

Determinants of Credit Accessibility in Unorganized Sector: Empirical Evidences from Kolkata

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ABSTRACT

Over the years, unorganized sectors have contributed appreciably to the Indian economy. Despite the significant role, they are having lack of power of accessing the credit. The present study is based on Kolkata city of West Bengal and describes demographic and social conditions of the unorganized workers and also investigates factors which influence credit accessibility. Primary data captured through a structured questionnaire was administered to a total of 130 respondents. In order to find out causes behind the inaccessibility of credit, binary logistic regression method has been considered appropriate. The result of the analysis suggests that male are more likely to access credit than female and the predictor is significant. Age

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between 31-50 years, number of dependents, marital status, personal income and other assets possess are positively related to the credit accessibility and are also significant predictors. Age above 50 years, level of education, occupation and households' income are insignificant predictors. Study found that lending loans are always risky in nature, so, limited credit accessibility is possible by those unorganized workers who are expected to repay loans on time. Thus, appropriate policies are required for strengthening the unorganized sector in Kolkata as well as in the country.

Key words: Unorganized sector, credit accessibility, financial inclusion, collateral and logistic regression

JEL Classifications: E32, G21, O16

I. Introduction

Inadequate access to financial services through formal financial institutions is considered one of the main reasons behind inadequate economic opportunity and poverty situation in developing countries. Credit is essential in poor rural economies and without it people would be regulated to a hand-to-mouth existence. It is believed that providing credit to the poor households or small entrepreneurs constitute a high degree of risk than the economically stabled or large entrepreneurs. Absence of strong formal credit institutions facilitates to flourish the informal credit institutions in developing countries. Low transaction costs and perfect information about the borrowers made loan collection mechanisms efficient by the informal credit institutions even though they are charging exorbitant rate of interest. For poor people with little income security, finance is a necessity. Policy of the commercial lending institutions is more or less same while providing credit to the poor rural households or to the unorganized poor labourers working in urban sectors. Most of the past studies in different countries focused on credit accessibility and worthiness to repayment of loan or micro credit on rural households. We did not find out any previous study on credit accessibility of urban households who are involved in unorganized sector for their livelihood. But, unorganized workers become important contributors to the development of the nation in most of the developing countries in South-Asia. Contribution of the unorganized sector is significant to the national level, either for creating employment

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opportunities or providing a source of livelihood for low-income households. Despite the significant role played by the sector, they have faced many constraints over the years. Lack of tangible security and the procedural bureaucracies of credit borrowing are one of the key factors of poor access to formal credit. This paper presents an empirical analysis of the determinants of credit accessibility in unorganized sector in Kolkata. Our study area is India's one of the metro cities Kolkata where the majority of the unorganized workers are self employed. They are engaged as building and construction workers, leather workers, bidi rolling, labeling and packing, workers in saw mills, oil mills, domestic workers, barbers, vegetable and fruit vendors, news paper vendors, cobblers, lady tailors, physically handicapped self employed persons, rickshaw pullers, auto drivers, carpenters and tannery workers. We describe demographic and social condition of the unorganized workers and also investigate factors which influence credit accessibility of those workers. Under the unorganized sector, whether it is manufacturing or service sector industries, it is believed that unorganized workers starved of capital. Apart from that, they also deprived of getting various types of institutional credits like housing loan, personal loan and educational loan. Since, most of them fail to access formal credit, so they heavily depend on informal credit at high rate of interest. But, in some cases it was found that they failed to access it. In urban or metropolitan cities adequate number of banks is present. According to Schmidt and Kropp (1987) problem of accessing institutional credit prevails due to their complex lending policies. Complicated application procedures and imposed restrictions on credit for specific purposes restrain unorganized workers to take formal credit. What is displayed in form of prescribed minimum loan amounts, complicate application procedures and. In the study of Banerjee and Duflo (2007) it was mentioned that even in the presence of banks, 95% of poor borrowers living below \$ 2 a day in Hyderabad, India access informal credit. Credit accessibility from commercial banks remain a difficult task by the low income or poor households because of the nature of formal credit market, asymmetric information, inadequate collateral and screening problems in formal lending practice (Khoi et al., 2013). Information asymmetry between lender and borrower is one of the major determinants for rationing of credit demand (Stiglitz and Weiss, 1981). Study of Binswanger, McIntire and Udry (1989) found that adequate collateral was a major determinant of lender's decision to ration loan demand. Inadequate amount of formal credit is a necessary condition for credit rationing but not sufficient (Turvey et al., 2012). In rural village of West Bengal, farmers are more interested to formal credit while rich is more inclined towards informal credit (Bhattacharya, 2005). Bhattacharya (2005) explained that the existing policies targeted credit to the poor with limited alternatives for

