Gender And Access To Credit In Micro And Small Enterprises In Mutare, Zimbabwe

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Abstract
The research study sought to investigate the relationship between access to credit and gender in urban areas of Zimbabwe in which the informal sector is larger than the formal sector. In order to achieve this, the study used the Grameen Theory of micro-lending in Bangladesh, the MC2 theory and ROSCAs theories. The study used secondary data obtained from ZIMSTATS, World Bank, Confederation of Zimbabwe Industries (CZI), the Wisrod website and other publications. E-Views was used to analyze the data using Ordinary Least Squares (OLS) for estimation. The results obtained revealed that gender and age of the client are insignificant in determining accessibility of credit from MFIs. Work attendance, loan repayment ability and profit per day have a positive relationship with access to credit; and firm age has a negative relationship with access to credit in Zimbabwe. In light of these results, the study recommended the government to increase access of credit so as to increase economic activity where there is a large informal sector. In addition, it also recommended that the government should implement policies which enable the participation of women and also use credit creation multipliers as a way to increase economic activity leading to economic growth.

Keywords: Micro Finance Institutions, credit, gender
Introduction
Most developing economies experience low economic activity due to lack of capital for entrepreneurs who tend to fail to raise enough capital to set up their businesses and an economic environment which discourages saving, hence most of the efforts are gone unnoticed. Given different economic hardships in Africa, bad economic environment and low rate of savings in the economy, this leaves credit as one of the major source of finance to fund for the capital of the business in most developing countries. Accessibility to financial services is available, but it is difficult as traditional banks consider someone with a steady employment, verified credit history from formal financial institutions and collateral or guarantor in order to access the desired amount of loan. Small to medium entrepreneurs together with vendors have been left with nowhere to attain micro-credit for their businesses. This led to emerging and increase in growth of Micro Finance Institutions (MFIs). Most of the African economies are operating below full employment levels as women are being discriminated, restricted to access credit facilities from most financial intermediaries such as traditional and formal banks. This paper looked closely at gender and access to credit in a developing economy of Zimbabwe from MFI in the town of Mutare.

Background and research problem of the study
Micro-credit came to be as an attempt to resolve poverty problems in Bangladesh and on the other side of earth Accion International started as a volunteer organization that was focused on improving basic needs such as health, education and infrastructure and it started issuing small loans in 1973 (Accion International, 2006). Continuous financial crisis which began in 2000 up to 2008 have seen unemployment and inflation increasing each and every year uncontrollably together with low business activity as most of the firms faced either liquidation or bankruptcy closures. As a result, most people lost their jobs during this period leaving them with no choice but to do piece jobs and whatever they could in order to survive. Poverty rates ran near 80% in 2007 while, on the other hand, the unemployment rate was too high being ranked as the world’s largest and world’s worst, at 95% (Indexmundi, 2018).

After 2008, Zimbabwe’s economy started to recover and it became one of the fastest growing economies in the Southern Africa, averaging 7.3% growth rate between 2009 and 2011 (Mail and Guardian 2015). The companies reopened except the manufacturing industry which had lost investors from $444 million USD in 1998 to $9 million USD in 2004 (CZI, 2010). Damiyano et al., (2012) postulates that even in the years that followed, Foreign Direct Investment (FDI) fell even further, thus, there was little capital injection in most industries in the economy, and the informal sector grew more than the formal sector.

The growth of the informal sector has led to the emergence of MFIs and even reached the extent at which banks developed sections of micro credit within their systems, for example, FBC bank now has a department of microfinance. This has seen increase in economic activity since the economy is operating greatly with the informal sector than the formal sector; thus, increase in growth although at a slower rate than expected. Entrepreneurs and sole traders had access to credit, meaning there was availability of capital for them to start their businesses. However, since the MFIs are into making profit, the accessibility of credit is uneasy due to the fact that gender may affect access to credit and also, there has to be a link between credit
performance, repayment ability and access to credit for both male and females. Lenders find it difficult to lend to new entrepreneurs since they will not have the company’s records. The research scrutinized all possible factors on how determination of access to credit in small and medium enterprise has come to be.

Despite that there have been gender equality campaigns which have been and some are still being carried out across the country, accessibility of credit to women in Zimbabwe is difficult. The issue of gender and availability of credit has been one of the major controversial issues since it is also a determinant of growth in the country. It could be undisputable that the Zimbabwean economy is operating under the informal sector hence the introduction of credit to small entrepreneurs to increase growth and living standards. Most of the entrepreneurs in the informal sector are women, of which, they are the ones being discriminated or being affected with accessibility of credit. This research advances the view that who is more preferred when it comes to credit accessibility, men or women in Mutare given the information that a greater percentage of the informal sector is made up of women. The current situation in Zimbabwe reveals that there are more micro finances or lending companies lending to both men and women who are operating their small businesses.

