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DISCRIMINATION AGAINST WOMEN IN FORMAL CREDIT MARKETS: REALITY OR RHETORIC?

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Abstract

Microenterprises receive several forms of aid; however, many are denied access to formal finance. It is often argued that women entrepreneurs are frequently discriminated against in formal credit markets, but these arguments are often based on rhetoric and advocacy rather than rigorous analysis. In this study, the results of a multinomial logit model show that although a smaller total number of women than men entrepreneurs applied for loans, women entrepreneurs represent a higher proportion of applicants. Interestingly, the small probabilities of both male and female entrepreneurs being quantity rationed implies that this form of credit rationing is not widely exercised in special microenterprise programs in Ecuador.

DISCRIMINATION AGAINST WOMEN IN FORMAL CREDIT MARKETS: REALITY OR RHETORIC?[1]

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1. INTRODUCTION

Microenterprises are an important source of livelihood for many people in developing countries. A large literature discusses the development of micro and small scale businesses and the most appropriate ways to assist them (Levitsky; Liedholm and Mead; Meyer; Steel and Webster; Webster). Access to financial services, and especially to loans, is often identified as one of the most important constraints reported by microentrepreneurs when initiating or expanding their businesses (Levitsky; Liedholm and Mead; Meyer). Microentrepreneurs are widely perceived to be rationed in credit markets because formal financial institutions prefer to work with larger and less risky customers (Chang *et al.*; Little *et al.*).

It is often argued that women represent one group of persons frequently discriminated against in formal credit markets in developing countries (Buvinic *et al.*; Due and Summary; FAO; Lycette; McKee; Otero and Downing). In her assessment of credit as the missing piece in microenterprise development, McKee emphasized the gender based credit constraints which exacerbated the problems women face when operating microenterprises. Otero and Downing concluded: "The formal financial system, for the most part, has been

[1] We acknowledge with appreciation the work of John Magill and his colleagues at DAI and INSOTEC in collecting and permitting us to use the primary data on which this study is based.

unable to respond to women's financial needs." (1989: 5). They argue that some of the major factors that limit women's participation are: "...related to institutional requirements, others to cultural and social norms, and still others to the type of productive activities in which women predominate. (1989:5)." Buvinic et al. discuss that there are: "...two major factors which restrict women's access to formal credit more than men's. These are related to women's lack of control over economic resources and the nature of their economic activity. (1979:9)." Due and Summary summarize that: "It is well known that Africans (both male and female) have not been able to obtain capital from the formal sources for agricultural inputs. (1979:15)."

A FAO study on the promotion of women's activities in marketing and credit explored whether or not banks view women as bankable. Banks with limited experience in working with women may perceive that female entrepreneurs do not represent the best customers to make profits and reduce costs, but some banks are adjusting their practices to reach more women. The study reveals that from the women's point of view, the majority of banks in developing countries are not satisfactory sources of finance for a number of reasons. These reasons include the time involved to process loan applications, inconvenient bank working hours, requirements for guarantors and the high margin charged on loans. However, the reasons presented in the study are not only pertinent to women but to many poor people in developing countries. In another attempt to evaluate women's access to credit, Lycette concluded in her study that there is little direct evidence of women's limited access to credit. The author argues that it is hard to carefully analyze the problem because

many formal financial institutions do not keep records of financial transactions by gender since women are such a small proportion of their clients.

The perception that formal financial institutions discriminate against women is also pervasive in developed countries. A large literature treats the issue of bank discrimination against female business owners in western countries, but the measurement of discrimination is largely based on subjective perceptions and lacks statistical evidence (Hisrich and Brush; Kryzanowski and Bertin-Boussu; Stevenson).

The evidence presented in the literature that purports to show limited access to credit by women is often interpreted too easily as a loan supply side problem; rarely is any thought given to the possibility that borrowing patterns may also be explained by a lack of loan demand by female entrepreneurs. The arguments presented regarding women's access to credit are often based on rhetoric and advocacy rather than on rigorous analysis. A recent exception is a study which analyzed sex differences in acquiring access to a Peruvian development fund (Buvinic and Berger). The empirical data presented imply that the reason few women participated in the program was due more to the fact that there were few women applicants rather than to a more frequent rejection of women applicants than men. The study concluded that there did not appear to be outright lender discrimination against female borrowers in Peru.

