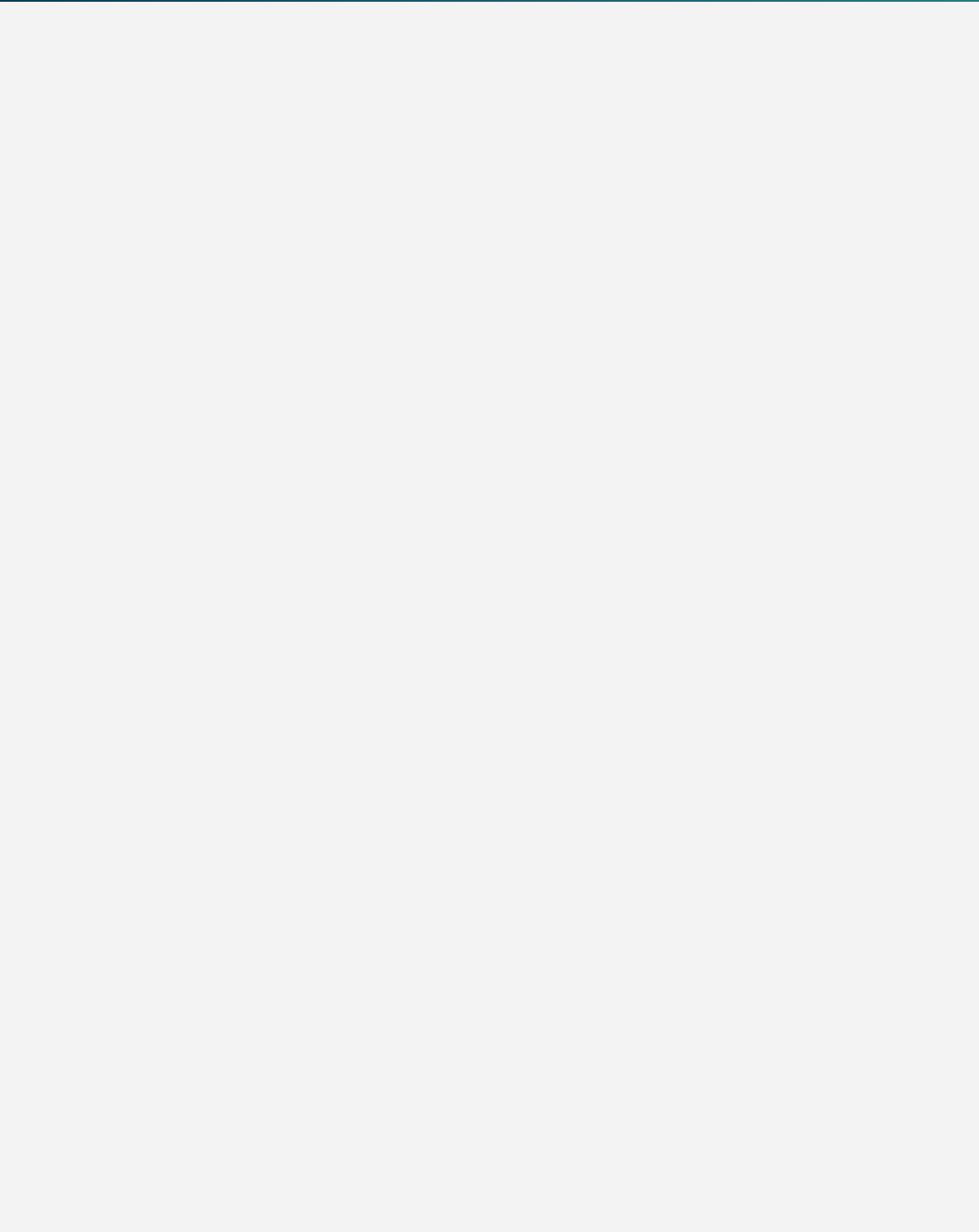
A study by Local Initiatives Support Corporation Twin Cities

With support from:

Federal Reserve Bank of Minneapolis

Minnesota Housing

Minnesota Homeownership Center



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LISC TWIN CITIES



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Cover image courtesy of Sakan Community Resource

Overview

The Minneapolis-St. Paul metro area is home to more than 20,000 East African immigrant households, many of which are Muslim.¹ In recent years, there has been a growing interest in the extent to which this population utilizes mainstream financial services and products. Traditional loan products that charge interest are contradictory to principles found in Islamic law. For many East African households, this presents a barrier to accessing the credit needed to purchase a car, start a business, or buy a home. Fewer than 1 in 5 East African households in the Twin Cities area own their homes, and the homeownership rate is likely lower for East African households that practice Islam. Alternative finance options—that is, lending products that do not charge interest—could enable East African Muslim families—many of which are, increasingly, upwardly mobile professionals—to expand homeownership and wealth-building opportunities.

In order to better meet the financial services needs of this population and support its access to credit, Local Initiatives Support Corporation Twin Cities (Twin Cities LISC), the Federal Reserve Bank of Minneapolis, Minnesota Housing, and Minnesota Homeownership Center partnered on a study to answer the following research questions:

- How often do East African households use mainstream and alternative financial services?
- What types of loans are most important to these households?
- What do these households perceive as barriers to accessing credit?
- What is the demand among East African households for additional financial services and products that are non-interest-bearing?

To answer these questions, the partners administered an online survey to East African households with the help of several cultural community-based organizations between December 2018 and March 2019. The convenience sample yielded 400 responses.

¹It is challenging to estimate the exact population and number of households for East Africans living in the Twin Cities area. One way to provide such an estimate is to use the American Community Survey's Public Use Microdata Sample. To match the survey information gathered in this report, we selected specific places of birth (Ethiopia, Eritrea, Kenya, and Somalia) and geographies (Anoka, Dakota, Hennepin, Ramsey, and Washington counties) to estimate an East African population of 52,000 (with a margin of error of +/- 4,881 at 95 percent confidence interval assuming a normal distribution), with 23,858 households (with a margin of error of +/- 2,422 at the 95 percent confidence level assuming a normal distribution) in the selected geographies. Source: Author's calculation using IPUMS-USA, University of Minnesota, www.ipums.org, 2013–2017 American Community Survey 5-Year Estimates.

Most respondents, 83.3 percent, were renters, similar to the 80.3 percent share of all Twin Cities area East African households that are renters. (Comparison figures are based on authors' calculations using IPUMS-USA, as described in footnote 1.) About 4 in 5 respondents (82.3 percent) reported rent or mortgage payments of less than \$1,500 a month, compared with 90.6 percent of all Twin Cities East African households. In addition, those who responded to the survey were slightly older and more educated than the East African population as a whole in the Twin Cities; however, their responses offer important insights into the financial well-being of East African households and their current use of financial services and products, such as:

- Nearly all respondents (98.5 percent) are banked, meaning that they have a checking or savings account at a bank or credit union.
- More than half of all respondents (54.8 percent) currently use credit cards. Among those who do use credit cards, three-quarters (76.3 percent) reported that they pay off their outstanding balance each month.
- 4 in 10 respondents (42.8 percent) reported that they have applied for a consumer loan from a financial institution.
- Nearly 4 in 10 respondents (38.0 percent) reported having adequate savings to cover two months of household expenditures.

In regard to the demand for non-interest-bearing (NIB) financial products, specifically home mortgage products, survey results indicate that:

- Nearly three-quarters of renters (73.1 percent) expressed that they are unable to use mortgage products that require the payment of interest.
- Nearly all respondents (92.8 percent) believe that it is important or very important that NIB financial products have the blessing of leading Islamic scholars, and 87.0 percent indicated that they would take out a NIB mortgage product that has such a blessing. However, of those respondents, nearly half (48.0 percent) would only use this product if the cost were either less than or similar to that of a conventional mortgage.
- Among those who responded to the survey, a higher share of lower-income East African households are estimated to be ready for NIB mortgage products than those with higher levels of income.
- Having a loan application history, being a frequent user of remittance services, and having accounts at a bank were strongly linked with whether households are estimated to be ready for NIB mortgage products. While loan application history and household banking have a negative relationship with being ready for NIB mortgage products, frequency of using remittance services has a rather positive relationship.
- While 45.3 percent of respondents reported characteristics that collectively indicate potential demand for NIB mortgage products, only 1 in 6 of those survey respondents also has an annual household income that could potentially qualify the household for

a Federal Housing Administration (FHA) mortgage for a \$200,000 home. However, census data indicate that nearly a quarter of the Twin Cities area's East African households (24.9 percent) have an annual income that could potentially qualify for an FHA mortgage for a \$200,000 home. As a result, the potential market demand for NIB mortgages is likely to be at least 1 in 6 East African households.