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the rich. Mpuga (2004) examined demand for credit in rural Uganda. He showed that demographic features have significant implications on demand for credit. Decision to apply for credit is directly related to age of the households (Mpuga, 2004). The young and energetic households are expected to save more due to their high expected incomes. The intermediate ages (19-30 years) have positive and significant demand for credit, while the aged households (above 50 years) are less prone to demand for credit mainly from the formal and the semiformal sources. Characteristics like, number of years of education and household assets are having significant effect on demand for credit. Dehejia, Montgomery, and Murdoch (2005) study proposed that demand elasticities for credit varying from (-) 0.73 to 1.0 for slum dwellers in Dhaka. In South Africa as interest rate fall by 1%, probability of a fixed amount of loan offer increased 0.28% on an average (Karlan and Zinman, 2008).

In this paper we use the primary data to find out the determinants of credit accessibility in Kolkata's unorganised sector and their present social and economic status. Section II provides an overview of employment scenario in Kolkata. Section III describes the research methodology. The results and discussions explained in Section IV, with concluding remarks presented in Section V.

II. Employment Scenarios in Kolkata

Jacob (2011) has found that the unorganized labour force is highly stratified on caste and community concerns in rural areas. On the other hand, such concerns are less in urban areas. But, that extent cannot be neglected because unorganized workers in urban areas are basically migrant workers from rural areas. According to Siddiqui (2011), the unorganized sector accounts for 66.7% of total employment in Delhi while the corresponding figure for Mumbai is 68% and for Chennai, it is 60.6%. So, the gross contribution of the urban sector to the national economy which makes the unorganized sector is itself a major employer in the metropolises like Mumbai, Delhi, Kolkata and Chennai. As per the data of Government of India in Census 2011, total population of Kolkata metropolitan region is about 1.41 crores. The male population is approx 0.74 crores while female population is about 0.67 crores. Most of the households in slums are engaged in occupations belonging to the unorganized sector. The study of Bhowmik and More (2001) depicts that there are two categories of employment available in the city's unorganized sector: casual or contract labour and self-employment and they do not have sufficient social

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security and irregular income, regulation in work, and legal protection. As of 2003, 36.5% workers were occupied in servicing the urban middle class (as maids, drivers, ayahs, etc.), 22.2% were casual workers and about 34% of the available work forces in slums were unemployed. Most of the underprivileged class of people are participated in the informal or unorganized sector and work in bidi binding, cobbling, car washing, clay toys manufacturing, fruit selling in the street, laundering, housecleaning, tailoring, leather work, sweeping, plastic salvaging, masonry, hawking, rickshaw pulling, plumbing, shoe making etc. Flexible time of work and the production is always the norm in West Bengal and so in Kolkata. Unorganized industries contributed the maximum share of output and employment of the total industrial sector. In the year 2007, the number of unorganized workers in farm sector was 1.2 crores (97.26%), whereas, in nonfarm sector the number was 1.5 crores (90.25%) (West Bengal Development Report, Planning Commission of India, 2010). This report expressed that, between 1994-95 and 1999-2000, the percentage of employment in informal manufacturing in urban West Bengal increased, while the share of secondary sector declined to 20.5%. In contrast, the share of the tertiary sector increased from 41.4 to 50.0%, between 1990 and 2000. Kolkata and its adjacent districts (Howrah and North and South 24 Parganas) experienced a significant growth of the service sector and simultaneously these districts have a share of urban population of more than 50%.