Research Significance and scope
This research sought to analyze whether the accessibility of credit is actually determined by gender. The study sought to go deeper into detail about the duties performed by the micro finances or lending companies on their criteria on lending to different genders. It also looked at various markets in Mutare and how they perform, that is, their payments to loans, leading to how they are accessible to credit.

Knowing and understanding the key economic and socio-cultural constraints in the economy of Zimbabwe can be of great importance for re-designing economic policies and their ultimate implementation using the accessibility of credit in relation to gender.
- It could provide the Government with a master plan in achieving gender imbalances problems in order to achieve macro-economic objectives.
- The project could provide valuable information to policy makers on gender discrimination issues which need attention and help in policy making just like the The National Gender Policy (2013-2017).
- The public could know the effects on gender discrimination to economic growth, which includes the negative and positive effects, if they are any.

The study could help the economy of Zimbabwe increase economic activity levels through recommending the strategies that can involve both male and female in order to achieve the desired economic growth and living standards in the country.

The research is limited to one city which is Mutare in Zimbabwe, covering only micro and small entrepreneurs (clients) of Wisrod Investment ignoring other MFI s. The research covers the micro and small entrepreneurs only of which there are other groups of people such as farmers which need access to credit. The research is based on gender and accessibility to credit, of which there are other factors which may affect accessibility to credit.

Theoretical and empirical literature
The study draws some literature base from micro credit theories and literature from many scholars who explained challenges faced by women in credit financing.
The Grameen Bank Model of Bangladesh is a microcredit concept originated from Bangladesh after being invented by Professor Muhammad Yunus who is the founder of the Grameen Bank and Nobel Prize winner in 2006. The Grameen bank came out as a pilot test in order to assist the poor in the rural areas with financial service in the form of loans. In 1974, there was famine in Bangladesh and Professor Yunus aimed at reducing poverty, thus, he loaned USD27 to 42 families allowing them to earn a living through selling and buying of small articles. The project succeeded and had the support of Bangladesh Central Bank in 1979 after offering its services to a village, Jobra. The bank further extended its services to Tangail district before spreading to other areas in Bangladesh. Professor Yunus had a grant from Ford foundation to incorporate Grameen Bank after the government turned it into an independent bank and gaining support from two bankers, Mary Houghton and Ron Grzywinski from Shore Bank in Chicago in 1983. According to De Soto (2000) a Peruvian economist, poor people have no assets worthy to provide as collateral to the banks when acquiring a loan, hence they do not have access to loans from banks. At the beginning Dr Yunus strained to attend to at least 50% women but later with barriers fallen, 95% of Grameen’s clients being women, (Yunus, 2001). Grameen started with most borrowers being men and just 44% of clients were women in October 1983 (Yunus 1983).

In 1986, women made up about 75% of Grameen’s members, rising steadily through the 1990s along with overall membership growth. The preference of women over men was supported by the experience showing that women had better repayment records than their male counterparts. Women also have comparative advantage as microfinance customers because it stretches to other dimensions of performance as well. For example, Khandker (2003) finds that a 100% increase in the volume of borrowing by a woman would lead to a 5% increase in per capita household nonfood expenditure and a 1% increase in per capita household food expenditure, while a 100% increase in borrowing by men would lead to just a 2% increase in nonfood expenditure and an insignificant change in food expenditure. This shows the evidence that serving women is better than men as it has stronger impact on households and it seems it works hand-in-hand with the dual of objectives of meeting social obligations (households expenditure) and the continuation of high repayment rates.

Formal-sector commercial banks tend to favor men as always, due to the fact that most men control the assets that financial institutions seek as collateral and men are the ones running large businesses. Despite all that, microfinance is totally a different business, they target small businesses struggling in the market, often involving self-employment mainly in the informal sector and women constitute a large portion of the growing segment of informal sector businesses. Furthermore, women are more concerned about the family, that is, children’s health and education than men (Blumberg 1989). The other reason why women are chosen by the microfinance is that they are over exemplified among the poorest of the poor, and often oppressed by African norms, that is, their husbands and prevailing social norms.

In Mutare women are the target for the microfinance because they are more conservative in their investment strategies and can be easily persuaded (peer pressure) and the intermediations of loan officers making them more reliable than men. Most of the small firms in Mutare are owned by women. This model actually applies to SMEs in Mutare as most small firms are owned by women and they are the bread winners for most families.