The present study aims to separate rhetoric from reality by carefully investigating the issue of discrimination against women in Ecuadorian credit markets. This analysis is conducted by, first, exploring the distribution of applicants and non-applicants for formal credit among men and women microentrepreneurs and, second, measuring the degree of success

they have in obtaining the size of loan requested. An econometric model is tested to examine the distribution of loan applications and explore if discrimination, in the form of rejecting or rationing female entrepreneurs, exists in the observed patterns of loan allocation.

The paper is presented in six sections. The next section discusses the credit rationing phenomenon. The following section describes microenterprises in Ecuador and the survey which provided the data used in this study. The fourth section describes the model used for explaining microentrepreneurial borrowing behavior and the incidence and intensity of credit rationing employed by formal lenders. The results and implications are discussed in section five, and the last section presents the conclusions of the study.

2. CREDIT RATIONING

Credit rationing can be interpreted as a form of discrimination against particular types and classes of borrowers that occurs as a result of asymmetric information problems that lenders confront when they are unable to distinguish creditworthy from non-creditworthy customers (Bester; Jaffee and Russell; Stiglitz and Weiss). A lack of understanding of this problem has led many critics to unfairly blame formal lenders for arbitrarily discriminating against certain classes of borrowers such as small business men and women.

The problem is that lenders face problems of asymmetric information when trying to sort loan applicants. Financial contracts involve default risk because of adverse selection and moral hazard problems associated with the borrower's indeterminate type and unpredictable action (Stiglitz and Weiss). Even in the absence of interest rate ceilings,

imperfect information generates an equilibrium in credit markets where interest rates are inadequate to clear the market demand for loans(Bester, Jaffee and Russell). To resolve asymmetric information problems and to identify creditworthy borrowers, lenders utilize non-price mechanisms to ration loans based upon the attributes of the entrepreneurs and the characteristics of enterprises (Aguilera and Graham; Lapar and Graham). A complete analysis of possible discrimination in a credit market requires analyzing both internal self-selection and external credit rationing to determine if the distribution of borrowers and the amount borrowed differs among different subsets of loan applicants. The fact that one class of customers obtains more or less loans than another can be attributed to simple discrimination or to more complex issues of credit rationing.

Internal self-selection occurs when a group of potential loan applicants self-select themselves and decide to not even apply for a loan. Two reasons may explain this behavior. One implies that the decision is based on true self-selection where potential applicants do not apply because they do not have a true demand for external finance although they may report a "need" for credit when asked. The second reason implies that the decision is a result of induced self-selection where potential applicants do not apply for loans because they perceive they will be rejected.

Self-selection based on the belief that loan applications will be rejected may reflect a correct assessment because these applicants do not possess the attributes (income, collateral, etc.) required by lenders. These attributes signify barriers to access to formal credit markets for some potential applicants. Alternatively, these potential applicants may have incorrectly concluded that their applications would have been rejected when in fact

they would have been approved. While internal self-selection cannot be easily quantified, it probably explains the behavior of many women, small farmers, microentrepreneurs and poor people who rely heavily on the informal sector for their financial services.

On the other hand, there are two types of external credit rationing - loan-quantity and loan-size rationing - that exist when suppliers decide to allocate loans selectively in credit markets. Loan-quantity rationing occurs when lenders grant loans to a group of applicants who are identified as creditworthy borrowers, while rejecting another group as non-creditworthy. Loan-size rationing occurs when some borrowers receive loans in amounts at least as large as demanded, while others receive amounts less than demanded (Aguilera).

To test for discrimination, therefore, it is first an issue of examining whether women face more barriers than men to entering credit markets and, therefore, are largely concentrated in the non-applicants group. Second, if discrimination occurs it is important to determine if women who apply for loans are more quantity or size rationed than their male counterparts.

This paper analyzes internal self-selection, loan-quantity and loan-size rationing in a sample of microentrepreneurs in Ecuador. This survey was not designed to reveal the reasons explaining internal self-selection; however, the data allow us to examine the significant variables associated with the likelihood of the entrepreneurs to exercise self-selection or to be rationed.

3. THE MICROENTERPRISE SURVEY

Although the data are sketchy, the importance of microenterprises appear to have increased in Ecuador in recent years. A sharp decline in the 1980s in the share of labor income contributed to the increased prevalence of self-employed workers and microenterprises (Chang, et al.). An assessment of microenterprises found that they play a key role in generating urban employment. Chang et al. reported that the microenterprise sector accounts for about two-thirds of the labor employed in the private sector; however, many microenterprises face both credit and technical assistance constraints.