In Jawaharlal Nehru National Urban Renewal Mission (Jnnurm) report, mentioning the 55th Round NSSO data, it was revealed that the number of persons in labour force in urban West Bengal was 378 persons per 1,000 people in 1999-2000. In addition to that the proportion of persons in labour force has been showing a decline trend in recent times. The report also pointed out that 22.03% unemployment exists in against of 65,01,509 labour force in 2010-2011. Elasticity of employment has fallen from 0.57 during 1985-1986 to 1993-1994 period to 0.17 over 1993-1994 to 2001-2002. The projected rate of growth of employment in Kolkata Metropolitan Area in the year 2010-2011 was 1.40% and it would be 1.50% in 2020-2021. As per their report in sector-wise percentage distribution of projected employment, tertiary sector had a highest level of employment 62.05% in 2010-2011 and it would be 65% in 2020-2021.

III. Methodology

Conceptual framework and empirical model

Demand-related factors are income, occupation, Interest rate charged on loans, age, education, number of dependents in a family, awareness and poverty that are hypothesized to affect households' demand for credit, which can directly influence households' accessibility to credit. This is because households' access to a certain type of credit can be conceptualized as a sequential decision making process that is initiated at the demand side (Zeller, 1994).

Past studies have identified different types of household-level factors influence households' ability to access a certain type of credit. Mohamed (2003) studies examining the accessibility to formal and quasi formal credit by farmers in Zanzibar, where socio-economic characteristics of rural households are age, gender, education attainment, and income level are affecting accessibility of formal credit by farmers.

Credit accessibility model initiated with the demand theory of credit, where household wants to maximize its expected utility of credit (Khoi et al., 2013). Credit market consists of credit demand and credit supply. But, flow of credit does not simply follow the rule of demand and supply theory (Stiglitz and Weiss, 1981). It is also based on lenders perceptions on borrowers' credit worthiness (Aleem, 1990). In our study, to find out the determinants of credit accessibility of Kolkata's unorganized sectors, we considered only demand side factors of which demographic variables are age, gender, education, marital status, number of dependents and socio-economic variables are occupation of the respondent's, personal income, households income (respondent's personal income plus other members income from the same family those who share the same kitchen), household asset and interest rate charged on loans. It is also assumed that purposes of the demand for credit by unorganized workers are not the same and minors in the unorganized sector in Kolkata district have not been considered. Table 1 presents the definitions of variables used in the empirical model.

The empirical approach is based on binary models which describe the probability between two alternatives accessing or not accessing credit by the individuals of the unorganized sector. This paper utilises information of their accessibility of credit (taken or not taken) and demographic

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and socio-economic characteristics to estimate the probability of the characteristics using the binary logistic regression model. The empirical model is specified as follows:

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$$P_i(Y_i = 1) = \frac{1}{1 + e^{-(\alpha + \beta_j X_{ji})}} = \frac{1}{1 + e^{-z_{ji}}} \quad \text{Eq. (1)}$$

Where: $Z_{ji} = \alpha + \beta_j X_{ji}$

$$(1 - P_i) = \frac{1}{1 + e^{z_{ji}}} \quad \text{Eq. (2)}$$

Y_i is the outcome variable that is credit accessibility of i^{th} individual. P_i is the probability of accessing credit of i^{th} individual and $(1 - P_i)$ is the probability of not accessing credit. Vector X_{ji} contains attributes of demographic and socio-economic characteristics of i^{th} individual, and β is the corresponding unknown regression coefficients to be estimated. The probability P_i ranges between 0 and 1 and is nonlinearly related to the X_{ji} attributes.

Equation (1) represents the cumulative logistic distribution function in a non-linear form. For the purpose of interpretation, it is usual to write the model in terms of log-odds ratio (Maddala, 2001). With a logit transformation, the estimated model will become a linear function of the explanatory variables, which is expressed as follows:

$$\text{logit}[P_i(Y_i = 1)] = \log\left[\frac{P_i}{1 - P_i}\right] = \alpha + \beta_j X_{ji} \quad \text{Eq. (3)}$$

The odds ratio is defined as:

$$\frac{P_i}{1 - P_i} = \frac{1 + e^{z_{ji}}}{1 + e^{-z_{ji}}} = e^{z_{ji}} \quad \text{Eq. (4)}$$

The odds ratio is the ratio of favorable to unfavorable cases of an individual having access to credit in the current context. This preference depends on the values of the explanatory variables.