A Game Theoretical Approach to Group-Lending requires the existence of collateral before granting a loan as this acts as the security for the loan. In most cases the low income levels
and worthy assets would restrain most people from obtaining credit. Therefore, micro-finance institutions have adopted the group-lending policy, thus they no longer require collateral from each group member. However, they use colleague pressure and social selectivity (as in the way they know each other) to increase repayment rates and evade against default risk. Individuals are left to group themselves and each group member receives a specific loan amount and the whole group is responsible for repaying credit. Selection method eliminates those clients with questionable reputation and high risk of unable to repay the debt. Grameen Bank proposed the sanction for defaulting will be credit denial for all group members (Morduch 1999). Thus, a microfinance institution substitutes collateral with the mechanism of social reputation within a group. Sachs (2005) postulates that group lending reduces transaction costs, another cause for standard banks to refrain from lending to the poor. The model above of group-lending by Grameen Bank can be best validated using game-theoretical approach. Basically, the social optimum is achieved if both players cooperate, that is, if the micro-finance institution grants credit and all group members eventually repay. Conversely, one or more group members may defect and misuse the loan to invest in too risky projects that bear higher profit than the intended one, but are also more likely to fail and there is an assumption that the exclusion from further loans is the only sanction, but no repayment claims on the part of the MFI are made. Thus, the two players involved are the MFI and the borrower. At first, game theory would discriminate women since under most cultures women are submissive to their husbands hence the decision to access credit would be limited and even if they access the finance, husbands would get part of the finance and misuse it.

The model is relevant to the topic since Wisrod (MFI) adopted group policy and people are granted loans as per group guaranteeing each other. If, for instance, one fails to pay his/her balance, the group is expected to pay the loan as they are the guarantors and this works hand in hand with the theory.

MC2 credit model earns supremacy in community created and managed micro-banks in rural development in order to keep local values and customs. Fokam (1986) came up with concept and he was encouraged by the Einstein’s formula which states that Victory over Poverty (VP) is as a product of Means (M) and the Competences (C) of the Community (C). Thus, the formula will be VP= M x C x C =MC2. In short, MC2 is a community based micro banking approach in which the neglected strive to be self-reliant mostly in order to create wealth aiming to improve their living conditions sustainably. The model was crafted with two versions, that is, the rural version, MC2 and the urban version dubbed Mutuelle Financière de Femmes Africaines(MUFFA). The latter was crafted exclusively for women because the founder believed that women in urban areas are the ones mostly affected by poverty hence MUFFA has brought about easy access to financial services so that they start generating small activities and job creation in the community. There are basically four main pillars supporting the model and they are the ones on which the model was built and they are local populations, non-governmental organizations such as Appropriate Development for Africa (ADAF), Afriland First Bank Group and national and foreign partners. The model aimed at targeting the poor so as to restore dignity and make the poor realize the importance of being masters of their destiny and also for economic and financial sustainability in the perspective of the micro bank.

The model is applicable to a greater extent in the Zimbabwean context since the level of poverty in Zimbabwe is high and women in urban areas are not the ones mostly affected by
the poverty. In Zimbabwe, Wisrod attempts to serve niche market that is granting short term loans to women who are considered to be illiterate or those who cannot access loans from formal financial institutions. Thus, the theory is being applied in Zimbabwe by the MFIs in the country. In the case of Mutare it only serves the women in town not in rural areas thereby making the theory not fully applicable.

In addition, women are said to be illiterate as compared to men or having low education levels compared to their male counterparts. Women are unable to access credit due to the fact that it is assumed that they may misuse the finance or they may use it for unproductive and unworthy investments such that repaying the credit may be difficult. Most of the women may even fail to fill-in the application forms for the loans and may find financial terms confusing. Thus, the conclusion is that women should be given short term loans and most MFI are offering short term loans in which women can manage and “also need credit to purchase ‘female assets’ such as jewellery, or redeem them from pawnbrokers and moneylenders, thereby transferring general household wealth into assets they can easily access and control, and which grow in value and provides some security” (Mayoux and Hartl 2009).

Pitt et al (2003) argued further that micro lending to women increases household decisions. This is so because women prioritize children and mostly household needs. The primary interest of women is the welfare for the families back home. Credit offered to women is significant and positive impact on children (Pitt et al 2003).

Rotating Savings and Credit Associations (ROSCAs) is a borrowing scheme from friends and neighbors to avoid the associated costs charged by moneylenders is common since the interest rates will be low and having social costs and obligations being inconsiderable. Thus, ROSCAs can give the answer to this problem, basing on pooling resources with a group of individuals, friends or neighbors. This is done in a systematic way all over the world and mostly with women in developing countries. Bouman (1977) narrates that in Ethiopia ROSCAs constituted 8–10 % of GDP in the early 1970s, and 20 % of the bank deposits in Kerala State, India. Most of them have a simple structure in which the key component is a group of individuals who know each other better, who approve to subscribe a certain amount of money that is given to one member of the group each period. For example, 10 people may agree to contribute $15 each for twenty-four months (2 years), generating a monthly pot of $150. Every month-end the group meets to collect and allocate the cash together with past recipients so that there is transparency. ROSCAs take into account the bits of surplus from the households and convert them into an amount which can be used to purchase meaningful asset or a productive project. There are no storage costs (bank charges) of funds required since money goes from one person’s hand straight to the other. As a result this makes the accessibility to credit for women feasible.