Using income requirements for a \$200,000 Federal Housing Administration mortgage, we estimate the potential market demand for non-interest-bearing mortgages among East Africans in the Twin Cities to be **at least 1 in 6 households.**

Key considerations for organizations seeking to enhance financial services and products for East African households in the Twin Cities area

Survey results indicate that East African households in the Twin Cities area are both familiar with and regularly use the mainstream banking system. There are aspects of the system, including the use of money transfers or remittances,² that provide a vital financial service for these households. While interest in NIB mortgage products is high and likely reflects the religious beliefs of Muslim households, that interest was moderated when respondents were asked if they would pay an increased cost (greater than conventional mortgage costs). Clarification on the amount of the cost increase might have improved the question. While the overarching concern from respondents was that a NIB mortgage product be priced within reason of a conventional mortgage product, the survey did not specifically ask respondents what level of increased cost they were willing to accept. Stakeholders should consider ways to increase affordable homeownership opportunities for East African households, whether through alternative or conventional mortgage products.

Survey results suggest that there might be an opportunity to increase awareness about the home purchase process and existing loan products for East African households, since 6 out of every 10 respondents reported that they did not understand the difference between conventional and NIB mortgage products.

² In recent years, financial institutions in the U.S. stopped direct money transfers to Somalia and other “fragile” countries due to changes in banking laws and regulations. For more information, see www.gao.gov/assets/700/690546.pdf.

Methods

Gathering information on the financial services behavior and needs of the East African households in the Twin Cities area presented a number of challenges for the group of organizations involved in this study initiative. First, the group wanted to collect personal and sensitive information from respondents who might be difficult to reach or unwilling to respond. Second, rigorous research methods, such as the use of a random, stratified sample of households, proved unnecessary and too costly for the modest and exploratory research questions that guided the group's work.

To address these data collection challenges, a simpler, less costly research design was selected and employed—one that included the completion of an online questionnaire by a targeted group of East African individuals who made up the convenience sample that was used for this study. Each individual who completed the survey was asked to respond on behalf of his or her household unit.

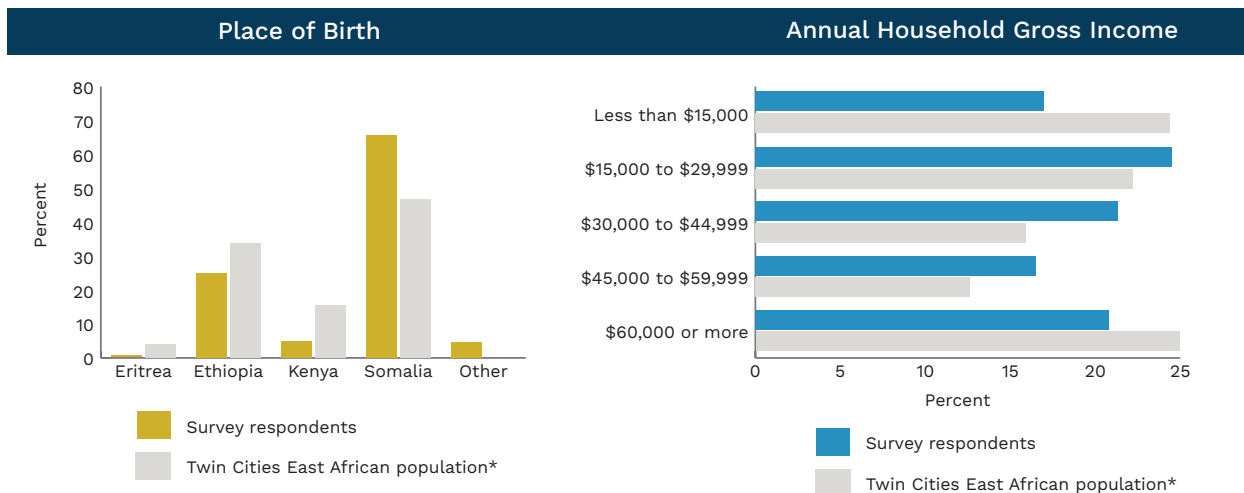
The survey instrument was designed to collect a wide range of information on household financial behavior and needs, including information on banking, saving, and borrowing. The survey also sought to measure respondents' awareness of the availability of NIB financial products and their understanding of these products. Finally, the survey included a series of questions about household and demographic characteristics to help assess how the sample compared to the population of East Africans in the Twin Cities area and to help identify which factors most correlate with the demand for NIB mortgages. Overall, the survey included 40 multiple-choice questions,³ some that allowed for open-ended responses. The estimated length of time needed to complete the survey was 20 minutes.

To administer the survey, members of the study advisory group identified and recruited five ambassadors affiliated with trusted community organizations.⁴ (The ambassadors' names appear in the Acknowledgements section of this report.) Ambassadors were trained to implement the survey in a way that was objective and neutral. In particular, ambassadors were asked to refrain from discussing the costs or benefits of specific financial services and products, including both conventional and NIB products. Individuals who agreed to complete the questionnaire were surveyed through community organizations that provide services to members of the East African community.⁵ Small-dollar incentives were used to

³ See Appendix A for the survey questionnaire.

⁴ Authorized ambassadors received a stipend for their services.

⁵ These organizations were located in communities with large East African populations, including the Cedar-Riverside and Phillips neighborhoods in Minneapolis and the cities of Bloomington, Eden Prairie, Brooklyn Park, Brooklyn Center, Fridley, and Woodbury.



* Source: Authors' calculations based on 2013–2017 U.S. Census Bureau American Community Survey IPUMS data for five Twin Cities area counties for East African residents born in Eritrea, Ethiopia, Kenya, and Somalia.

encourage individuals to complete the survey.⁶ The ambassadors also surveyed individuals at local mosques and at community gatherings. In total, 489 individuals were surveyed. Each survey was reviewed for completeness and validity. This report includes the results of the 400 usable surveys that were included in the analysis.

Of the 400 individuals who responded to the survey, almost two-thirds (65.5 percent) reported that Somalia was their place of birth. An additional 25.0 percent of respondents were born in Ethiopia. The majority of individuals who responded to the survey (on behalf of their household) were men (59.3 percent). Most respondents were married (71.3 percent) and lived in a home with two or more members. More than 40 percent of respondents had five or more people living in their household.

Most survey respondents, 83.3 percent, reported that they currently rent, which is similar to the 80.3 percent share of all Twin Cities area East African residents who are renters. (Comparison figures are based on authors' calculations using IPUMS-USA, as described in footnote 1.) Nearly half (46.0 percent) reported that they pay between \$1,000 and \$1,499 a month for their housing. In the broader population, one-third (35.0 percent) of Twin Cities area East African residents pay between \$500 and \$999 a month for their housing. In terms of income, 79.3 percent of respondents reported an annual household income below \$60,000, compared with 75.1 percent in the overall Twin Cities area East African population.

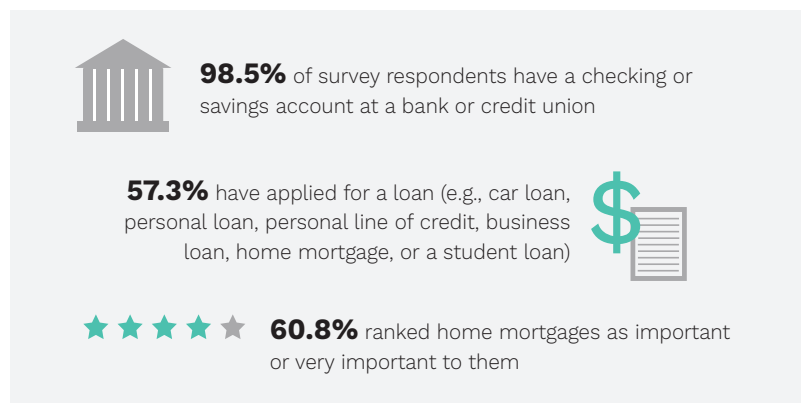
⁶ Upon completion of the survey, participants who provided a mailing address received a \$10 gift card in the mail. A total of 350 gift cards were distributed.