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Data

In our primary survey all the randomly drawn samples are unorganized workers. They are basically self-employed in manufacturing or service sector, migrant workers, contract and casual labourers or domestic workers. All the domestic workers are female. During the collection of sample we did not consider full-time domestic workers those who are attached with a particular house 24 hours continuously in the last two months.

The survey has been conducted for over a period of three months (May - 2013 to July-2013). We have used purposive sampling methods for focusing on particular characteristics of a population that are of interest in our study. Though our sample size is small yet we tried to cover all parts of Kolkata such as north, south, central and eastern Kolkata. The rationale behind this selection is to investigate the accessibility of formal credit in the presence of financial institutions. Our total sample size is 130. Average collection of sample from each places were approx 35. Types of sample which we have chosen are lower-class, middle-class or lower middle-class households. While collecting information from field survey, we invited one household member (preferably head) to participate in this survey. The respondents may include male or female members from households. A structured questionnaire has been used to obtain relevant demographic information and socio economic information which are used in the binary logistic regression model to identify key demographic and socio economic factors that influence demand for credit among unorganized workers. Respondents were asked a wide range of personal and household related questions. The demographic variables collected from the survey includes, age, gender, education, occupation, number of dependents, personal income, household income, possesses bank account and asset holding. The descriptive statistics of the variable used in the study is presented in Table 2 and percentage distribution of respondents by some socio-economic and demographic variables presented in Table 3. Credit accessibility is the dependent variable in our case study. Credit is accessing from banks (public sector, private sector and cooperative), relatives and friends, professional money lenders and traders and commission agents. Accessibility measured through dummy variable. Dummy value 1 indicates that the respondent has access the credit and 0 otherwise.

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Table 1: Description of Variables Used in Binary Logistic Regression Model

Variables	Variable description (Demographics)
Gender	Gender of the respondent (0 = female, 1 = male)
Age	Age of the respondent (in years), 1= less than 40 years (age group1), 2 =41-50 years (age group2), 3= above 50 years (age group3).
Education	Number of years of study by the respondent, 1 = less than equal to 10 years (education 1), 2 = 11-12 years (education 2), 3= 13 years and above (education 3)
Marital status	0= unmarried, 1= married
Number of dependents	1= less than equal 2 members, 2= more than 2 members
Variables	Variable description (Socio-economics)
Occupation	<p>Respondent's occupation, 1= manufacturer, 2= petty traders, 3= service provider</p> <p>Manufacture workers means those person who involved in making goods through a process involving raw materials, components, or assemblies. In the study we have several manufacturers who produce goods like leather hand gloves, Chinese noodles, local sauce (tomato, chili, and vinegar), card board, clay toys, bamboo fence etc.</p> <p>Petty traders are those workers who traded on a small scale such as grocery shop, supplier of the building materials, book shop, tea stall, fry shop, hosiery shop etc.</p> <p>Service provider includes those people who earn money through providing services such as tailoring, Television and mobile repairing centre, renting generator for occasion purposes, cyber cafe, laundry, road side eateries, tuition, daily wage based workers, ayah centre etc.</p>
Personal income	Respondent's monthly income (in INR ²), 1 = less than equal to INR 9,000, 2 = more than INR 9,000
Households income	Total monthly income of the family those who share the same kitchen, 1= less than equal to INR 12,000, 2 = above INR 12,000

² Indian currency Rupees

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Asset	Asset means, owned residential houses in different category such as, kuchha house ³ , semi-pucca house ⁴ and pucca house ⁵ , possesses two or four wheeler car, shop and land , 1= Asset possesses, 2 = Asset not possesses
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IV. Results and Discussion