A study by Beck et al (2011), postulates that it is the presence of a taste-based rather than a statistical bias, as borrowers’ likelihood of going into arrears is independent of loan officer gender. The authors believed that having a situation by which the loan officer and the borrower are of the opposite sex, may influence the demand supply for credit, with borrowers being 11% less likely to return for a second loan. The study also suggests further, that the bias to access to credit initiates from both female and male loan officers and is more evident when the age difference is huge between the borrower and the loan officer. If financial market competition declines this also tends to affect the biasness of accessibility to credit.
The results from the study showed that the bias to access to credit was as a result of the age and gender of the loan officer.

Although this is true, given that the loan officer is rational and knowing that people are homo-economics, that is, more of everything is preferred. The loan officer will loan all the borrowers, despite their age and gender in order to attain more profit. As a result, determinant of access to credit cannot only be the age and the gender of the loan officer. Beck et al (2011) supported the study with theories that predict a taste-based bias to be stronger when the psychological costs of being biased are lower and the decision in pegging interest rates is higher.

According to Dyar et al (2006) gender inequality is spreading throughout mostly in the poorest rural areas. Women who are depressed more in rural areas are the ones who are most targeted by microfinance programs because the success rate is high with most women increasing financial stability and decision-making power. Dyar et al (2006) argued that there will be more resources for their families and development to their communities. World Bank (2006) defined gender inequality as “giving men and women different opportunities because of their gender.” The study focused on the women who were in poorest rural areas of China, in which the program could not cover all the rural areas but most. Increasing financial and lending services to the poor in order to attain market growth was one of the aims of the study. It did not focus on the determinant of accessibility of credit to gender, but it wanted to see if Chinese women with financial loans would increase their economic activity hence economic empowerment. The research did not uncover evidence that increase in microcredit will reduce inequality in China. Despite many benefits to the society, there are so many costs associated with the microfinance program in China for the poorest rural areas.

### Relationship between gender and ability to repay

D’Espallier et al (2011) analyzed the differences between gender in respect to repayment ability or rates of microfinance using dataset for 350 Microfinance Institutions in 70 countries. The study proved that more women clients are less risky than men clients, this means they are associated with lower portfolio at risk and lower rate of write offs. D’Espallier et al (2011) claimed that the findings supported the belief that women generally are a better credit risk for the lending institutions, thus, Micro Financial Institutions (MFIs) benefit more by focusing on women. Consequently, women are believed to be less creditworthy by the traditional banks, thus the demand for microcredit to women tends to be high since they cannot access credit services from the traditional banks.

The link between gender and repayment has been studied quite a number of times. However, the studies showed that the evidence amuse the account of real incidents or very limited in geographical and institutional scope. On the other hand, some of the studies proposed that women consistently surpass men in terms of repaying the loans. Armendariz and Morduch (2005) reported that in its initial phase the Grameen Bank also included men as customers. However, the bank decided to move over to a nearly full concentration on women due to repayment problems related to male clients. According to Godquin (2004) there is a positive correlation between gender and loan repayment although not significant after monitoring a number of MFIs effects. Bhatt and Tang (2002) postulated that gender is in fact not a significant determinant for loan repayment.
The study by D’Espallier et al (2011) focused on repayment and gender, the authors studied whether gender is the determinant for loan repayment. There was a positive correlation between gender and loan repayment and women clients have a lower rate of portfolio at risk compared to men clients. It did not look at the determinant of access to credit but focused on ability to pay which is one of the determinants to access to credit among different genders. The study aimed at examining factors that affect the ability of smallholders to access credit using logistic regression model within the principle component regression framework. Among the challenges being faced by the agricultural sector in Lesotho are that most smallholder farmers are stuck to traditional agriculture and they cannot move to more scientific and technology-based models due to the inability to access financial service and credit. Results revealed that the ability of smallholders to access finance is influenced by non-farm income, pension, and size of the farm, availability of farm labour, land ownership, savings and ability to repay. Most importantly, the research presented information in terms of guiding institutional arrangements needed to improve availability of credit in Lesotho.

However, the study focused on challenges being faced by farmers in accessing the credit in order to adopt scientific and technology based farming. Thus, determinant for access to credit looking at different genders is not researched on. Smallholder farmers are different from small and medium entrepreneurs although they both need financial aid (loans) and the characteristics or the behavior seems to be the same.