Most respondents (77.8 percent) were of prime working age, between 25 and 54 years old. Two-thirds of respondents reported employment income. When asked to provide an estimate of their monthly household income, 4 in 10 respondents (41.5 percent) reported an income of less than \$2,500 and just over one-third (38 percent) reported an income between \$2,500 and \$5,000. The remaining 21 percent reported a monthly household income of more than \$5,000.

The households that were surveyed are largely comparable, with a few exceptions, to the broader East African population in the Twin Cities region. While the survey was not designed to be statistically representative of the broader population, the distribution of respondents on several population characteristics, including place of birth, ownership of dwelling, levels of education, and age, excluding those younger than 24, closely tracked the broader, Twin Cities area East African population. See comparison tables in Appendix C.

Survey Findings

Current use of mainstream financial services and products



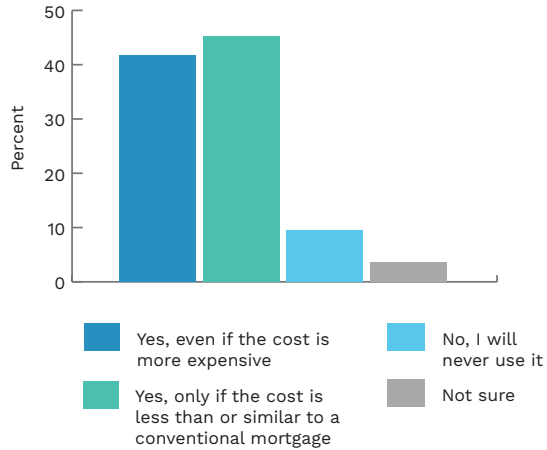
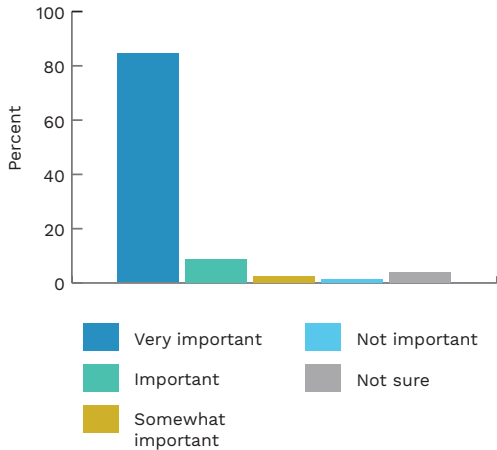
Survey respondents were asked several questions about their current use of mainstream financial services and products. Nearly all survey respondents (98.5 percent) have a checking or savings account at a bank or credit union.⁷ Only six survey respondents, or 1.5 percent, reported being “unbanked” with no accounts at either banks or credit unions. A

small percentage of respondents reported having both savings and checking accounts at both banks and credit unions. The majority of respondents use ATM, bank, or credit union services—either online or through in-person visits once or twice a week—and also

⁷ Compared to all black households in the U.S., East African households that responded to the survey exhibited different patterns of financial services behavior. For example, the portion of black households in the U.S. identified as unbanked was 16.9 percent in 2017. In addition, black households in the U.S. were less likely to visit a bank branch or to have visited ten or more times in a year as compared to East African households. For more information about the unbanked, see the report of findings from the Federal Deposit Insurance Corporation’s 2017 National Survey of Unbanked and Underbanked at www.fdic.gov/householdsurvey/2017/2017report.pdf.

How important is it to you that no-interest financing products have the blessing of leading Islamic scholars?

Would you take out a no-interest mortgage that has the blessing of leading Islamic scholars?



indicated that remittance services were important or very important to them. The majority of respondents reported that they do not utilize check cashing and payday loan stores (82.8 percent) or pawn shops (92.8 percent) to meet their household’s financial needs.

More than half (54.8 percent) of survey respondents reported using credit cards on a regular basis, a potential indicator of access to mainstream credit. Nearly one-quarter (23.7 percent) of those using credit cards reported carrying a balance from month to month and likely incurred interest and fee charges each month. In addition to reporting credit card use, 4 in 10 respondents (42.8 percent) reported that they applied for a loan at a financial institution.

Respondents were asked to rank the most important factors for selecting a financial institution. Among the closed-ended responses, “Understanding my culture or religious concerns about earning or paying interest,” “providing assistance in preferred language,” and “proximity to a branch” were ranked the highest by respondents. Other important but less frequently selected factors included those that were mostly focused on quality and convenience, including: “offering low rates and fees,” “handling all financial needs in one location,” “staying open late and on weekends,” “providing excellent quality service,” and “having a good reputation.”

Interest in homeownership and NIB mortgage products

Survey respondents were asked several questions about their interest in homeownership and NIB mortgage products.

When asked about factors that might encourage them to buy a home in Minnesota in the next three years, 4 in 5 renters (81.5 percent) identified the availability of a mortgage product that does not require payment of interest. Nearly half (49.7 percent) identified the availability of

more affordable homes in the market. Similarly, when asked to identify current obstacles to buying a home, nearly 3 in 4 renters (73.1 percent) reported that they cannot use mortgage products that require the payment of interest.

The survey also revealed a potential opportunity to increase awareness about the home-purchase process and the availability of current mortgage products in the East African community. For example, 6 out of every 10 respondents (59.0 percent) reported not understanding the difference between conventional and NIB mortgage products. In addition, only one-quarter of respondents (28.0 percent) were aware that NIB mortgage products are available in the U.S. When considering the use of NIB mortgage products, 92.8 percent of survey respondents thought it was important or very important that no-interest financing products have the blessing of leading Islamic scholars. However, of those respondents, nearly half (48.0 percent) would only use this product if the cost were either less than or similar to that of a conventional mortgage.

Multivariate analysis

These descriptive statistics above provide useful baseline information about the potential interest in homeownership and NIB mortgage products among members of the East African community in the Twin Cities. In order to better inform those organizations that are seeking to address the potential demand for these alternative financial products, this report also includes a multivariate analysis of the survey data. The goal of this analysis is twofold: 1) to estimate what proportion of survey respondents represents a potential market for a NIB mortgage product and could potentially afford to purchase a home; and 2) to identify what responses to other survey questions are associated with a potential market for a NIB mortgage product. More information about the data and methods used below can be found in Appendix D.

Since the survey asked respondents nine questions about awareness of and preference for paying or not paying interest, four steps were taken to address our first goal. The first step used a statistical method (principal component analysis) to identify the specific question or a combination of questions that identify which survey respondents exhibit a strong and favorable sentiment for a NIB mortgage product. The second step included the construction of an index by taking a simple arithmetical average of the responses to the questions selected in the first step. The third step included scoring the index to determine the proportion of survey respondents who have a strong interest in obtaining a NIB mortgage. Based on this analysis, 45.3 percent of survey respondents exhibited this strong and favorable response. Finally, the household income reported by respondents who represent a potential market for NIB mortgage products was used to determine how many Twin Cities area East African households could potentially qualify for a home mortgage product. Assuming that there are no underwriting obstacles for these respondents in securing a mortgage (such as income verification, credit

history, and other factors), 1 in 6 households in the sample with characteristics that suggest a strong interest in NIB mortgages could likely qualify for a mortgage for a \$200,000 home.⁸ Given that nearly a quarter of Twin Cities area East African households (24 percent) have an annual income that could potentially qualify for a \$200,000 home with an FHA mortgage, we estimate the market potential for NIB mortgages for \$200,000 homes to also be at least 1 in 6 East African households.⁹

To address the second goal, a Logit model was used to identify which additional survey questions (among those not already used to assess NIB mortgage readiness) were associated with whether households were estimated to be ready for a NIB mortgage product. The survey questions used in the analysis included a respondent's banking status, use of credit cards and remittances, loan application history, and other experiences with financial services. The analysis also included respondent demographic information, such as their reported age, gender, country of birth, education, working status, employment industry type, household size, monthly gross income, and marital status. Results from the analysis suggest that survey questions about familiarity with using the financial system and frequency of using remittance services were strongly associated with whether respondents were estimated to be ready for a NIB mortgage product.