The analysis reported in this paper is based on a 1990 survey of micro and small scale enterprises in Ecuador. Data were obtained from in-depth interviews with 625 randomly selected entrepreneurs. A total of 601 entrepreneurs reported a complete set of information that could be used in this analysis. The sample is composed of two groups: 447 randomly selected beneficiaries of microenterprise programs and 154 non-beneficiaries or control entrepreneurs who were identified by the sampled beneficiaries as being similar types of entrepreneurs. The beneficiaries represent individuals who received assistance - credit, training or technical assistance - from a formal institutional program designed to provide services to micro and small enterprises (Magill *et al.*). The gender composition of both the beneficiary and control groups was identical, about 65 percent males and 35 percent females.

Almost 99 percent of the respondents stated that they needed credit at the time of the survey in August 1990, but many had not requested loans from formal institutions during the year prior to the survey. Table 1 presents a classification of both the beneficiary and control entrepreneurs into 4 categories of applicant-borrowers. Category (1) includes

entrepreneurs subject to internal self-selection because they did not apply for formal loans even though they reported a need for credit; category (2) includes the quantity rationed group of applicants who applied for but were denied loans from formal institutions; category (3) includes the loan size rationed subgroup of unsatisfied borrowers who were granted loans smaller than the amounts demanded; and category (4) includes satisfied borrowers who were granted loans in amounts at least as large as demanded.

The frequencies reported in Table 1 show large differences between the beneficiary and control groups in all four categories of respondents. Most members of the control group did not even apply for a loan, while only one-third of the beneficiaries did not apply. Participation in a microenterprise program, therefore, is clearly related to applying for a loan. This is an expected conclusion since many microenterprise programs exist in part to help microentrepreneurs learn how to complete loan applications and overcome barriers to access to formal credit markets.

It was found that the beneficiary and control subgroups have approximately equal percentages of male and female participants in each of the four categories of applicant-borrowers. Thus, interestingly, there exist differences between the beneficiary and control groups, particularly concerning self-selection; however, there are no gender differences between the two groups and among the four categories.

The sample is composed mostly of enterprises (83 percent) with five or less employees. They are divided almost equally between businesses located in the Sierra and the Coastal regions of the country. The majority of the respondents (93 percent) admitted to being risk-takers. A large subgroup of the sample (84 percent) were customers of a

formal financial institution as holders of checking or deposit accounts. The majority of microentrepreneurs were concentrated in production (40 percent), services (28 percent), commerce (23 percent), and only 7 percent in agriculture. Most of the entrepreneurs (79 percent) established their own privately owned microenterprises, and about 67 percent had received training from a support institution. They are mostly heads of their families (64 percent), and about 59 percent are high school graduates.

4. THE MULTINOMIAL LOGIT MODEL

A multinomial logit model was developed to assess the importance of factors hypothesized to explain the distribution of microentrepreneurs among the four categories of respondents described above. This model permits the use of a categorical dependent variable. It is an extension of the traditional linear logit model that determines the probability of a particular event when faced with just two alternatives (Theil). In the multinomial logit case, there are a number of alternatives (N) that generate N probabilities. The objectives for using this econometric technique were twofold. The first was to test the relationships between the probabilities and the several hypothesized continuous and discrete determining factors. The second was to use the estimated coefficients to generate the probabilities of the microentrepreneurs falling into one of the four categories.

The model tested consists of four probabilities, P_j ($j=1,...,4$), associated with the four categories of microentrepreneurs. The probability of being a non-applicant is P_1, the probability of being loan-quantity rationed is P_2, the probability of being loan-size rationed

is P_3, and the probability of being a satisfied borrower is P_4. The maximum likelihood technique, discussed by Maddala, was used to estimate the following equations:

$$\log_e\left(\frac{P_j}{P_1}\right)_i = \alpha_j + \beta_{jk}X_{ki} + \mu_{ji}$$

where:

j	=	2,3,4 categories;
i	=	1,...,n observations;
α	=	intercept;
β	=	coefficients;
X_k	=	1,...,m explanatory variables;
μ	=	error terms.