Relationship between access to credit and firm performance
Sirec and Mocnik (2012), explored Slovenian entrepreneurs’ personal characteristics in order to understand the existing gender gap, testing the model among small and medium enterprises owners (N = 201; 32.3% female, 67.7% male). The research focused on characteristics of entrepreneurs according to psychological and non-psychological motivation factors, that is, the former resulted in four types of Slovenian entrepreneurs while the latter was divided into human and social capital. The differences that emerged among genders were as a result of certain psychological motivation factors and social capital categories, but not human capital. In Slovenia women remain an unexploited source of entrepreneurship hence there should be a promotion of female entrepreneurship through establishment of effective mechanisms.

The purpose of the study was to determine whether the small and medium enterprises (SMEs) in South Africa are influenced by gender differences for the demand and accessibility of microcredit. It further looked at gender differences in the firm characteristics of SMEs. There is a significant gender difference in unemployment in South Africa, the studies carried out used surveys which were self-administered questionnaire and statistical analyses that included descriptive statistics, a t-test and a logistic regression. Garwe and Fatoki (2012) propounded that there is significant differences in gender found in SMEs demand for credit and some of the firm characteristics of SMEs however, insignificantly differences in accessibility. The authors argued that it is not gender discrimination but the cause of differences among gender is that the female SME owners do not apply for the financial aid (loans) as to what male does. Despite that, a similar study has been carried out, they did not look at determinants of access to credit but they looked at why there are gender differences to demand of credit and to a less extent the availability to do so. Research was carried out in an economy with increasing economic growth rate, rather than in an economy with decreasing or stagnant economic growth rate in order to show the need for the Micro Finance Institutions.
Hansen and Rand (2014) examined data from sixteen Sub-Saharan Africa countries showing how three different measures of credit constraints lead to three different estimates of differences in gender in manufacturing firms’ credit situation. In the study, perception based credit constraint measure female owned firms appear relatively more constrained than male owned firms was used. No gender effect was found using formal financial access data. Lastly, males who owned small firms appear disadvantaged; this was through the use of direct information on credit constraints. Moreover, the authors showed a strong size gradient in the gender gap for the two measures which were found significant.

The paper assessed the gender gap in the use of financial services by businesses and individuals in Sub-Saharan Africa. The results did not show evidence of gender discrimination or lower inherent demand for financial aid by firms owned by women or those with women participation. The authors argued that women are less likely to run sole traders than men, and firms with women ownership participation are smaller compared to all men businesses, although those with women are likely to innovate. The lower rate of accessing financial services by women is as a result of gender gaps in other dimensions related to the use financial services such as level of literacy, level of income and household and employment statuses.

Furthermore, Sabarwal and Terrell (2008) proposed that women entrepreneurs have a significantly smaller scale of operations compared to their counterparts, measured using sales revenues and women tend to be less efficient in terms of the total productivity although the difference may be unnoticeable. The research was carried using 2005 firm level data from 26 countries from Eastern and Central Europe. Despite that women and men entrepreneurs generate the same amount of profit per unit, women’s returns to scale are significantly larger than men’s, implying that women would gain more from increasing their scale. The authors argued that women are both capital or financially constrained and concentrated in industries with small firms hence they underperform than men. Well, thus, leaving a gap of comparing both men and women at same level which is the small scale business operation. The existing empirical literature shows an inconclusive decision on effect of gender and credit access.

**METHODOLOGY**
The methodology includes the research design, target population and sample, data collection methods and instruments, data presentation and analysis plan. An econometric model that was used to measure the significance and strength of the relationship under study was also provided and justified. Possible limitations of the research methods are also highlighted and briefly discussed.

**Empirical Model**
Field et al (2008) used the model below in his study to determine default on microcredit. The model was given as follows:

\[
DEL_i = \beta_0 + \beta_1 INT_{ij} + \beta_2 AGE_{ij} + \beta_3 AMT_{ij} + \beta_4 RPT_{ij} + \beta_5 CAT_{ij} + \mu
\]  

where for each client \( i \) and lender \( j \), \( INT_{ij} \) represents interest rate charged, \( AGE_{ij} \) is the age of each client, \( AMT_{ij} \) is the amount of loan disbursed, \( RPT_{ij} \) is the number of weeks or the duration in which the loan should have been cleared and \( CAT_{ij} \), is a dummy variable representing the category of loan granted, it takes the value “1” if the loan was given to the client as an individual and “0” if the client was a member of a group.
From Field et al (2008), the researcher modified the model by making number of loan disbursed (cr) to be the dependent variable, adding other variables which are firm age (fa), profit per day (pd), work attendance (wa) and a dummy variable gender (g). The model was then specified as:

\[
Cr = \alpha + \beta_1 D_1 + \beta_2 pd + \beta_3 Lr + \beta_4 Fa + \beta_5 ac + \beta_6 wa + \mu_i \]  

