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Abstract

When credit application experiences are examined, minority-owned small firms are not the discouraged borrowers that credit outcome studies generally suggest. This paper examines repeated application for credit by small firms. Univariate statistical analysis reveals that persistence is necessary but insufficient for minority firms to be successful credit applicants. At the same time, minority-owned firms overall were more likely than white-owned firms to make repeated attempts to obtain credit, though successful minority applicants actually required fewer applications than their white cohorts. Multivariate regression also finds that different firm, lender, banking relationship, and loan characteristics affect the continued search for credit by minority- and white-owned small firms.

Keywords: minority, small firms, credit search, discouraged borrower, persistence
JEL classification: G20, M13, M20

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Minority Small-Firm Credit Applicants: Does Persistence Pay?

I. Introduction

Do minority-owned small firms become discouraged after denial of credit from a financial institution? This study explores the credit search behavior of minority-owned firms in comparison to other firms. Minority-owned firms have become increasingly important to well-developed economies as well as emerging markets (Carney, 2007). Minority-owned firms comprised only 7 percent of all firms in the United States in 1982 but more than 15 percent of the 20.8 million firms by 1997 and 18 percent of the 23 million firms by 2002. Although government programs may be partially responsible, much of the growth accompanied the rise in the U.S. minority population, which was 30.9% of the total U.S. population in 1997. The trend indicates continued faster growth in the numbers of minority-owned small firms (Didia, 2008; Fairlie, 2004), particularly Hispanic-owned and Asian-owned ones.

Nearly a quarter of all U.S. firms had paid employees, while slightly more than 20 percent of minority-owned firms generated more than 4.7 million payroll jobs, many of them filled by minorities (U.S. Small Business Administration, 2007). The majority of these employer firms are small businesses, with a total employee size of less than 500, 21 employees on average for nonminority-owned firms and less than 10 for minority-owned firms in 2002. They contributed nearly $600 billion in revenues to the economy and offered a self-employment avenue for minority owners.[1]

However, an impediment to minority business ownership and performance relative to white-owned businesses (Fairlie and Robb, 2007) is still the lack of financing, particularly formal external finance (Eknanem, 1992). Only two-thirds of minority small firms used credit overall, with nearly 25 percent of minority small firms using bank credit (U.S. Small Business Administration, 2007). Although the incidence of bank credit has been diminishing, with trade credit as a substitute (Hussain and Matlay, 2007), bank credit remains the primary source of formal external finance to small firms and of overall credit in terms of volume of credit (Berger and Udell, 1998; Federal Reserve Board, 2002).

Studies suggest that discouraged minority-owned small firms do not even apply for formal credit because of expected denial (Kon and Storey, 2003; Coleman, 2004; Cavalluzzo et al., 2002). Such discouraged behavior may be rational self-selection (Han, Stuart, and Storey, 2009). Recent studies also confirm that such firms face greater difficulties in obtaining credit than do white-owned ones (e.g., Lussier, Greenberg, and Corman, 1998; Cavalluzzo and Cavalluzzo, 1998; Cavalluzzo, Cavalluzzo, and Wolken, 2002; Smallbone et al., 2003). The outcome-based measures used only indicate that minorities do not even apply or are rejected in greater proportion when they do apply. There is no measure of how they react to a credit application denial, i.e., whether they continue to seek credit or not.

This study addresses whether minority-owned firms are persistent in their efforts to obtain credit and how their efforts compare to those of their white counterparts. Persistence here is measured by the number of financial institutions applied to for credit before success in

[1] All figures are from the *Minorities in Business: A Demographic Review of Minority Business Ownership* 2007 report by the U.S. Small Business Administration (SBA), comparable to those in the SBA's *Minorities in Business 2001* report. Minority-owned firms here are those that are more than 51 percent owned in terms of ownership concentration by owners who are identified as a racial minority, while white-owned firms are those that are more than 51 percent owned in terms of ownership concentration by owners who are identified as not a racial minority.

obtaining credit or quitting the search. Among those who are ultimately successful, more persistence may indicate greater difficulties to become successful. Greater persistence among those who are continually unsuccessful may indicate their being less discouraged, not quitting the search for credit when denied.