Conclusion and implications

This exploratory study sought to measure the use of mainstream banking services among East African households in the Twin Cities area and their level of interest in NIB financial products and services. Survey results suggest that the majority of East African households in the Twin Cities area do, in fact, use mainstream banking services and credit cards, and that the majority of East African households expect they would use a NIB mortgage product that had the blessing of Islamic scholars if offered to them. The other factor that influenced preference for NIB mortgage products was cost. About half who said that they would use a NIB mortgage indicated that they would only do so if the cost were similar to or less than that of a traditional mortgage loan. This finding suggests that demand for NIB mortgages is not only based on religious preference but also motivated by economic factors.

Lenders interested in this market may want to consider several factors before determining if they can provide NIB mortgage products to East African households, such as the size of

⁸ See Appendix F for input information to calculate annual income requirements.

⁹ Using the Twin Cities area East African population as a proxy, we estimate the number of households with a strong interest in NIB mortgages to be roughly 10,000 (43.3 percent of 23,858). The market potential for NIB mortgages could be at least 1,600 households, reflecting a market potential of over \$300 million of mortgage financing.

the premium on these products. More detailed information about these households—perhaps attained through focus groups or in-depth market analysis—is also needed in order to shed more light on individual preferences and the benefits and challenges associated with offering these products, especially to lower income households. In addition, since a segment of respondents indicated that they already use or may not be opposed to using conventional financial products, increasing the affordability of existing products could also spur homeownership opportunities. Overall, the lack of understanding of mortgage lending products—both conventional and NIB—by respondents suggests that efforts to increase financial awareness are needed.

List of Appendices

- A. Survey Questionnaire
- B. Background on Islamic Finance in the U.S.
- C. Descriptive Tables/Frequencies
- D. Modeling Demand for NIB Mortgages
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- F. Annual Income Requirement for an FHA Mortgage for a \$200,000 Home

Appendix A: Survey Questionnaire

Twin Cities Survey for East African Households

Introduction

Greetings! You are invited to take part in a survey about the housing and credit needs of East African households in the Twin Cities metro area. The purpose of this survey is to gather information that can be used to design financial products, including those which are Sharia compliant, that can be used to support families in reaching the goal of homeownership. In order to design financial products that work well for East Africans, it is very important that we hear from you! This survey is being conducted by the Community Development Department of the Federal Reserve Bank of Minneapolis in partnership with Twin Cities Local Initiatives Support Corporation, NeighborWorks Home Partners, Sakan Community Resource, and Noor Development. The information you provide will remain confidential. In any report or other materials that are published, we will not include any information that will make it possible to identify you or any members of your household. Your decision to participate in this survey is entirely voluntary. Your decision on whether to participate will not affect your current relationship with any of the partners who are conducting the survey, nor will it affect any benefits or services to which you are otherwise entitled. There is no cash compensation for participation in this survey. However, there are 350 \$10.00 gift cards to Target available and they will be distributed on a first-come, first-served basis. Upon completion of the survey, participants can provide a mailing address where the gift card should be sent. Each household is eligible to participate in the survey only once—one adult resident per household.

This survey will take about 15 minutes to complete. You may begin the survey now. If you have any questions or experience difficulties filling out the survey, please contact Michou Kokodoko of the Federal Reserve Bank of Minneapolis at michou.kokodoko@mpls.frb.org.

Homeownership and affordability

1 Do you own or rent your current residence?

- Own
- Rent
- Neither—I live in a residence owned or rented by someone else

2. What is your approximate rent or mortgage payment each month?

- Less than \$500
- \$500 to \$999
- \$1,000 to \$1,499
- \$1,500 to \$1,999
- \$2,000 to \$2,499
- \$2,500 or more

3. *The next two questions are asked of those who reported renting in question 1. What might encourage you to buy a home in Minnesota in the next 3 years? (Check all that apply.)*
- More affordable homes on the market
 - An increase in monthly income
 - A mortgage that does not require payment of interest
 - Financial assistance with a down payment
 - Other (please specify) _____
4. What obstacles to buying a home stand in your way at this time? (Check all that apply)
- I do not have money for a down payment
 - I cannot afford the monthly payments
 - My credit score is too low
 - The home buying process is too complicated
 - I cannot use mortgage products that require payment of interest
 - I prefer renting over owning a home

Alternative mortgage products

5. Do you understand the difference between no-interest financing and conventional financing?
- Yes
 - No
 - Not sure
6. Are you aware that no-interest mortgages are available in the U.S.?
- Yes
 - No
 - Not sure
7. If no-interest mortgages were available, which types would you prefer?
- Lease-to-own financing (Ijara)
 - Cost-plus financing (Murabahah)
 - Partnership financing (Musharakah)
 - Other (please specify) _____
 - I do not know
8. Why did you choose this method? (*Asked of those who selected one of the first four options in question 7*)
- _____
- _____
- _____
9. How important is it to you that no-interest financing products have the blessing of leading Islamic scholars?
- Very important
 - Important
 - Somewhat important
 - Not important
 - Not sure

10. Would you take out a no-interest mortgage that has the blessing of leading Islamic scholars?

- Yes, even if the cost is more expensive
- Yes, only if the cost is less than or similar to a conventional mortgage
- No, I will never use it
- Not sure

Financial situation

11. Do you currently have a savings account or a checking account at any of the following?

	Savings	Checking	Both savings and checking	Neither
Bank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Credit union	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. Please indicate why you have not opened an account at a bank or credit union? (Check all that apply) (*Asked of those who reported no accounts with either banks or credit unions in question 11*)

- I am not sure which one would be best for me
- There are no banks in my neighborhood
- I feel uncomfortable having to speak English
- I think they may discriminate against me
- I don't know anyone who works there
- I don't need one. Please explain why.
- _____
- I think I may get charged hidden fees
- I am concerned that my money will not be safe
- I do not have enough money for the required minimum balance
- I had a bad experience with a financial institution in the past
- Other _____

13. Do you use a credit card?

- Yes
- No
- No, but I would like to

14. Which best describes your credit card usage? (*Asked of those who answered "Yes" to question 13*)

- I pay off the card's balance in full each month
- I carry a balance over from month to month

15. Have you ever applied for a loan through any financial institution (e.g., car loan, personal loan, personal line of credit, business loan, home mortgage, or student loan)?

- Yes
- No

16. How often do you use the following financial services—either online or through in-person visits?
(Select only one answer on each line)

	Once or twice a week	Every two weeks	Once a month	Once every three months	Never
ATM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bank (<i>Asked of those who reported having an account with a bank in question 11</i>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Credit union (<i>Asked of those who reported having an account with a credit union in question 11</i>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check cashing or payday loan store	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pawn shop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. Rank the following financial services by level of importance to you. (Select only one answer on each line)

	Not at all important	Somewhat important	Important	Very important	No opinion
Savings account	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checking account	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check cashing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Money orders/cashier's checks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Remittance (Hawala)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bill paying services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Debit/credit card	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. Rank the following financial products by level of importance to you. (Select only one answer on each line)

	Not at all important	Somewhat important	Important	Very important	No opinion
Short-term loans to pay for items before the next payday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Car loans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Small business start-up loans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Student loans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Home mortgage loans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Home improvement/repair loans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prepaid cards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. Please rank the following points in order of importance to you when choosing a financial institution—1 as Most important, 2 as Second-most important, etc. (Must rank at least 5)

- _____ Understanding my culture or religious concerns about earning or paying interest
- _____ Being close to my home
- _____ Offering low rates and fees
- _____ Handling all my financial needs in one location
- _____ Staying open late and on weekends
- _____ Providing information and assistance in my preferred language. Please specify which language _____
- _____ Providing excellent quality service
- _____ Having a good reputation
- _____ Other _____

20. Does your household have enough money saved to cover 2 months of expenses in case of sickness, job loss, or emergency?

- No
- Yes
- Not sure

21. How much money does your household have set aside for emergency situations? (*Asked of those who answered "Yes" or "Not sure" to question 20*)

- Less than \$1,000
- \$1,000 to \$2,500
- \$2,501 to \$4,000
- More than \$4,000

22. Rank how you would cover your expenses for one month if you lost your source of income—1 as What you would do first, 2 as What you would do second, etc.