(2)

Where:
- \( Cr \) = access to credit
- \( D_1 \) = gender
- \( Fa \) = Firm age
- \( pd \) = profit per day
- \( Lr \) = Loan repayment ability
- \( ac \) = Age of the client
- \( wa \) = work attendance
- \( \mu \) = the error term

The cross sectional data which was used was collected in January 2014 through out to July 2015, covering 150 clients from various branches of Wisrod Investments. Out of 150 vendors, 110 are females and 40 are males. Most of the previous researches used not more than two explanatory variables, however, the researcher used six explanatory variables.

Gender (\( D_1 \)) is a dummy variable which takes value of either \( D_1 = 1 \) or \( D_1 = 0 \), in this case it will take the value of 1 when the client is Male and will take the value of 0 when the client is Female (F=0 and M=1). Firm age (\( Fa \)) is measured using number of years that is may take value of either 1 up to \( \infty \). Profit per day (\( pd \)) is measured using $/day, that is profit made per day in US dollars. Loan repayment ability (\( Lr \)) is a percentage of the total repayments for each loan cycle during the 18 months. Age of the client (\( ac \)) is measured using the number of years it may take any value from 1 to \( \infty \). Work attendance refers to the average number of days the client attended work during the study period in this case 18 months. The error term (\( \mu \)) is expected to follow a normal distribution pattern, and lastly, access to credit (\( Cr \)) is being measured as the total number of loans disbursed to lenders in 18 months (Jan 2014 - July 2015).

**Justification of Variables**

- **Firm age** – this variable looks at time in years in which the firm was in the field. This means time spent in the industry shows the experience earned by the firm hence a better chance to access to credit. Barnes (2001) compared those entrepreneurs who met Zambuko requirements, both those who had owned an enterprise for at least six months and those who were starting to own one on her study “Microfinance Program Clients and Impact: An Assessment of Zambuko Trust, Zimbabwe”. Thus, time is a measure of experience hence there is are underlying reasons for a positive relationship between firm age and access to credit. The firm with business experience tends to operate more efficiently hence they have a greater chance to access credit and experience also works as an assurance for the MFI as the firm is well known, therefore, the MFI will not hesitate to lend to such a firm.

- **Age of the vendor or entrepreneur** – the variable measures maturity of the clients, hence maturity is associated with wise use of finance. Maturity is thus linked with access to credit and despite gender it can also be a determinant of access to credit. Tsilikounas
(2000) in her paper “ICMC and Project Enterprise Bosnia and Herzegovina”, examined the age difference of the clients in which those who were clients had an average of 37.6 years old and on the waiting list averaged 33.8 years. This can also be a determinant of access to credit besides gender as clients or the entrepreneurs will borrow with valid reasons hence the MFI will be guaranteed their repayments.

- **Loan repayment ability** – Field and Pande (2008) used loan delinquency risk in which they suggested that repaying the loan frequently shows clients’ commitment which helps them facilitate loan repayment, and improves their trust in loan officers and their willingness to stay on track with repayments. Loan repayment ability is expressed as a percentage of how lenders repay their loans from the previous loan cycles during the 18 months. This can be used to determine the access to credit because repayment ability actually reflects one’s maximum possible loan one can acquire and be able to pay without any problems.

- **Gender** – it is a dummy variable which focuses on either a client is either male or female. It takes the value of 1 if the client is a male and 0 if the client is a female. Theories states that difference in gender also shows difference in access to credit. According to Armendariz and Morduch (2007) in “The Economics of Microfinance”, they argued that gender plays a role in determination of access to finance and that women have lower credit opportunities to men. Gender was chosen to be a determinant of credit because the informal sector which is the sector in which the country is currently operating at, to a greater extent constitutes a higher percentage of women than men hence the need to investigate if gender has a relationship with access to credit.

- **Profit per day** - this is actually a measure of firm performance and is being measured in US$ of estimated average profit per day the entrepreneur or the vendor gets. Estimated profit per day was chosen because it is the one which influence the MFI to lend as they are assured to be repaid given the estimated average profit the entrepreneur gets each and every day. Tsilikonaus (2000) compared the profits of those accessing credit and those not accessing in “ICMC and Project Enterprise Bosnia and Herzegovina”. Hence the MFI actually knows the right amount to lend which will not strain the entrepreneur as a result this acts as a determinant of credit from MFIs.

- **Work attendance** - it refers to the average number of days per month the client attended or went to work during the study period (18 months). If the client operates each and every day, this means the client is committed and the micro-credit lenders feel safe as they know that the business is operating each and every day hence their loans will be repaid on time. Thus work attendance of the client is essential in determining access to credit because MFIs are interested in making profit hence they lend to those who guarantee them repayments in which this has a relationship with work attendance.