The estimation procedure generates the coefficients of the probabilities of an observation falling into category 2,3 and 4 with respect to category 1. Alternative comparisons of other probabilities with different bases can be derived from:

$$\log_e\left(\frac{P_j}{P_h}\right)_i = \log_e\left(\frac{P_j}{P_1}\right)_i - \log_e\left(\frac{P_h}{P_1}\right)_i$$

where j=3,4, and h=2,3, with j not equal to h simultaneously, and by using:

$$\log_e\left(\frac{P_j}{P_h}\right)_i = (\alpha_j - \alpha_h) + (\beta_{jk} - \beta_{hk})X_{ki}$$

The first set of estimated coefficients with respect to category 1 can be used to calculate the probabilities of microentrepreneurs being in each of the four categories of applicants-borrowers.

The distribution of enterprises among the four categories of respondents is hypothesized to be explained by the two types of factors listed in Table 2. The first type refers to characteristics of the enterprise which include: size of business proxied by the value of business assets (ASST); ownership structure of owner (OWNR) versus non-owner of the enterprise; establishing a new business (NWBS) versus operating an existing one; economic sector of operation being production (PRDC), commerce (CMRC), services (SRVC) or agriculture (AGRC); and region where the enterprise is located, (SIERRA) versus the coast. The second set of factors refers to the attributes of the entrepreneur which include: being a customer with a formal financial institution (CSTMR) by holding a deposit or checking account versus a non-customer; number of years operating the enterprise (YRS); reported type of entrepreneur being either a risk taker (RSKY) or risk averse; recipient of training (TRN) from a microenterprise project; age of the entrepreneur (AGE); high school graduate (EDUC) or not; head of the family (HOF) or not; sex of the entrepreneur (MALE) or female. If women included in the sample are discriminated against in formal credit markets, it is expected that the coefficient for (MALE) would be significant and positive when assessing the probability of being borrowers in either category 3 or 4 with respect to being non-applicants, i.e. in category 1, or with respect to being rejected applicants in category 2. Also, the coefficient for male would be positive and significant when assessing the probability of being a satisfied borrower versus being a loan-size rationed borrower.

5. RESULTS AND IMPLICATIONS

The econometric results presented in Table 3 were generated utilizing maximum likelihood estimation and additional transformations using Suit's dummy variable interpretation technique. The results are subject to the limitations of the survey which gathered information only with respect to the year of 1989 and, thus, may not capture the long term borrowing behavior of these entrepreneurs. The coefficients of the probabilities of the respondents being quantity rationed, size rationed and satisfied borrowers are estimated with respect to being non-applicants. A positive coefficient implies that the probability of a respondent falling in the numerator category (quantity or size rationed or satisfied borrowers) is greater than the probability of falling in the denominator category (non-applicant, quantity or size rationed borrower). For example, a positive coefficient for a variable in the first column implies that the respondent is more likely to be a quantity rationed applicant than a non-applicant. Conversely, a negative coefficient implies that the respondent is less likely to be a quantity rationed applicant than a non-applicant.

Among the factors reflecting the importance of different enterprise characteristics in explaining credit behavior, owners (OWNR) of micro and small scale enterprises are more likely to be non-applicants than satisfied borrowers and are more likely to be quantity rationed than loan-size rationed borrowers. This finding implies that owners are more likely to self-finance their activities than to apply for or have access to loans. Microentrepreneurs who have established new businesses (NWBS) have a higher probability of being non-applicants than being loan-size rationed borrowers. This result also implies that new businesses are more likely to be self financed than to draw on external finance. The

sectoral classification of the enterprise in production, commerce and services does not seem to have a significant impact on microentrepreneurial borrowing behavior. Only those microentrepreneurs with enterprises in agriculture have a higher probability of being quantity rationed applicants than being non-applicants. Entrepreneurs located in the coastal region are more likely to be non-applicants than loan-size rationed borrowers.

Among the factors reflecting the importance of the entrepreneurial attributes, the coefficient for (CSTMR) implies that clients holding checking or deposit accounts with financial institutions are more likely to be among the satisfied borrowers category than be among the non-applicants, quantity rationed or size rationed borrowers. This result is expected because bank customers reduce a considerable amount of the asymmetric information problems and consequent costs that lenders face when dealing with unfamiliar applicants.

Experience of the entrepreneurs (YRS) implies that the more experienced entrepreneurs are more likely to be non-applicants or loan-size rationed borrowers than quantity rationed borrowers. As expected, risky applicants (RSKY) have a higher probability of being in the quantity rationed category than in being non-applicants or loan-size rationed category. Entrepreneurs who have received training (TRN) from a microenterprise program are more likely to be quantity rationed, loan-size rationed or satisfied borrowers than to be non-applicants. This may reflect a means to overcome the self selection decision because many entrepreneurs enter training programs precisely to learn how to apply for a loan. Age of the entrepreneurs does not seem to have a significant impact on microentrepreneurial borrowing behavior.