- _____ Use up my savings
- _____ Sell things I own to pay my expenses
- _____ Borrow money
- _____ Depend on charity/mosque
- _____ Find a job/get an additional job
- _____ Depend on my rotating savings association (e.g., Ayuuto, Hagbad, Chama)

Respondent details

23. How old are you?

- 24 or under
- 25 to 34
- 35 to 44
- 45 to 54
- 55 to 64
- 65 +

24. What is your gender?

- Male
- Female

25. Where was your place of birth?

- Somalia
- Eritrea
- Ethiopia
- Kenya
- Other (please specify) _____

26. What is the highest level of education you have completed?

- No high school
- Some high school
- High school graduate (diploma or equivalent, including GED)
- Some college but no degree
- Associate degree (2-year)
- Bachelor's degree (4-year)
- Master's degree
- Professional degree (Ph.D., M.D., etc.)

27. Check all of the following options that currently apply to you:

- Employed for wages
- Self-employed
- Out of work and looking for employment
- Out of work and not looking for employment
- Homemaker
- Student
- In the military
- Retired
- Disabled

28. Which industry most closely matches the one in which you are employed? (*Displayed if respondents answered "Employed for wages" or "Self-employed" in question 27*)

- Construction
- Hospitality
- Healthcare
- Manufacturing
- Education
- Finance and insurance
- Transportation
- Information
- Government
- Retail
- Other _____

29. What is the size of your household? (Include yourself in the count)

- 1
- 2 to 4
- 5 to 7
- More than 7

30. Which best describes your monthly household gross income (i.e., your income before taxes and other deductions are taken out)? (Include income from all employed adults in the household.)

- Less than \$1,250
- \$1,250 to \$2,499
- \$2,500 to \$3,749
- \$3,750 to \$4,999
- \$5,000 or more

31. What is your current marital status?

- Never married
- Married
- Widowed
- Divorced
- Separated

32. What is your home ZIP Code?

Thank you!

Thank you for taking the time to complete this survey. We truly value the information you have provided. **Click Next to continue with additional questions or to end the survey.**

33. **Additional questions.** We are also exploring the need for a **community development credit union** to provide affordable financial services to East African people and families living or working in the Twin Cities. **A credit union is like a bank, but created by community members. Credit unions hold money in savings accounts for members, make loans, and offer other services, such as checking accounts, money orders, and cash transfers.** As a member, you have a say about what services are offered. You may proceed to the next page to fill out this part of the survey to help us understand how your financial needs can be best met. Are you interested in completing this portion of the survey?

- Yes
- No

The following questions were asked of those who answered "Yes" to question 33.

34. If it were available to you, how likely would you be to join a credit union specifically developed for East Africans living in the Twin Cities?

- Extremely likely
- Likely
- Unlikely
- Extremely unlikely
- Not sure

35. To join a credit union, one must deposit money into a savings account. If you decided to join a credit union, how much money would you put in your savings account?

- \$5 to \$49
- \$50 to \$99
- \$100 to \$149
- \$150 to \$250
- \$250 or more

36. If you joined a credit union, how often would you put money into your savings account?

- Once or more a week
- Every two weeks
- Once a month
- Less than once a month

37. If you decided to use a credit union, how far would you be willing to travel to get there?

- Less than 1 mile
- 1 to 5 miles
- More than 5 miles
- I prefer an online credit union

Thank you!

Prize and Contact Information

38. There are 350 \$10 Target gift cards set aside for survey respondents on a first-come, first-served basis. Would you like one?

- Yes
- No

39. If a new credit union opens to serve the East African community, would you like to receive information about it?

- Yes
- No

40. Please provide your contact information. *(Asked of those who answered "Yes" to either question 38 or question 39)*

- Name (first name, last name) _____
- Address (street, city, state, Zip Code) _____
- Mobile phone number _____
- Email address _____

End

Appendix B: Background on Islamic Finance in the U.S.

Islamic finance products are different from conventional finance products in that they seek to comply with principles of Islamic law and with existing laws and regulations.¹ Islamic finance products can be matched to some conventional finance products as long as interest and speculation are absent. For example, a person interested in buying a home could agree to leasing the house with a property transfer to own it outright at the end of a term, rather than borrowing money upfront to acquire it with fixed interest payments. In addition, instead of taking out a loan to purchase equipment, a small business owner could work with a financial institution to buy the item and sell it to the business at a higher price on installment, with a provision that the selling price cannot be raised once the contract is signed. The financial return is defined beforehand. In case of default or late payments, options include third-party guarantees, collateral guarantees on the customer's assets, or a penalty fee to be paid to an Islamic charity.²

The application of Islamic law to mainstream financial practices in the U.S. also raises a number of potential challenges.³ One challenge involves the added costs of offering Islamic finance products, some of which stem from the extensive research required to develop new methods of financing, design necessary documents, consult with Islamic scholars and regulatory experts, and train staff in new procedures.

Since the late 1990s, a number of Islamic finance products have been developed in the U.S. For example, the Office of the Comptroller of the Currency (OCC) in 1997 approved the residential net lease-to-own home finance product (Ijara wa iqtina⁴) because it is “functionally equivalent” to conventional secured real estate lending. In 1999, the OCC approved the use of the Murabahah⁵—a “cost plus profit” structure—to help Islamic finance customers engage in real estate financing transactions and commercial inventory and equipment financing transactions with their financial institution. This structure was deemed to be “functionally equivalent” to either a real estate mortgage transaction or an inventory or equipment loan agreement. Following these two rulings, some conventional financial institutions began offering some models of Islamic finance products. For example, Bank of Whittier, NA, created LARIBA American Finance House.

¹ *Overview of Islamic Finance*, U.S. Department of the Treasury, Office of International Affairs, August 2006.

² See the web page “Fact or Myth? Islamic Finance Is More Expensive than Conventional Home Loans” from Guidance Residential at www.guidanceresidential.com/resources/islamic-finance-vs-conventional-home-loans.

³ For a discussion of some of these issues, see “Alternative financing: Issues and opportunities for lenders and interest-averse populations,” Federal Reserve Bank of Minneapolis, August 2002.

⁴ *Interpretive Letter #806*, Office of the Comptroller of the Currency, December 1997. Available at www.occ.gov/topics/licensing/interpretations-and-actions/1997/int806.pdf.

⁵ *Interpretive Letter #867*, Office of the Comptroller of the Currency, November 1999. Available at www.occ.gov/topics/licensing/interpretations-and-actions/1999/int867.pdf.

Appendix C: Descriptive Tables/Frequencies

The following tables summarize the responses to all the survey questions and, in some cases, show how these responses compare to the broader East African population in the Twin Cities region.

<i>From survey question 1:</i> Do you own or rent your current residence?	Frequency	Percent*	Percent 2013–2017 ACS**
Neither—I live in a residence owned or rented by someone else	11	–	–
Own	65	16.7	19.7
Rent	324	83.3	80.3
Total	400	100	100

*Ratio was based on the frequency total for renters and owners to match tenure data from the American Community Survey.

**ACS IPUMS data for five Twin Cities area counties for East African households born in Eritrea, Ethiopia, Kenya, and Somalia.

<i>From survey question 2:</i> What is your approximate rent or mortgage payment each month?	Frequency	Percent	Percent 2013–2017 ACS**
Less than \$500	40	10.0	30.9
\$500 to \$999	105	26.3	35.0
\$1,000 to \$1,499	184	46.0	24.6
\$1,500 to \$1,999	65	16.3	7.6
\$2,000 to \$2,499	5	1.3	1.2
\$2,500 or more	1	0.3	0.6
Total	400	100	100

**ACS IPUMS data for five Twin Cities area counties for East African households born in Eritrea, Ethiopia, Kenya, and Somalia.

<i>From survey question 23:</i> Age	Frequency	Percent	Percent 2013–2017 ACS†
24 or under	33	8.3	14.7
25 to 34	96	24.0	30.2
35 to 44	126	31.5	27.8
45 to 54	89	22.3	14.1
55 to 64	46	11.5	6.5
65 +	10	2.5	7.0
Total	400	100	100

†ACS IPUMS data for five Twin Cities area counties for East African residents (age 18 and over) born in Eritrea, Ethiopia, Kenya, and Somalia.