The analysis indicates that proportionately more minority-owned firms than white-owned firms are persistent. To be successful, they cannot afford to be discouraged. Generally, successful firms are persistent. It also examines factors that may explain differences in credit application persistence among minority-owned firms and among white-owned firms.

The relevant literature is discussed in the following section. Section III describes the data set. Then Section IV describes the credit outcomes and credit application persistence. Section V presents the empirical estimation model with discussion of the variables, followed by the results in Section VI and concluding remarks in Section VII.

II. Relevant Literature

To date numerous studies have considered minority-owned small firms as discouraged borrowers that fear denial of credit and thus do not even apply (Coleman, 2002; Fraser, 2009). Other reasons for not applying include disinterest (Bond and Townsend, 1996) or sufficient alternative financing sources, including retained earnings or trade credit (Coleman, 2004). Other literature finds that minority firms that do apply for credit are more likely to experience denial of credit (Cavalluzzo and Cavalluzzo, 1998; Squires and O'Connor, 2001; Cohn and Coleman, 2001; Park and Coleman, 2009), to receive smaller amounts of credit (Bates, 1996; Lussier et al., 1998), and to face worse terms and conditions of credit (Blanchflower et al., 2003)[2].

Very few papers examine the continued search for credit due to the paucity of related panel data. In a qualitative study Buttner and Rosen (1992) consider the perceptions of male and female entrepreneurs in terms of strategies after denial of bank credit and find that they are rather similar in wanting to seek funding from another bank. Hanley and Crook (2005) find that the cost of repeat finance is higher than that for the first round of credit received by entrepreneurs in general. No study known by the author considers the minority-owned firms' actual behavior after denial. This paper considers the repeated credit applications by minority firms to determine whether such persistence results in success. Their experience is compared to white-owned small firms to determine if minority firms have to be more persistent in a search for credit.

III. Data

The data come from the 1995 National Federation of Independent Business (NFIB) survey of its member firms' financing experiences.[3] The available data set of 3,642 small firms offers firm-level observations of a random sample of its more than 600,000 members nationwide. The survey is unique particularly with regard to different aspects of relationships between borrowing firms and their financial institutions.

[2] Smallbone et al. (2003), however, find some convergence in these credit experiences between ethnic minority businesses and white-owned businesses in the United Kingdom and more variation among the ethnic minority businesses instead.

[3] The Federal Reserve's Survey of Small Business Finances (SSBF) data set is comparable in size to the NFIB, but along with other differences in survey coverage, the SSBF does not offer count data that is material to measuring persistence in terms of number of institutions applied to.

Firms of unidentifiable employee size, over 500 employees, or unspecified firm owner's race were excluded from the sample. Those with unknown credit application outcomes also were not included. Minority-owned businesses here refer to those small firms that are primarily owned by a racial minority owner/s in terms of ownership concentration, specifically 51 percent ownership. Alternative measures have recently been suggested to determine what constitutes a minority entrepreneur, including links to the ethnic community (Chaganti and Greene, 2002) and smaller ownership concentrations (Sonfield, 2005), though these are not official government measures or widespread in the research literature. The survey data set offers answers about the persistence of applicants seeking credit from financial institutions. Those with unknown credit application outcomes were not included either. The final working sample includes 3,113 firms, with 2,918 owned by whites, and 195 firms owned by minorities.

Full observations are not available for all minority-owned firms to warrant separate empirical analysis between different minority or gender subgroups. Also the data preclude a panel data set construct of serial credit experiences over time. However, these limitations do not affect the findings.

IV. Credit Outcomes and Application Persistence

The credit outcomes for firms in this study mirror those comparative results in previous studies. Discouraged borrowers are those not inclined to apply for credit from a financial institution due to fear of denial. Nearly nine percent of minority-owned firms did not apply for such credit. Since reasons are not specified, it cannot be determined how many were discouraged borrowers. However, the same proportion of white-owned firms also did not apply. Such firms generally sought credit from friends, relatives, other individuals, or other unspecified sources.