**Research Sample**

Since the study focused on vendors, it was impossible to for the researcher to collect all the information from the whole population. As a result the researcher employed judgmental sampling and convenient sampling which are both non-probability sampling. Convenience sampling included identifying those elements by the author which gave him information based on convenience that is Wisrod’s clients. Judgmental sampling instituted author’s judgment in identifying appropriate elements.
A sample of vendors for all Wisrod’s clients was selected because it constituted all the types of vendors, that is, age-wise, level of experience and other factors. The total of the research sample was 150 clients from one MFI (Wisrod Investments). The selection was motivated by availability of required data and the need to capture the policy developments in the economy.

**Estimation Procedure**

Estimations and regressions in the study were completed using **E-VIEWS 7.0**. This statistical package gives values for the proof of the existence or non-existence of the problems of multicollinearity and heteroscedaticity. The problem of multicollinearity to econometric research is that it will be difficult to separate the effects of one explanatory variable on the dependent variable from the other. The effect can be detected by merely looking at the correlation matrix for a relationship that exceeds 0.8. If the relationship of variables exceeds 0.8, the rule of thumb is to drop one of the correlated variables in the regression.

Heteroscedasticity refers to a situation where the variances of the error terms are not equally distributed along the regression line. The problem is encountered mostly in cross-sectional models. One may perform a White’s general test in which if the value of chi-square obtained exceeds the critical chi-square value then the conclusion is that heteroscedasticity is present. E Views 7.0 gives a summary of the statistical properties of the variables known as descriptive statistics. The package through Jarque-Bera and probability values tests for normality of the variables. The probabilities should be around 0, meaning that it should be below 0.1 for the variables to be normal.

This package also provides the Coefficient of Determination ($R^2$) and the P-value, which are important statistic values in the analysis of results. The $R^2$ value explains the proportion of variability of the dependent variable (growth) that can be attributed to changes in the independent variables and $R^2 > 0.6$. It explains how well the independent variables explain the dependent variable in the multiple regression models, that is, goodness of fit. The P-value indicates the alpha ($\alpha$) level at which our model is statistically significant, thus measuring the significance of the explanatory variables in explaining variations in dependent variable.

Ordinary Least Squares was the estimation method that was used in this research since the model is a multiple linear regression model. Gujarati (2004) propounded that simple classical linear regression model in its general form is the universal set which contains multiple regression as complementary and can be presented as follows:

$$ Y_i = \beta_1 + \beta_2 X_i + \epsilon_i \tag{3} $$

Where $Y$ as always is the dependent and $X_1 + X_2 + X_3 + \ldots + X_k$ are the independent variables.

**Data Collection Methods and Research Instruments**

The study’s secondary data was collected from January 2014 through out to July 2015 (18 months) in order to meet research objectives. The data has been available since the beginning of the year of 2014 and the researcher had to go to the MFI and liaise with the authority of the firm in order to get access to the information since it is not easy for the firm to disclose such information. Quantitative and statistical information were extracted from online banking system sources such as MAMBU which is used by the micro finance (Wisrod Investments), Ministry of Finance and Economic Development.
Descriptive Statistics
Table 4.1 Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>CR</th>
<th>AC</th>
<th>D1</th>
<th>FA</th>
<th>LR</th>
<th>PD</th>
<th>WA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>12.8333</td>
<td>35.8533</td>
<td>0.266667</td>
<td>8.634053</td>
<td>0.665377</td>
<td>9.450000</td>
<td>17.18867</td>
</tr>
<tr>
<td>Median</td>
<td>12.0000</td>
<td>36.0000</td>
<td>0.000000</td>
<td>8.300000</td>
<td>0.711277</td>
<td>9.000000</td>
<td>17.000000</td>
</tr>
<tr>
<td>Maximum</td>
<td>29.0000</td>
<td>59.0000</td>
<td>1.000000</td>
<td>19.000000</td>
<td>0.994816</td>
<td>50.000000</td>
<td>31.000000</td>
</tr>
<tr>
<td>Minimum</td>
<td>2.000000</td>
<td>22.000000</td>
<td>0.000000</td>
<td>1.700000</td>
<td>0.200000</td>
<td>2.000000</td>
<td>3.000000</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>5.824522</td>
<td>6.219030</td>
<td>0.443698</td>
<td>3.495675</td>
<td>0.229018</td>
<td>5.515615</td>
<td>7.578994</td>
</tr>
</tbody>
</table>

Source: E-VIEWS 7.0

The access to credit (cr) which is being measured by number of loans disbursed during the study period had an average of 12.833333, while age of the client (ac) had an average of 35.85333 showing that majority of Wisrod clients are above the life expectancy in Zimbabwe. Firm-age (fa) of the Wisrod’s clients had an average of 8.634053 whilst the profit per day (pd) measured in US$ had an average of 9.45. Work attendance (wa) had an average of 17.18867 showing that most of the clients do not work all the days but some may rest some of the days within a month and loan repayment ability (lr) had an average of 0.6653772 showing that Wisrod has almost two-thirds of their clients being able to repay the loans. And lastly gender being represented by d1 had an average of 0.266667.