Surprisingly, educated microentrepreneurs (EDUC) have a higher probability of being loan-size rationed borrowers than being non-applicants, quantity rationed or satisfied borrowers. At the same time, educated microentrepreneurs are more likely to be non-applicants than satisfied borrowers. Microentrepreneurs who are heads of families (HOF) have a higher probability of being loan-size rationed borrowers than being non-applicants, quantity rationed or satisfied borrowers.

The coefficient for gender implies that male entrepreneurs have a higher probability of being non-applicants or quantity rationed borrowers than being size rationed borrowers. Female entrepreneurs, on the other hand, are more likely to be loan-size rationed borrowers than to be non-applicants or quantity rationed borrowers. These findings imply that discrimination against female applicants does not occur in the form of loan-quantity rationing but may occur in loan-size rationing.

The multinomial logit model allows for the estimation of the probabilities of an observation being in each category of applicant-borrowers. This procedure involves using the estimated coefficients of the model for typical[2] male and female microentrepreneurs to generate the probabilities for each type of entrepreneur. Gender and sector of operation are factors of particular importance that are often discussed concerning discrimination in credit markets. Table 4 presents the probabilities of an entrepreneur falling into one of the

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[2] A "typical" microentrepreneur is assumed to be a risky owner of a newly established enterprise located in the Coastal region, who has received training, graduated from high school, is a customer with a financial institution and is the head of the family. This microentrepreneur is assigned to have the averages of 3836360 sucres worth of total assets (approximately 900 sucres = 1 US $), 6 years of experience in running the business, and 37 years of age.

four categories for a typical male or female microentrepreneur operating in one of the four classified sectors.

The findings indicate, first, that the largest probabilities for all types of entrepreneurs regardless of gender or sector are those in the non-applicants category followed by the loan size rationed borrowers. Second, there are small probabilities for the typical entrepreneurs to be satisfied borrowers and even smaller probabilities for being quantity rationed borrowers.

A comparison made between the male and female probabilities using the Wilcoxon test indicates interesting observations (Siegel and Castellan). On the one hand, the typical female entrepreneurs have significantly lower probabilities for being non-applicants than male entrepreneurs ($p<0.05$). This implies greater self-selection by male than female entrepreneurs. On the other hand, the typical female entrepreneurs have significantly higher probabilities than males for being loan-size rationed borrowers ($p<0.05$). Gender seems to have no significant impact on the probability of a typical entrepreneur falling in either the quantity rationed applicant category or the satisfied borrowers category. These findings imply that while women are less likely to be non-applicants and do not particularly experience loan-quantity rationing, they seem to be slightly more likely to be loan-size rationed borrowers than males. Therefore, if women have a problem in Ecuadorian credit programs, it appears to be more one of getting a smaller loan than desired rather than no loan at all. A significant problem existing in Ecuadorian markets, which seems to be more pronounced for men rather than for women, is manifested in the number of non-applicants to formal financial institutions.

6. CONCLUSIONS

The objective of this paper was to conduct an empirical examination of the issue of discrimination against women in formal credit markets. The case study of Ecuadorian credit markets was investigated by analyzing the distribution of loan applications for formal credit from men and women microentrepreneurs and exploring their success in gaining access to and obtaining the size of loan requested. An econometric model was tested to examine the distribution of loan applications and explore if discrimination against women seemed to occur in the process of loan allocation. A multinomial logit model was specified to analyze the probability of microentrepreneurs falling into the four categories of being non-applicants, quantity rationed applicants, loan-size rationed or satisfied borrowers.

The sample was composed of two groups: the beneficiary group which represents individuals who received assistance - credit, training or technical assistance - from a formal institutional program of assistance to micro and small scale enterprises; and the non-beneficiary or control entrepreneurs who were identified by the sampled beneficiaries as similar types of entrepreneurs. Most members of the control group, both male and female, did not even apply for a loan, while only one-third of the beneficiaries did not apply. The multinomial logit model results imply that the typical female entrepreneurs have a slightly lower probability of exercising internal self selection, that is, being non-applicants than male entrepreneurs. Moreover, female entrepreneurs have a higher probability of being loan-size rationed borrowers rather than loan-quantity rationed borrowers. Interestingly, the small probabilities of both male and female entrepreneurs being quantity rationed implies that this form of rationing is not widely exercised among participants in special microenterprise

programs. Male entrepreneurs exhibit slightly higher probabilities for being satisfied borrowers than female entrepreneurs.