While more than 10 percent of the sample white-owned firms that did apply are unable to obtain credit, 20.5% of minority-owned firms are unsuccessful in their most recent credit search. Their self-reported difficulties are more striking, as 38.8% of minority-owned firms were unable to satisfy credit needs consistently, compared to only 24.7% of white-owned firms. These outcomes indicate that minority-owned firms face greater credit constraints.

The repeated credit application outcomes also somewhat confirm the findings about credit difficulties for minority-owned firms. Table 1 presents a statistical summary of credit application persistence by the small firms, which shows differences between ultimately successful and unsuccessful applicants. Among the successful credit applicants, 29.3% of minority-owned firms tried more than one institution before becoming successful, whereas only 19.9% of such white-owned firms had to exert such credit search efforts. Similarly, a higher percentage of successful minority-owned borrowers than white-owned borrowers had to go to more than two institutions. These group differences are significant and suggest that proportionately more minority borrowers had to be persistent in their credit search than their white counterparts, despite rather similar compositions of being incorporated and being of large asset size. Summary statistics from Table II indicate that minority firms were younger and were more likely to be female-owned.

However, the average number of tries by these successful minority-owned firms was consistently smaller than that of the successful white-owned firms (see Table I). This was true even when truncated means were considered to account for the outliers. This indicates that where ultimately successful small-firm borrowers faced difficulties, white-owned firms had to be more persistent in their credit applications than did minority-owned firms. This could be

explained in part by Table II summary statistics that indicate that white firms demanded larger loans, from smaller lenders, and did not enjoy increased competition among lenders.

The picture of persistence for unsuccessful firms is less nuanced. As many as 56.0% of ultimately unsuccessful white-owned firms tried repeated institutions before quitting (see Table I). Minority-owned firms were more likely to persist in their credit search, with 62.9% of them trying more than one institution before quitting. This finding was also true with respect to firms that applied to more than two institutions and more than three institutions for credit. The average number of tries by minority-owned firms was also greater than that of white-owned firms across different degrees of persistence. According to Table II, no significant differences in summary statistics were found between these minority and white-owned firms to suggest greater difficulties for minority applicants. Overall, minority borrowers are less easily discouraged than fear-of-denial studies suggest. Persistence itself does not necessarily lead to a successful application outcome however.

V. Empirical Analysis

The logit regression estimation equation is specified for two measures of persistence, with one measure indicating applicants who tried more than one institution ($i = 1$), meaning two or more, and the other measure indicating those who tried more than two institutions ($i = 2$), specifically three or more, as follows:

$$Y_i = \beta_{0i} + \Sigma\beta_{ij}X_{ij} + \varepsilon_i, \text{ where } i = 1, 2; j = 1, 2,..,10. \quad (1)$$

Y_i is the binary dependent variable corresponding to the respective measure of application persistence. X_{ij} is the jth control variable, among ten identified from the survey responses of small firms that represent characteristics of the firm, financial institution, and financing relationship, with constant β_0 and error term ε.

A. Variables

Table III provides a description of the variables, and Tables IV and V offer descriptive statistics. With the available data, differences in credit application persistence are assessed after controlling first for firm characteristics that affect the small firm's ability to obtain credit. *Being incorporated* offers the firm's credit history from public information (Blanchflower et al., 2003). *More years owned* indicates greater business experience of the owner and greater probability of survival that reduces the risk of default to the lender. Winker (1999) thus finds that firm age reduces the credit rationing probability for firms, as does size. *Greater asset value* indicates potentially greater collateralizable value in case of default (Cavalluzzo and Cavalluzzo, 1998). Reflecting better borrower creditworthiness, these factors are thus expected to reduce the number of tries necessary to obtain credit.