Descriptive results: In Kolkata district, out of 130 sample 82.3% male workers and 17.7% were female workers. Out of which, number of married and unmarried workers were 82.3% and 17.7% respectively. Study revealed that 43.22 years was the average age of the workers, within the range of 22 and 64 years. Study included only adult workers who had completed their 18 years of age. We categorized age of the workers into three groups: less than 40, 41-50 and above 50. Maximum number of workers found from less than 40 years age group. Education wise we had categorized workers into three groups: secondary (up to 10 years), higher secondary (11 – 12 years) and graduate and above (13 years and above). The average age of education was 11 years with minimum 0 and maximum 17 years. It was observed that maximum workers had completed less than equal to 10 years of their schooling. As far as numbers of dependents are concerned, the average dependent was approx 2 in every family. 69.2% households had less than equal to 2 dependent and 30.8% specified as above 2. Here, dependent means, someone who was receiving support for their livelihood from another person. People in the unorganized sectors were involved in various working activities for their livelihood such as manufacturer, petty traders and service provider. In our study, it was found that maximum workers were engaged as a service provider. 27.6% failed under the category of petty traders and rests were working as a manufacturer. The average personal and household income was INR 11,479 and INR 12,896 per month respectively. Majority of the households (55.4%) earn less than equal INR 12,000 per month and the rest greater than that. 46.2% unorganized worker's personal income was less than equal to INR 9,000 and 53.8% earned more than INR 9,000 whereas, 55.4% households earned less than equal to INR 12,000 and 44.6% earned more than that.

³ House made up with mud, bamboo and tiles

⁴ House made up with bricks, bamboo and tiles

⁵ House made up with bricks and stones

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Table 2: Percentage Distribution of Respondents

Variable Name	Description	Percentage
Gender	Male	82.3
	Female	17.7
Marital Status	Married	82.3
	Unmarried	17.7
Age (Years)	Less than 40	42.3
	41-50	36.9
	Above 50	20.8
Education (In number of years)	Secondary Education (less than equal 10 years)	36.9
	Higher Secondary Education (11-12 years)	29.2
	Graduate and above (13 years and above)	33.8
Dependent	Less than equal 2	69.2
	More than 2	30.8
Occupation	Manufacturer	26.2
	Petty traders	27.6
	Service provider	46.2
Personal income (INR/month)	Less than equal INR 9,000	46.2
	Above INR 9,000	53.8
Household income (INR/month)	Less than equal INR 12,000	55.4
	Above INR 12,000	44.6
Bank account	Yes	90.0
	No	10.0
Credit	Formal	26.2
	Informal	55.3
Asset holding	Possesses	62.3
	Not possesses	37.7
Credit constraint	Yes	76.2

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	No	4.6
	Don't know	19.2
Reasons for credit constraint	Inadequate collateral	17.7
	Unable to repay on time	3.8
	High rate of interest	8.5
	Others	27.7
	Not answered	57.7

Source: Authors Research (2013)

Table 3: Descriptive Statistics of Selected Characteristics of Unorganized Workers

Variable Name	Mean	Minimum	Maximum	Standard Deviation (σ)
Age	43.22	22	64	8.74
Education	11.27	0	17	3.23
Dependents	1.88	0	4	1.12
Personal income	11479.23	2500	40000	5879.76
Households income	12896.15	3000	40000	6085.21

Source: Authors Research (2013)

Out of 130 samples, 106 workers (81.5%) took credit from different sources, such as banks, relatives and friends, professional money lenders, traders and commission agents and 24 workers (18.5%) not demanded or accessed any form of credit. Out of 130 workers, only 26.2% had taken formal credit from scheduled commercial banks like public or private banks and 55.3% taken informal credit. It is said that financial inclusion is not possible until and unless people are not coming under the formal financial system. But, we observed, only 26.2% unorganized workers enable to access formal credit even though 90% possessed bank account. Informal sources of credit include relatives and friends, professional money lenders and traders and commission agents. 31.5% workers borrowed from relatives and friends, 16.9% from professional money lenders and 6.9% from traders and commission agents. Possession of asset holdings had an influence on credit accessibility. Asset means, owned residential houses in different category such as, kuchha house, semi-pucca house and pucca house, possesses two or four wheeler car, shop and land. In our survey it observed that 37.7% unorganized workers did not have any other assets and 62.3% had. We also asked the respondents whether they faced any constraint or not

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while accessing the credit. There were different types of constraint like not adequate collateral, not able to repay on time, interest rate too high and other constraints. 76.2% workers responded that they confronted with constraints while accessing the credit, 4.6% said that they did not face any constraints and 19.2% did not respond. 17.7% unorganized workers revealed that due to inadequate collateral they were not able to access credit, whereas, 8.5% workers were unable to access credit due to high rate of interest, 27.7% mentioned the other reasons for it and 57.7% not answered.