In an attempt to clarify the nature of the gender issue, Buvinic and Berger showed that the low proportion of women receiving loans from a microenterprise program is due to the fact that few women applied for external finance. In our study, the results show that although a smaller total number of women than men entrepreneurs applied for loans, women represent a higher proportion of the entrepreneurs who applied for loans. Thus, the analysis presented in this paper has further shown that women entrepreneurs, although representing a smaller percentage of the overall sample, are more likely to be applicants and less likely to exercise internal self-selection than male entrepreneurs. Once women enter the market and initiate their business activities, they are as likely to borrow as their male counterparts.

Contrary to popular beliefs, the results of this study provide evidence that disputes the popular notion that gender bias leads to a large proportion of female loan applicants being rejected for a loan. If gender bias existed, there would have been a larger probability of loan-quantity rationed female applicants than male applicants, but the results do not support this notion. Female entrepreneurs, however, seem to be subject to more loan-size rationing than their male counterparts. The reasons for this fact are not clear and can only be explained through a detailed analysis of lender operations.

Much of the traditional research about women and finance has been too superficial. It assumed that the reported lower frequency of women borrowing from formal credit sources or the smaller loan size reported compared to men was solely the result of supply

side discrimination by lenders. Obviously discrimination may occur, but much of the traditional analysis ignores demand side behavior. The results presented in this paper show that the examination of gender discrimination requires going beyond the simple rhetoric found in many studies. The results show that female entrepreneurs in small businesses in Ecuador are more likely to apply for external finance than male entrepreneurs and they are equally likely to face loan-quantity rationing.

The loan-size rationing reported in this study is a result of the inherent asymmetric information problems that exist in financial markets. If entrepreneurs hope to be successful in borrowing, they need to generate information that lenders find useful in making loan decisions. This is likely to be most difficult for those small, first-time borrowers who also have the most difficulty in getting commercial loans. Special programs, such as those that exist in Ecuador, may ease the credit constraints for some of these borrowers, but they do not resolve the entire rationing problem inherent in credit markets.

Other studies have reported a small proportion of female relative to male borrowers in credit programs. This study lends support to the argument that much of the problem previously attributed to gender bias in the distribution of credit has deeper roots. Many of the credit problems that women face have their origin outside financial markets. Many relate to the traditional, cultural and legal constraints that deter women from joining the mainstream labor force or becoming active and growing entrepreneurs. Further research is needed into these fundamental issues that influence entrepreneurial behavior and self-selection in the credit markets. These problems cannot be resolved by interventions into

financial markets such as setting quotas for women borrowers or trying in other ways to force lenders to make more loans or larger loans to women.

TABLE 1.
DISTRIBUTION OF ENTREPRENEURS

SAMPLE	BENEFICIARIES		CONTROL	
CATEGORY	No.	PERCENT	No.	PERCENT
Non-Applicants	145	32.4	123	79.8
Rejected Applicants	31	18.1	16	10.4
Unsatisfied Borrowers	137	30.6	9	5.9
Satisfied Borrowers	84	18.8	6	3.9
Total	447	100	154	100

TABLE 2.
DEFINITION OF VARIABLES

VARIABLE	DESCRIPTION
Characteristics of the Enterprises	
ASST	Value of total assets in sucres.
OWNR	Dummy = 1 for owner of an enterprise.
NWBS	Dummy = 1 for a new business.
PRDC	Dummy = 1 for a production enterprise.
CMRC	Dummy = 1 for a commercial enterprise.
SRVC	Dummy = 1 for a services enterprise.
AGR	Dummy = 1 for an agricultural enterprise.
COAST	Dummy = 1 for an enterprise in the Coastal region.
Characteristics of the Entrepreneurs	
CSTMR	Dummy = 1 for customers holding checking accounts.
YRS	No. of years operating the business.
RSKY	Dummy = 1 for a reported risk-taker microentrepreneur.
TRN	Dummy = 1 for receiving training from a microenterprise program.
AGE	No of years of age.
EDUC	Dummy = 1 for graduating from high school.
HOF	Dummy = 1 for head of the family.
MALE	Dummy = 1 for males.