Next, among the financial institution characteristics, per-borrower lending limits imposed by the lender may leave the borrower with unfulfilled needs when a *larger loan* is requested (Lussier et al.,1998). Although a *larger financial institution* in terms of asset size is better able to accommodate a larger loan request, such a larger institution's lending focus may not necessarily be oriented toward small firms.[4] Coleman (2002) also considers the financial institution asset size with regard to small firm credit constraints, though with more of a focus on the financial institution than on the small firm. *Greater competition* among lenders reduces a

[4] In a theoretical study, Besci et al. (2005) also indicate that the bargaining ability of lenders and borrowers depends on the average funds available per lender.

small firm's probability of becoming a lender's captive (Sharpe, 1990) and increases alternative sources of credit access that make it easier to shop around. All these factors are likely to require or encourage borrower credit search persistence.

The third category of characteristics represents the financing relationship. Using a *larger number of banks* for financial services weakens the firm's financing relationship with its primary financial institution (Petersen and Rajan, 1994). This causes the credit process to become more purely transaction based and induces borrower persistence. Finally, the owners' conduct of *personal banking* with the firm's financial institution offers information value, though limited, about the firm's creditworthiness and requires less borrower persistence.

Ownership race is used as a dummy explanatory variable, as is *ownership gender*. To the extent that minority-owned firms and female-owned firms face greater credit difficulties, such firms will require a greater number of tries to obtain credit, though they may be discouraged from doing so.[5]

B. Descriptive Statistics

Minority-owned firms were somewhat less likely to be incorporated than white-owned firms and to be slightly smaller in asset size. Generally the two groups of firms used similar numbers of banks for their financial services. Otherwise, however, the differences between the two groups were statistically significant, as reported in Table IV. Minority-owned firms were younger with higher percentages of female-ownership. A larger percentage of the minority firms' owners conducted personal banking at the firm's bank. The minority-owned firms also demanded smaller loans, had larger primary lenders, and enjoyed greater lender competition. Minority-owned firms thus would not unequivocally need to be more persistent in their credit search than white-owned firms.

Minority-owned firms were not generally different from white-owned firms in applying for credit. Although white-owned firms requested larger loans on average, and proportionately more minority owners conducted personal banking at the firm's bank, these differences were not significant. Rather increased lender competition for minority-owned firms and a higher percentage of female owners distinguished the two groups of firms. See Table V for differences between groups of firms that tried 1 institution or not.

However, minority-owned firms that tried repeated financial institutions were quite different from white-owned firms that also tried repeated institutions (See Table V). Such minority-owned firms were more likely than white-owned firms to be unincorporated, younger, and have smaller asset values. At the same time, because they requested much smaller loans, did business with larger asset-sized financial institutions, and had owners that conducted personal banking at the firm's bank, there would be less need for credit search persistence by such minority-owned firms. Gender was not a distinguishing factor between these more persistent groups of firms.

VI. Results

Table VI presents the multivariate regression results. Results for all firms indicate the pooled regression results. The predictive accuracy of the regression estimation was 77.0 percent.

[5] Because no significant difference was found in number of tries between minority females and minority males or between white females and white males, an interaction term minority owner*female owner was not deemed to be appropriate here.

The estimation model's accuracy measures where the model correctly predicted that numerous financial institutions would likely be applied to and actually were applied to for credit, or where it predicted that only one institution would likely be applied to and actually was applied to in the credit search by the small firm. This suggests that the model is better than chance at determining the likelihood of credit search persistence.

Race of the owner is significant in affecting credit search persistence, by increasing the probability of the firm's trying, applying to more than one financial institution for credit. The results are similar for firms primarily owned by females. As expected, being incorporated, years of business ownership, and a firm's large asset size each reduce persistence, while the size of the loan requested, and the number of bank relationships increase persistence. Although a larger lender will have greater capacity to meet loan requests and thus reduce a firm's credit search efforts, its loan portfolio may be oriented away from small-firm lending and increase a small firm's need to make credit applications to numerous institutions. Contrary to conventional expectation, personal banking by the firm's owners actually increases persistence, though this result is not significant. Such banking may not be beneficial to obtaining credit if it is compulsory and not associated with the firm's actual creditworthiness.