Table 4: Variables in the Equation (Credit Determinant Factors)

Variables	Coefficient	Odds ratio
Male	.959*	2.608
Age group2	.989*	2.643
Age group3	-.465	.628
Education 2	1.025	2.787
Education 3	.915	2.496
Married	1.470**	4.349
Dependent 2	1.405**	3.899
Petty traders	.451	1.570
Service provider	.369	1.447
Personal Income 2	1.831*	6.238
Households Income 2	-1.713*	.180
Other asset possesses 1	2.492**	12.084

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Constant	-2.512	.081
Source: Authors Research (2013) Note: first category is the reference category. Categories are mentioned in table 1. Note: $R^2 = 0.619$ (Hosmer and Lemeshow), 0.312 (Cox and Snell), 0.500 (Nagelkerke). Model Chi-square (3) = 48.648, $p < 0.001$ ** and * Show significance level of 5 and 10%, respectively.		

Results of econometric analysis: Table 4 shows the results of the variables in the equation under demand related factors. It estimates for the coefficients for the predictors included in the model. The enter method in the binary logistic regression was used. All the variables were categorical variable in our analysis. The estimated results were almost in line general expectations. Overall, the model fitted the data relatively well and most of the regression coefficients were statistically significant had expected signs and significance levels.

Hosmer and Lemeshow's R^2 measures how much the badness of fit improves as a result of the inclusion of the predictor variables (Field, 2009). Its range is $0 \leq R^2 \leq 1$. $R^2 = 0$ indicates that the predictors are useless at predicting the outcome variable whereas, $R^2 = 1$ means that the predictors are perfect at predicting the outcome variable. In our study, Hosmer and Lemeshow's R^2 was 0.619, so the predictors like gender, age, marital status, education, income, and occupation were good enough to predict the outcome variable.

The Cox and Snell pseudo R^2 statistic value 0.312 delineated that all the independent variables in the logistic regression model collectively account 31% the explanation for whether respondent will get credit or not. Nagelkerke's R^2 statistic value 0.500 indicated a moderately strong relationship of 50% between the predictors and the prediction. The model chi-square value 48.648 was statistically significant so the model was better to predict the outcome variable.

The coefficient of gender was positive and significant. Odds ratio for the predictors and for males were 2.608. Hence, males were 2.608 times higher odds of credit accessibility compared to females. It showed that males were more likely to take risks than females. They were willing to start their own business if they were having sufficient amount of capital, whereas, the occupation of most of the females were as a service provider. In addition to that, male act as a head of the family member in Indian society, so, they were having responsibility to earn money and nurture his family smoothly, which induce him to demand for credit more than female. The impact of the age of the respondents was positively related to the decision to apply for credit and it was

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statistically significant. However, the coefficient was negative for the respondents with higher age bracket (age above 50 years), although the coefficient was not statistically significant. The odds of credit accessibility was 2.643 times higher for age group2 than age group1 whereas, it was falling by 0.628 times for age group3. People from age bracket 2 had ambitions to earn higher incomes, so, they were expected to be more active in terms of saving and accumulate their wealth, while the old have lack of motivation and energy to start up a new venture which created apathy towards demand for credit. Level of education was having positive impact on accessibility of credit, although the coefficient was statistically insignificant. The odds of credit accessibility was 1.025 times and 0.915 times higher for the category of education2 and 3 as compared to reference category1 respectively. It was very minor differences on the accessibility power of credit with respect to different level of education. Education might not act as a barrier of accessing credit to the unorganized workers, because they were having opportunity to access informal credit from different sources and for that educational qualification was not so important. The coefficient of married was positive and statistically significant. Married workers had 4.349 times higher odds of credit accessibility than unmarried workers. In Kolkata metropolis majority of the people were engaged in some kind of activities to earn their bread and butter. In case of married life, working or earning partner took utmost responsibility of non-earning or less earning members. More than two dependents in a family create positive impact on accessibility of credit and also statistically significant. The odds of credit accessibility was 3.899 times higher as compared to number of dependents less than equal to two. It observed that big household size needs more financial support for their livelihood. As a result demand for credit was also higher than the small size of family. Occupation of the respondent was not a significant predictor for accessibility of credit. The odds of credit accessibility was 1.570 times and 1.447 times higher for the category of petty traders and service providers as compared to reference category manufacturer respectively. It concluded that a minor differences in terms of power of credit accessibility with respect to different types of occupation. Since, the source of income of the unorganized workers not fixed and irregular, irrespective of their occupation and most of them were involved as a casual worker, so, their nature of occupation frequently changed in a year which made the predictor insignificant for credit accessibility. Personal income of the respondent more than INR 9,000 per month seemed a dominant impact and it was statistically significant. Its coefficient value 1.831 denoted that as income of the households' increased by one unit (measured in thousands) then the log-odds of credit accessibility increased by 1.831 times. The odds of credit accessibility was 6.238 times higher as compared to the personal income less than