TABLE 3.
MULTINOMIAL LOGIT MODEL COEFFICIENT ESTIMATES

	Dependent Variable (in Natural Logarithm)					
Independent Variables	(P2/P1)	(P3/P1)	(P4/P1)	(P3/P2)	(P4/P2)	(P4/P3)
ASST	0.12E-7	0.12E-7	0.95E-8	0	-0.25E-8	-0.25E-8
	(0.56)	(0.63)	(-0.37)	(0)	(-0.07)	(-0.66)
OWNR	-0.06	-0.18	-0.29	-0.12	-0.25	-0.11
	(-0.38)	(-1.32)	(-1.92)*	(-1.92)*	(-1.36)	(-0.67)
NWBS	-0.26	-0.32	-0.25	0.06	0.01	0.07
	(-1.43)	(-1.93)*	(-1.24)	(0.32)	(0.04)	(0.34)
PRDC	-0.04	0.13	0.29	0.17	0.33	0.16
	(-0.19)	(0.69)	(1.36)	(0.76)	(1.34)	(0.69)
CMRC	-0.15	-0.02	-0.15	0.13	0	-0.13
	(-0.65)	(-0.09)	(-0.57)	(0.51)	(0)	(-0.46)
SRVC	-0.35	-0.04	-0.32	0.31	0.03	-0.28
	(-1.55)	(-0.2)	(-1.27)	(1.24)	(0.1)	(-1.03)
AGR	0.55	-0.07	0.18	-0.62	-0.37	0.25
	(1.78)*	(-0.21)	(0.47)	(-1.52)	(-0.93)	(0.59)
COAST	-0.02	-0.21	-0.11	-0.19	-0.09	0.09
	(-0.16)	(-1.89)*	(-0.87)	(-1.36)	(-0.58)	(0.64)
CSTMR	-0.03	0.06	0.66	0.09	0.65	0.60
	(-0.18)	(0.39)	(2.58)**	(0.46)	(2.47)**	(2.18)**
YRS	-0.06	0.001	0.02	0.06	0.08	0.02
	(-1.73)*	(0.06)	(0.56)	(1.66)*	(1.49)	(0.5)
RSKY	0.83	0.13	0.25	-0.69	-0.55	0.12
	(2.16)**	(0.67)	(1.04)	(-1.73)*	(-1.29)	(0.44)
TRN	0.74	0.52	0.56	-0.22	-0.18	0.03
	(4.94)**	(4.36)**	(3.77)**	(-1.29)	(-0.94)	(0.18)
AGE	-0.01	-0.02	-0.003	-0.01	0.005	0.01
	(-0.66)	(-1.58)	(-0.24)	(-1.0)	(0.35)	(0.6)
EDUC	-0.05	0.21	-0.29	0.26	-0.24	-0.51
	(-0.39)	(1.79)*	(-2.01)**	(1.74)*	(-1.39)	(-3.27)**
HOF	0.04	0.66	0.25	0.62	0.21	-0.41
	(0.26)	(4.5)**	(1.54)	(3.56)**	(1.09)	(-2.19)**
MALE	-0.06	-0.35	-0.06	-0.29	0	0.29
	(-0.39)	(-2.51)**	(-0.36)	(-1.72)*	(0)	(1.6)

Probabilities: (P1) Non-Applicants; (P2) Rejected applicants; (P3) Unsatisfied Borrowers; (P4) Satisfied Borrowers. Figures in parentheses are t-ratios.

* Significant at 10 percent level.

** Significant ar 5 percent level.

TABLE 4.
PROBABILITIES FOR A TYPICAL MICROENTREPRENEUR TO BE IN EACH CATEGORY

	Sector	Non-Applicants	Quantity Rationed Applicants	Loan size Rationed Borrowers	Satisfied Borrowers	Total
FEMALE	PRDC	54.2	0.6	41.3	3.8	100
	CMRC	58.4	0.6	38.3	2.7	100
	SRVC	59.2	0.5	38.0	2.3	100
	AGR	58.5	1.2	36.5	3.7	100
MALE	PRDC	69.1	0.7	25.9	4.3	100
	CMRC	72.9	0.6	23.5	2.9	100
	SRVC	73.7	0.5	23.3	2.5	100
	AGR	72.4	1.3	22.2	4.1	100

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