These results are otherwise robust to a greater degree of persistence, where firms tried more than two institutions, i.e., applied to three or more institutions for credit. Lender competition and female ownership become significant in increasing credit search persistence. Race remains a significant factor in positively affecting credit search persistence. Thus, separate regressions are conducted to understand variation among white-owned firms and among minority-owned firms.

Table VI also presents the regression estimates for white-owned firms. The predictive accuracy of the model increases to 90.0 percent. Since this group represents 93% of the total sample, the test results are similar to all firms. Specifically, most of those significant variables remain unchanged, including borrower's asset size, requested loan size, number of relationship banks, and gender. However, for white-owned firms, years owned and lender asset size no longer matter, while personal banking emerges as somewhat significant in increasing borrower persistence. Such banking may not beneficial to obtaining credit if it is compulsory and not correlated with the firm's actual creditworthiness. The results for firms which tried more than two financial institutions for credit are almost identical, in terms of significant variables.

Table VI also presents the regression results for minority-owned firms. The predictive accuracy of the estimation model remains above 75 percent. Quite different from the results of white owned firms, the only variables significant are years of ownership and the firm's large asset size. They are direct indices of ability to repay credit and thus reduce the need for borrower persistence as expected. Results for those minority-owned firms that tried more than two financial institutions are similar. A small firm's larger asset size remains significant, while lender competition emerges as significant in increasing the probability of credit search persistence. The ability to seek alternate lenders increases the likelihood of applying to numerous institutions.

VII. Conclusions

In conclusion, differences in credit application persistence between minority- and white-owned firms are significant. As a group minority-owned firms require more credit search efforts than white-owned firms. This result further underscores the difficulty of such firms in obtaining

formal financing. However, when only successful borrowers are considered, minority-owned firm require less effort than white-owned ones. Although not as statistically significant, even with continued denial, minority firms are also more persistent than white-owned firms. This result suggests that minority firms that do apply are not easily discouraged and should not be.

Thus, minority ownership is a significant explanatory factor in the persistence of all the small firms. According to the multivariate regression results, relatively different significant factors affect credit application persistence for white-owned and minority-owned firms. Overall, incorporated, older white-owned firms with larger asset values are less likely to apply to more than one institution, while those having relationships with more banks are more persistent, as are those requesting larger loans and those owned by females. Personal banking by the owners does not appear to benefit these white-owned firms. For minority-owned firms, age is more beneficial to obtaining credit, as is a larger asset size. Both factors thus reduce these firms' need to persist in obtaining credit. However, lender competition uniquely only affects the likelihood of minority-owned firms' persistence.

The findings indicate that only looking at the nonparticipation of discouraged borrowers in the credit market and a single credit application outcome will lead to incomplete and misleading conclusions by policymakers and researchers about minority-owned firms' experience with external finance from financial institutions. Although these firms are more likely to be discouraged from participating in the credit market, they are not discouraged from continuing to participate in the market once they do so. The results also indicate that comparing minority-owned firms to white-owned firms requires assessment of differences among minority-owned firms themselves. Minority-owned firms that do apply for credit are not the same as those that do not apply for fear of denial. Furthermore, firms that are persistent in their credit search are distinguishable from those that only apply once. Future research might consider additional subsets of the minority-owned firms to compare the 5.8% of firms majority owned by Hispanics, 4.4% by Asian-Americans, 4.0% by African Americans, and the 0.9% by American Indians in the United States for example.[6] As panel data sets become available, an additional extension should consider if credit search persistence is necessary and worthwhile over the small firm's lifecycle to reconcile the viability and performance differences between minority-owned and white-owned small firms.

[6] Note of course that these subsets themselves do not list further subdivisions by ethnic grouping.