<i>From survey question 24:</i> Gender	Frequency	Percent	Percent 2013–2017 ACS[‡]
Female	163	40.8	53.9
Male	237	59.3	46.1
Total	400	100	100

[‡] ACS IPUMS data for five Twin Cities area counties for East African residents (age 18 and over) born in Eritrea, Ethiopia, Kenya, and Somalia.

<i>From survey question 25:</i> Place of birth	Frequency	Percent	Percent 2013–2017 ACS[‡]
Eritrea	1	0.3	4.0
Ethiopia	100	25.0	33.7
Kenya	19	4.8	15.6
Somalia	262	65.5	46.7
Other (please specify)	18	4.5	-
Total	400	100	100

[‡]ACS IPUMS data for five Twin Cities area counties for East African residents born in Eritrea, Ethiopia, Kenya, and Somalia.

<i>From survey question 26:</i> Education	Frequency	Percent	Percent 2013–2017 ACS[‡]
High school or less	191	47.7	55.6
Associate's degree & some college	89	22.3	28.8
Bachelor's degree	80	20.0	12.2
Graduate or professional degree	40	10.0	3.4
Total	400	100	100

[‡]ACS IPUMS data for five Twin Cities area counties for East African residents born in Eritrea, Ethiopia, Kenya, and Somalia.

<i>From survey question 30:</i> Annual household gross income	Frequency	Percent	Percent 2013–2017 ACS[‡]
Less than \$15,000	68	17.0	24.4
\$15,000 to \$29,999	98	24.5	22.2
\$30,000 to \$44,999	85	21.3	15.9
\$45,000 to \$59,999	66	16.5	12.6
\$60,000 or more	83	20.8	24.9
Total	400	100	100

[‡]ACS IPUMS data for five Twin Cities area counties for East African households born in Eritrea, Ethiopia, Kenya, and Somalia and for whom household income is known.

<i>From survey question 3:</i> What might encourage you to buy a home in Minnesota in the next 3 years? (Check all that apply.)	Frequency	Percent
A mortgage that does not require payment of interest	264	81.5
More affordable homes on the market	161	49.7
Financial assistance with a down payment	112	34.6
An increase in monthly income	90	5.9
Other (please specify)	8	2.5

<i>From survey question 4:</i> What obstacles to buying a home stand in your way at this time? (Check all that apply)	Frequency	Percent
I cannot use mortgage products that require payment of interest	237	73.1
I do not have money for a down payment	118	36.4
The home buying process is too complicated	95	29.3
My credit score is too low	57	17.6
I cannot afford the monthly payments	41	12.6
I prefer renting over owning a home	20	6.2

<i>From survey question 5:</i> Do you understand the difference between no-interest financing and conventional financing?	Frequency	Percent
No	145	36.3
Not sure	91	22.8
Yes	164	41.0
Total	400	100

<i>From survey question 6:</i> Are you aware that no-interest mortgages are available in the U.S.?	Frequency	Percent
No	192	48.0
Not sure	96	24.0
Yes	112	28.0
Total	400	100

<i>From survey question 7:</i> If no-interest mortgages were available, which types would you prefer?	Frequency	Percent
I do not know	247	61.8
Lease-to-own financing (Ijara)	77	19.3
Cost-plus financing (Murabahah)	37	9.3
Partnership financing (Musharakah)	33	8.3
Other (please specify)	6	1.5
Total	400	100

<i>From survey question 9:</i> How important is it to you that no-interest financing products have the blessing of leading Islamic scholars?	Frequency	Percent
Very important	336	84.0
Important	35	8.8
Somewhat important	9	2.3
Not important	5	1.3
Not sure	15	3.8
Total	400	100

<i>From survey question 10:</i> Would you take out a no-interest mortgage that has the blessing of leading Islamic scholars?	Frequency	Percent
No, I will never use it	14	3.5
Not sure	38	9.5
Yes, even if the cost is more expensive	181	45.3
Yes, only if the cost is less than or similar to a conventional mortgage	167	41.8
Total	400	100

<i>From survey question 31:</i> Do you currently have a savings account or a checking account at a credit union?	Frequency	Percent
Both savings and checking	32	8.0
Checking	22	5.5
Neither	338	84.5
Savings	8	2.0
Total	400	100

<i>From survey question 12:</i> Please indicate why you have not opened an account at a bank or credit union? (Check all that apply)	Frequency	Percent
I am not sure which one would be best for me	5	83.3
There are no banks in my neighborhood	5	83.3
I am concerned that my money will not be safe	2	33.3
I think I may get charged hidden fees	2	33.3
I do not have enough money for the required minimum balance	1	16.7
I feel uncomfortable having to speak English	1	16.7
I don't know anyone who works	1	16.7
Other	1	16.7
I think they may discriminate against me	-	-
I had a bad experience with a financial institution in the past	-	-
I don't need one. Please explain why.	-	-
Total	6	100

<i>From survey question 13:</i> Do you use a credit card?	Frequency	Percent
No	169	42.3
No, but I would like to	12	3.0
Yes	219	54.8
Total	400	100

<i>From survey question 14:</i> Which best describes your credit card usage?	Frequency	Percent
I pay off the card's balance in full each month	167	23.7
I carry a balance over from month to month	52	76.3
Total	219	100

<i>From survey question 15:</i> Have you ever applied for a loan through any financial institution (e.g., car loan, personal loan, personal line of credit, business loan, home mortgage, or a student loan)?	Frequency	Percent
No	229	57.3
Yes	171	42.8
Total	400	100

From survey question 16:

How often do you use ATMs—either online or through in-person visits? (Select only one answer on each line)	Frequency	Percent
Once or twice a week	203	50.7
Every two weeks	107	26.8
Once a month	57	14.2
Once every three months	17	4.3
Never	16	4.0
Total	400	100
How often do you use bank services - either online or through in-person visits? (Select only one answer on each line) (Asked of those who have accounts with banks)	Frequency	Percent
Once or twice a week	137	35.2
Every two weeks	135	34.7
Once a month	81	20.8
Once every three months	20	5.1
Never	16	4.1
Total	400	100
How often do you use credit union services - either online or through in-person visits? (Select only one answer on each line) (Asked of those who have accounts with credit unions)	Frequency	Percent
Once or twice a week	17	27.4
Every two weeks	9	14.5
Once a month	18	29.0
Once every three months	6	9.7
Never	12	19.4
Total	62	100
How often do you use check cashing or payday loan store services—either online or through in-person visits? (Select only one answer on each line)	Frequency	Percent
Once or twice a week	22	5.5
Every two weeks	14	3.5
Once a month	14	3.5
Once every three months	19	4.8
Never	331	82.8
Total	400	100
How often do you use pawn shop services—either online or through in-person visits? (Select only one answer on each line)	Frequency	Percent
Once or twice a week	6	1.5
Every two weeks	2	0.5
Once a month	3	0.8
Once every three months	18	4.5
Never	371	92.8
Total	400	100

From survey question 17:

Rank the following financial services by level of importance to you. (Select only one answer on each line)		
Savings account	Frequency	Percent
Very important	150	37.5
Important	102	25.5
Somewhat important	37	9.3
Not at all important	94	23.5
No opinion	17	4.3
Total	400	100
Checking account	Frequency	Percent
Very important	262	65.5
Important	100	25.0
Somewhat important	18	4.5
Not at all important	16	4.0
No opinion	4	1.0
Total	400	100
Check cashing	Frequency	Percent
Very important	32	8.0
Important	41	10.3
Somewhat important	50	12.5
Not at all important	212	53
No opinion	65	16.3
Total	400	100
Money orders/cashier's checks	Frequency	Percent
Very important	96	24.0
Important	67	16.8
Somewhat important	105	26.3
Not at all important	87	21.8
No opinion	45	11.3
Total	400	100
Remittance (Hawala)	Frequency	Percent
Very important	177	44.3
Important	101	25.3
Somewhat important	59	14.8
Not at all important	31	7.8
No opinion	32	8.0
Total	400	100

From survey question 17 (continued):

Bill paying services	Frequency	Percent
Very important	124	31.0
Important	76	19.0
Somewhat important	77	19.3
Not at all important	85	21.3
No opinion	38	9.5
Total	400	100
Debit/credit card	Frequency	Percent
Very important	177	44.3
Important	105	26.3
Somewhat important	41	10.3
Not at all important	52	13.0
No opinion	25	6.3
Total	400	100

From survey question 18:

Rank the following financial products by level of importance to you. (Select only one answer on each line)		
Short-term loans to pay for items before the next payday	Frequency	Percent
Very important	33	8.3
Important	55	13.8
Somewhat important	54	13.5
Not at all important	197	49.3
No opinion	61	15.3
Total	400	100
Car loans	Frequency	Percent
Very important	68	17.0
Important	120	30.0
Somewhat important	79	19.8
Not at all important	96	24.0
No opinion	37	9.3
Total	400	100
Small business start-up loans	Frequency	Percent
Very important	64	16.0
Important	102	25.5
Somewhat important	79	19.8
Not at all important	96	24.0
No opinion	59	14.8
Total	400	100

From survey question 18 (continued):

Student loans	Frequency	Percent
Very important	89	22.3
Important	119	29.8
Somewhat important	69	17.3
Not at all important	86	21.5
No opinion	37	9.3
Total	400	100
Home mortgage loans	Frequency	Percent
Very important	142	35.5
Important	101	25.3
Somewhat important	44	11.0
Not at all important	74	18.5
No opinion	39	9.8
Total	400	100
Home improvement/repair loans	Frequency	Percent
Very important	62	15.5
Important	76	19.0
Somewhat important	91	22.8
Not at all important	120	30.0
No opinion	51	12.8
Total	400	100
Prepaid cards	Frequency	Percent
Very important	37	9.3
Important	34	8.5
Somewhat important	62	15.5
Not at all important	191	47.8
No opinion	76	19.0
Total	400	100

From survey question 19:
Ranking of the most important factors for selecting financial institutions (frequencies)

	First most important	Second most important	Third most important	Fourth most important	Fifth most important
Understanding my culture or religious concerns about earning or paying interest	266	58	29	14	9
Being close to my home	8	85	71	76	59
Offering low rates and fees	15	38	70	48	54
Handling all my financial needs in one location	7	44	60	88	74
Staying open late and on weekends	9	11	22	46	82
Providing information and assistance in my preferred language	56	101	46	30	21
Providing excellent quality service	27	44	69	54	38
Having a good reputation	6	16	23	37	57
Other	6	3	10	7	6

From survey question 20:

Does your household have enough money saved to cover 2 months of expenses in case of sickness, job loss, or emergency?	Frequency	Percent
No	184	46.0
Not sure	64	16.0
Yes	152	38.0
Total	400	100

From survey question 21:
[If “Yes” or “not sure” on the previous question:] How much money does your household have set aside for emergency situations?

	Frequency	Percent
Less than \$1,000	33	15.3
\$1,000 to \$2,500	68	31.5
\$2,501 to \$4,000	30	13.9
More than \$4,000	85	39.4
Total	216	100

<i>From survey question 27:</i>		
Working status (respondents could check all that applied)	Frequency	Percent
Employed for wages	249	62.3
Self-employed	108	27.0
Student	50	12.5
Retired	18	4.5
Out of work and looking for employment	16	4.0
Homemaker	12	3.0
Disabled	7	1.8
Out of work and not looking for employment	6	1.5
In the military	-	-

<i>From survey question 28:</i>		
Industry	Frequency	Percent
Healthcare	78	23.1
Transportation	73	21.7
Education	42	12.5
Manufacturing	38	11.3
Retail	34	10.1
Government	23	6.8
Other	20	5.9
Hospitality	13	3.9
Finance and insurance	7	2.1
Information	7	2.1
Construction	2	0.6
Total	337	100

<i>From survey question 29:</i>		
Size of your household	Frequency	Percent
1	50	12.5
2 to 4	175	43.8
5 to 7	130	32.5
More than 7	45	11.3
Total	400	100

<i>From survey question 31:</i> Marital status	Frequency	Percent
Married	285	71.3
Never married	59	14.8
Separated	23	5.8
Divorced	21	5.3
Widowed	12	3.0
Total	400	100

The following section was optional for respondents.

<i>From survey question 34:</i> If it were available to you, how likely would you be to join a credit union specifically developed for East Africans living in the Twin Cities?	Frequency	Percent
Extremely likely	166	61.3
Likely	79	29.2
Not sure	22	8.1
Unlikely	2	0.7
Extremely unlikely	2	0.7
Total	271	100

<i>From survey question 35:</i> To join a credit union, one must deposit money into a savings account. If you decided to join a credit union, how much money would you put in your savings account?	Frequency	Percent
\$5 to \$49	49	18.1
\$50 to \$99	30	11.1
\$100 to \$149	51	18.8
\$150 to \$250	34	12.5
\$250 or more	107	39.5
Total	271	100

<i>From survey question 36:</i> If you joined a credit union, how often would you put money into your savings account?	Frequency	Percent
No answer	1	0.4
Once or more a week	101	37.3
Every two weeks	83	30.6
Less than once a month	12	4.4
Once a month	74	27.3
Total	271	100

<i>From survey question 37:</i> If you decided to use a credit union, how far would you be willing to travel to get there?	Frequency	Percent
No answer	1	0.4
Less than 1 mile	94	34.7
1 to 5 miles	93	34.3
More than 5 miles	55	20.3
I prefer an online credit union	28	10.3
Total	271	100

Appendix D: Modeling Demand for NIB Mortgages

This is a description of the steps taken to estimate what proportion of survey respondents represents a potential market for a NIB mortgage product and could potentially afford to purchase a home.

The following questions were included in the analysis to measure the sentiment of a respondent about paying interest in a financial transaction.

- Variable 1 (V1): What might encourage you to buy a home in Minnesota in the next 3 years? (from question 3)
- Variable 2 (V2): What obstacles to buying a home stand in your way at this time? (from question 4)
- Variable 3 (V3): Do you understand the difference between no-interest financing and conventional financing? (from question 5)
- Variable 4 (V4): Are you aware that no-interest mortgages are available in the U.S.? (from question 6)
- Variable 5 (V5): If no-interest mortgages were available, which types would you prefer? (from question 7)
- Variable 6 (V6): How important is it to you that no-interest financing products have the blessing of leading Islamic scholars? (from question 9)
- Variable 7 (V7): Would you take out a no-interest mortgage that has the blessing of leading Islamic scholars? (from question 10)
- Variable 8 (V8): Rank home mortgage loan by level of importance. (from question 18)
- Variable 9 (V9): Rank cultural and religious beliefs in order of importance to you when choosing a financial institution. (from question 19)

Responses to these questions were categorized into binary items. See the values in the table below. This approach is somewhat conservative, as it treats intermediate responses the same as responses showing little or no demand for NIB mortgage products.

Variables	Option(s) of interest	Response value	Value for all other responses
V1	Respondent indicates that a mortgage that does not require payment of interest would encourage him/her to buy a house.	1	0
V2	Respondent also selects “I cannot use mortgage products that require payment of interest” as an obstacle to buying a house	1	0
V3	Respondent understands the difference between no-interest financing and conventional financing	1	0
V4	Respondent is aware of the availability of Islamic finance products in the U.S.	1	0

Variables	Option(s) of interest	Response value	Value for all other responses
V5	Respondent can identify their preferred type of NIB mortgage	1	0
V6	It is important to the respondent that no-interest financing products have the blessing of leading Islamic scholars	1	0
V7	Respondent will take out a NIB mortgage that has the blessing of leading Islamic scholars even if the cost is more expensive	1	0
V8	Respondent ranks home mortgage loan as important or very important financial product	1	0
V9	When choosing a financial institution, respondent considers the institution's understanding culture or religious concerns about earning or paying interest as most important	1	0

To create a single indicator of desire for a NIB mortgage product, a principal component analysis (PCA) was used to analyze patterns of correlation between all the nine questions and thereby identify key variables for analysis. Given that PCA is based on correlations between measured variables, a correlation matrix was computed and polychoric⁶ correlations were then used to identify the three components with the highest eigenvalues.⁷

⁶ Polychoric correlations measure the degree of agreement among rankings of multiple items.

⁷ The default in most statistical popular software packages, such as SPSS, when dealing with a correlation matrix is the Kaiser criterion—that is, to retain all factors with eigenvalues greater than 1. For more information, see Muthèn and Kaplan 1985; Gilley and Uhlig 1993.