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equal to INR 9,000. High personal income means the person was more confident in repaying loans if they borrow. Therefore, they were more inclined towards credit accessibility. On the other hand, households' income had a significant impact on credit accessibility with coefficient (-) 1.713. As household income increased the financial crisis at home went to diminish. Demand for credit went down. Other assets possessed by the respondent were having another positive dominant factor for credit accessibility. The odds of credit accessibility was 12.084 times higher as compared to non holding of other assets. The positive impact of the other assets possesses imply that respondents were now more confident in repaying loans if they borrow and lenders also have belief that other assets could be used as a collateral in their lending money.

V. Conclusions

The study examines the key determinants that influence the credit accessibility of unorganized sectors in Kolkata metropolis. Overall, our results suggests that majority of the workers are male and have more access to formal and informal credit. The empirical analysis is based on descriptive statistics and binary logistic regression which established nine demographics and socio-economic factors important to affect unorganized worker's accessibility to credit, including gender, age, education, marital status, number of dependents, occupation, personal income, households income and other assets possesses. Among all other variables, gender, age category from 31-50 years, marital status, number of dependents, personal income, household income and other assets possesses were found to be significant factors. Conversely, age category above 50 years, level of education and occupation are insignificant factors for accessibility of credit.

Male are more likely to access the credit than their female counterpart because of their high risk taking ability and responsibility towards his family to run it efficiently and effectively. Age category of the workers between 31-50 years are more likely to access the credit as compared to the workers in lower age bracket due to their confidence of repaying loans as well as they have responsibility towards their own family. Workers aged above 50 years are suffering from lack of confidence and energy which creates hindrances to access the credit. Credit accessibility by the married worker is more likely than unmarried worker because of caring responsibility of the partners towards each other. Demand for credit is positively related to the large household size where number of dependent is more than two. Probability of credit accessibility increases with

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the increase in personal income, household income and other assets possesses by the unorganized worker due to the conjecture of lenders that the borrowers will be capable to repay their loans on time. This feeling of safety of lenders intends to provide more loans to the workers. The study results show that like educational level, occupation is also having positive impact on accessibility of credit, although the coefficient is statistically insignificant.

Observations from this study found that lending loans are always risky in nature, so, limited credit accessibility is possible by those unorganized workers who expected to repay loans on time. One efficient way of increasing the credit accessibility to unorganized sector is to encourage workers to create investment opportunities through different occupational activities. It leads to increase in additional capital requirements, which probably increases households' demand for credit.

The state and central government should initiate some policies and programmes to strengthen the economic power of unorganized workers so that financiers would be attracted. Arrangements of vocational training, seminars, providing technical assistant and educational facilities when they are involved in some working activities must be facilitated.

From the study it is found that female are less likely to access the credit than male. To eradicate the gender inequality female has to be empowered economically, the Central and State government should introduce policies to provide credit with easy terms and conditions and ensure the zero percent defaulters simultaneously.

Another grave area is that the lending by formal institutions is too low mainly due to the inadequate collateral of the borrower, default problems and high transaction costs. They may link their operations with informal lenders to ensure guarantee loan repayment from unorganized workers. Therefore, the partnership between the formal and informal sector may improve the efficiency of credit delivery mechanism in Kolkata's unorganized sector.

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