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Table I

Credit search persistence

Successful firms

No. of institutions applied to	All firms (A)	White firms (W)	Minority firms (M)	Between group equality tests (W↔M)
Tried 1	79.6%	80.1%	70.7%	0.133
More than 1	20.4%	19.9%	29.3%	6.302**
Median no. of tries	2	2	2	0.589
Mean no. of tries	3.3(6.605)	3.3(6.880)	2.8(1.063)	134731.5***
Tried 2	12.2%	12.0%	15.0%	0.801
More than 2	8.2%	7.9%	14.3%	6.025**
Median no. of tries	3	3	3	0.343
Mean no. of tries	5.1(10.139)	5.3(10.657)	3.6(1.017)	139213.0***
Tried 3	4.9%	4.6%	9.0%	4.394**
More than 3	3.4%	3.3%	5.3%	0.987
Median no. of tries	4	4	4	0.627
Mean no. of tries	8.2(15.382)	8.5(16.067)	4.6(1.134)	145785.5
N (those which tried)	2370	2237	133	

Unsuccessful firms

No. of institutions applied to	All firms (A)	White firms (W)	Minority firms (M)	Between group equality tests (W↔M)
Tried 1	43.3%	44.0%	37.1%	0.041
More than 1	56.7%	56.0%	62.9%	0.352
Median no. of tries	3	2	3	0.481
Mean no. of tries	2.9(1.316)	2.9(1.277)	3.2(1.571)	4628.500
Tried 2	27.9%	28.2%	25.7%	0.011
More than 2	28.8%	27.8%	37.1%	0.905
Median no. of tries	3	3	3	0.453
Mean no. of tries	3.8(1.344)	3.8(1.313)	4.1(1.553)	4506.500
Tried 3	17.2%	16.9%	20.0%	0.049
More than 3	11.6%	10.9%	17.1%	0.649
Median no. of tries	4	4	5	0.429
Mean no. of tries	5.0(1.453)	4.9(4.936)	5.3(1.506)	4660.500
N (those which tried)	319	284	35	

Note: Standard deviation in parentheses.
Chi-squared test conducted for equality between group proportions.
Kolmogorov-Smirnov test conducted for equality between group medians.
Mann-Whitney U test conducted for equality between group means.
Differences were significant at the 1% level***, at the 5% level**, and at the 10% level*.

Table II

Descriptive Statistics for *Successful* credit applicant firms and *Unsuccessful* credit applicant firms

Explanatory variables	**All successful firms**	**White firms**	**Minority firms**	Equality Tests
Incorporated	64.9%	64.9%	63.4%	0.091
Years owned	16.2 (13.026)	16.3 (13.073)	14.4 (12.125)	1.474**[KS]
Large asset value	57.3%	57.3%	57.8%	0.001
Loan size request	445,283 (4392856.01)	462,976 (4518916.93)	147,697 (563338.188)	173619.500*
Lender asset size	6,956,000,000 (17790000000)	6,886,000,000 (18140000000)	8,021,000,000 (11440000000)	1.369**[KS]
Lender competition	40.0%	39.6%	46.7%	2.740*
Number of banks	1.4 (0.754)	1.4 (0.742)	1.5 (0.930)	195137.000
Personal banking	68.2%	67.8%	75.5%	3.584*
Female owner	9.8%	9.2%	20.8%	20.795***
Minority owner	5.6%			

Explanatory variables	**All unsuccessful firms**	**White firms**	**Minority firms**	Equality Tests
Incorporated	59.9%	60.2%	57.5%	0.024
Years owned	13.0 (12.616)	13.3 (13.002)	10.9 (8.921)	5601.500
Large asset value	38.1%	39.9%	25.0%	2.695
Loan size request	412,493 (5293853.36)	454,151 (5623418.63)	88,600 (151380.790)	5192.000
Lender asset size	12,340,000,000 (28720000000)	11,900,000,000 (28510000000)	15,810,000,000 (30690000000)	1840.000
Lender competition	37.9%	37.1%	44.4%	0.454
Number of banks	1.4 (0.740)	1.4 (0.765)	1.2 (0.474)	5242.000
Personal banking	64.0%	63.2%	70.3%	0.439
Female owner	14.8%	14.5%	17.5%	0.074
Minority owner	11.4%			

Note: Standard deviation in parentheses.
Chi-squared test conducted for equality between group proportions.
Mann-Whitney U test conducted for equality between group means.
[KS]Kolmogorov-Smirnov test statistic where Mann-Whitney U test was not applicable.