Principal Components Analysis Results

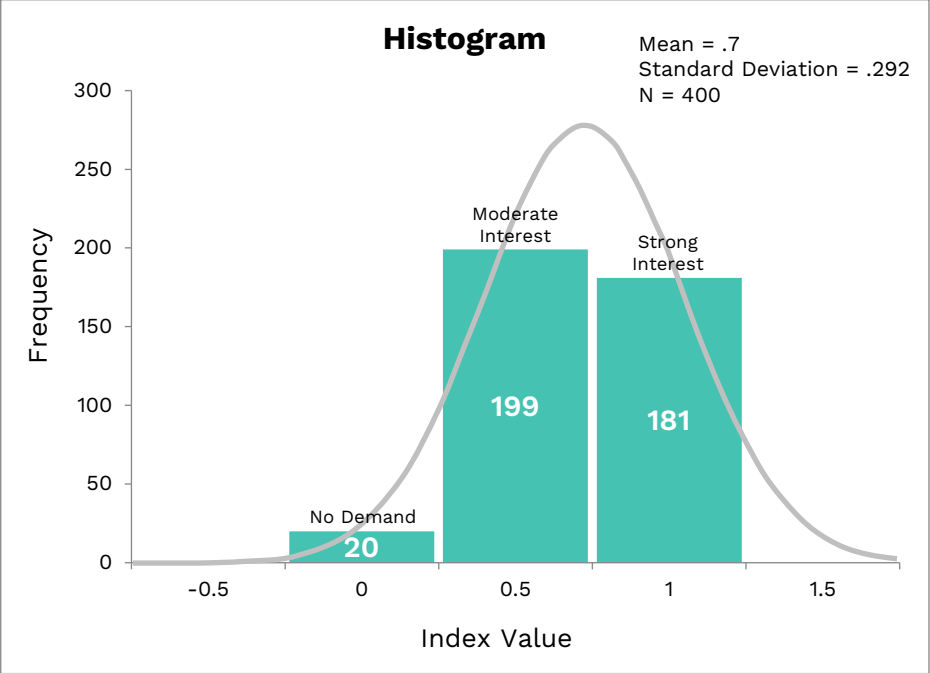
Rotated component matrix			
Variables	Components		
	1	2	3
V1	0.911	-0.165	0.151
V2	0.944	-0.156	0.151
V3		0.659	-0.263
V4	-0.295	0.832	
V5	-0.325	0.416	
V6	0.177	0.309	0.932
V7		-0.229	0.971
V8	0.187	0.684	0.157
V9	0.251	0.170	

Highlights: highest values retained (above absolute value of .5)

After computing correlations, means values for each component are computed to determine which one provides the best explaining factor. Component 3 had the highest score and is retained as the best explaining factor and our composite variable or index. The final step included scoring the index to determine the proportion of survey respondents who have a strong interest in obtaining a NIB mortgage.

Components scores as means over variables	N	Minimum	Mean	Maximum
Component 1: Impact of value in not paying interest to conform with Islamic law	400	0	.626	1
Component 2: Awareness of Islamic compliant mortgage products and value of home mortgage as a financial product	400	0	.469	1
Component 3: Value of blessing by leading Islamic scholars	400	0	.701	1

Histogram classification of NIB mortgage product interest based on index value computed. Respondents regarded as estimated/predicted to be potentially ready for a NIB mortgage product are only the “strong interest” group, assuming (conservatively) zero readiness from the large “moderate interest” group.



Appendix E: Factors Affecting Demand for NIB Mortgages (Regression Results)

Here we assess whether some additional variables, which were not included in our estimates of NIB mortgage readiness, can help predict which households are estimated to be NIB-mortgage-ready. Since the variable we seek to explain, estimated NIB mortgage readiness, is qualitative (i.e., has values of just 1 or 0, corresponding to “yes” and “no”), we use a form of regression analysis (Logit analysis) suitable for this type of dependent variable. In technical terms, we seek to explain each household’s odds ratio in favor of NIB mortgage readiness as a function of the following explanatory variables (none of which were used in computing our estimate of NIB mortgage readiness): banking status, credit card use, loan application history, use of remittance services, age, gender, country of birth, education, working status, industry type, household size, monthly gross income, and marital status.

Recoding some of the independent variables:

Variables	Breakdown
Demand index	1 if index value is 1 and 0 otherwise
Banking status	3 categories: respondent owns both savings and checking accounts, at least one account, and respondent is unbanked
Remittance user	2 categories: remittance services are important (very to somewhat important) to the respondent or they are not
Age	2 categories: respondent is at a prime age to purchase a home (35 to 54) or is not
Country of birth	2 categories: respondent is born in Somalia or born elsewhere
Education	3 categories: respondent has earned at least a bachelor’s degree, has either earned an associate degree or has completed some college work, or is at or less than a high school level
Working status	2 categories: respondent is currently working or is not
Industry	2 categories: respondent works either in the healthcare or transportation industry or elsewhere
Household size	3 categories: size is over 5 people, respondent lives alone, or there are 2 people in the household
Monthly income	3 if respondent earns a least \$5,000 monthly, 1 if monthly income is less than \$2,500, and 2 otherwise
Marital status	2 categories: respondent either is married or is not

Final Logit model in R software:

```
glm(formula = Accept_NIB ~ applied_for_loan + remittance_user + age + gender + banking +
birth_place + work_status + education + hhold_size + marital_status, family = "binomial," data =
trainData)
```

Regression Results

Coefficients	Estimate	Standard Error	z value	Pr(> z)
(Intercept)	0.6573	0.7865	0.836	0.40331
Applied for loan Yes	0.9155	0.3132	-2.923	0.00346**
Remittance user No opinion	0.3842	0.5620	-0.684	0.49425
Remittance user Not at all important	0.1518	0.5017	0.303	0.76226
Remittance user Somewhat important	0.1384	0.4367	-0.317	0.75122
Remittance user Very important	0.9475	0.3364	2.817	0.00485**
Age Other	0.2910	0.2842	1.024	0.30586
Gender Male	0.1855	0.2944	-0.630	0.52862
Banking Both savings and checking	0.9196	0.2950	-3.117	0.00183**
Banking Neither	0.5316	1.0172	-0.523	0.60126
Birth place Somalia	0.1842	0.3137	0.587	0.55712
Work status Working	0.3743	0.4114	0.910	0.36291
Education High school or less	0.0908	0.3586	0.253	0.80009
Education Some college	0.5126	0.3656	1.402	0.16085
Household 2 to 4	-0.8273	0.4866	-1.700	0.08908 .
Household 5 and more	-0.9890	0.5046	-1.960	0.05002 .
Marital status Other	-0.5044	0.3490	-1.445	0.14836

Deviance Residuals

Min	1Q	Median	3Q	Max
-2.2894	-0.8579	-0.4978	0.9412	2.1770

Appendix F: Annual Income Requirement for an FHA Mortgage for a \$200,000 Home

Monthly principal & interest:	\$1,036.07
Monthly real estate taxes:	\$291.67
Monthly homeowner's insurance:	\$125.00
Loan to value ratio:	96.50 percent
Months with private mortgage insurance (PMI):	111
Monthly PMI payment:	\$80.42
Front end ratio:	31.00 percent
Max allowable monthly homeowner expenses (@ 31.000 percent of front end ratio):	\$1,533.15
Back end ratio:	43.00 percent
Max allowable monthly debt payment amount (@ 43.000 percent of back end ratio):	\$1,380.18
Required monthly income:	\$4,945.64
Required annual income:	\$59,347.71

If the home costs \$200,000 and the buyer plans to put \$7,000.00 down on a 30-year loan with a 5 percent interest rate, the total payment on the principal and interest will be \$1,036.07. If annual property taxes are \$3,500 and the annual insurance is \$1,500, the total monthly payment will be \$1,533.15. With a monthly payment of this amount, the total gross monthly income will need to be at least \$4,945.64 or roughly \$60,000/year in order to qualify for the loan.

Estimated front and back ratios help the homeowner to limit housing and necessary living expenses. *Front ratio* is a percentage of the gross income that the homeowner can spend on all housing-related expenses, including property taxes and insurance. *Back ratio* is a percentage of the gross income that the homeowner can spend on housing expenses plus the cost of food, clothes, gas, etc. The assumption is that the borrower's credit score is at least 580 (calculations are done using the mortgage calculator at www.mortgagecalculator.org).

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