Differences were significant at the 1% level***, at the 5% level**, and at the 10% level.

Table III

Description of variables

Variables	Coded	Definition
Dependent Variables		
Tried more than one financial institution	Dummy tried=1, not=0	applied to more than one financial institution before successful or stopped trying
Tried more than two financial institutions	Dummy tried=1, not=0	applied to more than two institutions before successful or stopped trying
Explanatory Variables		
Incorporated	Dummy yes=1, not=1	legal form of business is corporation
Years owned	Scale years	how long current owner owned this business
Large asset value	Dummy yes=1, not=0	total asset value of firm at end of last fiscal year $200,000 or more
Loan size request	Scale dollars	loan amount requested
Lender asset size	Scale dollars	how large firm's principal financial institution is in terms of its assets
Lender competition	Dummy yes=1, not=0	more competition for firm's business among financial institutions from before
Number of banks	Scale whole numbers	how many banks firm uses to obtain its financial services
Personal banking	Dummy yes=1, not=0	does the owner/s conduct personal banking at the firm's principal bank
Female owner	Dummy yes=1, not=0	principal owner/s of business female
Minority owner	Dummy yes=1, not=0	principal owner/s of business African American, Hispanic American, or other minority

Table IV

Descriptive Statistics for the sample

Explanatory variables	All firms	White firms	Minority firms	Equality Tests
Incorporated	64.3%	64.4%	62.2%	0.577
Years owned	15.8 (13.018)	16.0 (13.096)	13.7 (11.608)	1.449**[KS]
Large asset value	55.2%	55.5%	50.8%	1.380
Loan size request	$441,586 (4502518.89)	462,035 (4648022.99)	135,574 (507046.520)	242995.000**
Lender asset size	$7,610,000,000 (19520000000)	7,465,000,000 (19670000000)	9,605,000,000 (17290000000)	1.695***[KS]
Lender competition	39.8%	39.3%	46.3%	3.273*
Number of banks	1.4 (0.752)	1.4 (0.745)	1.4 (0.864)	275596.000
Personal banking	67.7%	67.3%	74.5%	3.846**
Female owner	10.4%	9.7%	20.1%	19.873***
Minority owner	6.3%			
N observations	3113	2918	195	

Note: Standard deviation in parentheses.
Chi-squared test conducted for equality between group proportions.
Mann-Whitney U test conducted for equality between group means.
[KS]Kolmogorov-Smirnov test statistic where Mann-Whitney U test was not applicable.
Differences were significant at the 1% level***, at the 5% level**, and at the 10% level*.

Table V

Descriptive Statistics for firms that tried (applied to) 1 financial institution and tried (applied to) more than 1

Explanatory Variables	All firms tried 1	White firms	Minority firms	Equality Tests
Incorporated	65.5%	65.2%	72.0%	1.771
Years owned	16.4 (13.021)	16.4 (12.999)	16.3 (13.463)	102074.000
Large asset value	57.0%	56.6%	63.7%	1.714
Loan size request	288,550 (3069009.73)	294,286 (3149475.13)	185,766 (682266.367)	96590.500
Lender asset size	6,834,000,000 (115910000000)	6,826,000,000 (16210000000)	6,962,000,000 (9838000000)	31332.500
Lender competition	40.1%	39.5%	51.0%	4.934**
Number of banks	1.4 (0.721)	1.4 (0.718)	1.4 (0.777)	99758.000
Personal banking	69.5%	69.3%	72.8%	0.415
Female owner	9.3%	8.7%	19.6%	13.010***
Minority owner	5.3%			

Explanatory Variables	All firms tried>1	White firms	Minority firms	Equality Tests
Incorporated	63.0%	64.4%	48.3%	5.386**
Years owned	13.9 (12.823)	14.3 (13.185)	9.9 (7.414)	1.336*[KS]
Large asset value	49.8%	52.1%	27.1%	12.368***
Loan size request	912,711 (7272486.72)	997,629 (7626221.79)	71,885 (117129.003)	1.942***[KS]
Lender asset size	10,780,000,000 (28900000000)	10,490,000,000 (29150000000)	13,610,000,000 (26550000000)	1.398**[KS]
Lender competition	40.3%	40.5%	37.9%	0.061
Number of banks	1.5 (0.845)	1.6 (0.816)	1.5 (1.104)	16497.500
Personal banking	60.4%	58.6%	78.0%	7.615***
Female owner	11.7%	11.1%	18.3%	2.106
Minority owner	9.2%			

Note: Standard deviation in parentheses.
Chi-squared test conducted for equality between group proportions.
Mann-Whitney U test conducted for equality between group means.
[KS]Kolmogorov-Smirnov test statistic where Mann-Whitney U test was not applicable.

Differences were significant at the 1% level***, at the 5% level**, and at the 10% level*.

Table VI

Logit regression results

Dependent variable Tried>1=tried (applied to) more than one financial institution (or not) in credit search
Dependent variable Tried>2=tried (applied to) more than two financial institutions (or not) in credit search

		All firms		White firms		Minority firms	
Explanatory variables	Expected sign	Tried >1	Tried >2	Tried >1	Tried >2	Tried >1	Tried >2
Constant		–5.575***	–6.594***	–6.612***	–6.783***	–4.125	–9.713***
		(54.084)	(43.416)	(64.840)	(45.326)	(2.213)	(6.856)
Incorporated	–	0.246*	–0.013	0.206	–0.055	0.763	0.198
(yes=1)		(2.832)	(0.004)	(1.788)	(0.063)	(1.976)	(0.087)
Years owned	–	-0.014**	–0.012	–0.011*	-0.009	–0.041	–0.052
		(5.524)	(2.162)	(3.526)	(1.139)	(1.948)	(1.718)
Large asset value	–	0.645***	0.603***	0.584***	0.541**	1.151**	1.010
(yes=1)		(17.686)	(8.028)	(13.190)	(5.817)	(4.269)	(1.897)
Log loan size request	+	0.330***	0.369***	0.349***	0.370***	0.081	0.350
		(49.655)	(38.685)	(50.253)	(35.347)	(0.194)	(2.567)
Log lender asset size	±	0.048	0.031	0.038	0.012	0.106	0.208
		(2.449)	(0.524)	(1.390)	(0.074)	(0.869)	(2.023)
Lender competition	+	0.085	0.393**	0.052	0.321	0.641	1.268*
(yes=1)		(0.382)	(3.943)	(0.130)	(2.386)	(1.438)	(2.809)
Number of banks	+	0.395***	0.372***	0.388***	0.361***	0.370	0.431
		(20.011)	(11.890)	(16.125)	(8.704)	(2.233)	(2.670)
Personal banking	–	0.320**	0.201	0.397***	0.225	–0.711	0.190
(yes=1)		(5.367)	(1.106)	(7.712)	(1.277)	(1.137)	(0.055)
Female owner	+	- 0.213	-0.579**	-0.308	-0.698***	0.182	-0.272
(yes=1)		(1.117)	(5.168)	(2.060)	(6.644)	(0.090)	(0.123)
Minority owner	+	-0.616***	-0.599**				
(yes=1)		(6.595)	(3.843)				
Model χ^2		109.708***	70.500***	99.086***	59.351***	22.005***	14.311
Log-likelihood		1387.365	833.298	1270.733	754.827	71.183	71.083
N		1350	1350	1257	1257	93	93

Note: Wald test statistic values are in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% significance levels, respectively.