Standard deviation which shows or which reflects variations from the mean for each variable, large variations from the mean are that of work attendance which has a standard deviation of 7.578994 and there are least variations from the mean shown by loan repayment which is denoted LR and has the standard deviation is 0.229018.

Under the normal distribution gender (d1), firm age (fa), age of the client (ac), work attendance (wa), profit per day (pd) and access to credit (cr) are positively skewed thus they are biased to the right with profit per day (pd) and gender (d1) greatly biased to the right.
However, the loan repayment ability’s (Ir) distribution was biased to the left side of the normal distribution that is negatively skewed.

**Diagnostic Tests** to improve robustness of the results

**Heteroscedasticity**

This is a problem which arise when the mean of the variances of the variables are not equally distributed along the regression line. The White test for heteroscedasticity including white cross terms was carried out with H₀ that there are constant variance (homoscedasticity) and H₁ the otherwise (heteroscedasticity). The results obtained are shown by the table below;

**Table 4.2 White Test**

<table>
<thead>
<tr>
<th></th>
<th>F-statistic</th>
<th>Prob. F(26,123)</th>
<th>0.0416</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obs*R-squared</td>
<td>39.35711</td>
<td>Prob. Chi-Square(26)</td>
<td>0.0551</td>
</tr>
</tbody>
</table>

Source: E-VIEWS 7.0

The results obtained show absence of heteroscedasticity meaning that the researchers are failing to reject the null hypothesis at 5% significance level with 5.51%. Furthermore, when dealing with cross-sectional data, one cannot do away with heteroscedasticity, however eliminating it is very difficult especially when there are dummy variables in the model.

**Multicollinearity**

Multicollinearity is a situation in which one or more of the explanatory variables are perfectly correlated, that is, they have a perfect or exact linear relationship. We cannot do away with multicollinearity but there are acceptable limits, that is it should be below 0.8 as a result correlation matrix is used to test whether the reaction is between the acceptable limits or not. This can be shown in the table below.

**Table 4.3 Correlation Matrix**

<table>
<thead>
<tr>
<th></th>
<th>AC</th>
<th>D1</th>
<th>FA</th>
<th>LR</th>
<th>PD</th>
<th>WA</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>1.000000</td>
<td>-0.051401</td>
<td>0.556225</td>
<td>0.214263</td>
<td>0.348153</td>
<td>0.167415</td>
</tr>
<tr>
<td>D1</td>
<td>-0.051401</td>
<td>1.000000</td>
<td>-0.068118</td>
<td>0.074323</td>
<td>0.005211</td>
<td>0.146398</td>
</tr>
<tr>
<td>FA</td>
<td>0.556225</td>
<td>-0.068118</td>
<td>1.000000</td>
<td>0.105152</td>
<td>0.301638</td>
<td>0.067526</td>
</tr>
<tr>
<td>LR</td>
<td>0.214263</td>
<td>0.074323</td>
<td>0.105152</td>
<td>1.000000</td>
<td>0.451210</td>
<td>0.791494</td>
</tr>
<tr>
<td>PD</td>
<td>0.348153</td>
<td>0.005211</td>
<td>0.301638</td>
<td>0.451210</td>
<td>1.000000</td>
<td>0.452928</td>
</tr>
<tr>
<td>WA</td>
<td>0.167415</td>
<td>0.146398</td>
<td>0.067526</td>
<td>0.791494</td>
<td>0.452928</td>
<td>1.000000</td>
</tr>
</tbody>
</table>

Source: E-VIEWS 7.0

Work attendance and loan repayment ability are correlated but are between the accepted limit which is below 0.8, 0.791494.

**Normality**

From the descriptive statistics results obtained, the Jacque Bera is used to test for normality for each variable. The probability for each variable should be around zero meaning it should be less than 0.1 for the variables to be normal as shown by the **Table 4.1** above. The
variables have all probabilities less than 0.1 showing normality of variables except for firm age which is slightly above benchmark showing that it is not normally distributed.

Regression Model Results
Estimation using E Views 7.0 obtained a summary of results which is presented in the table below;

Table 4.4 Regression Model Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>3.340852</td>
<td>1.749579</td>
<td>1.909518</td>
<td>0.0582</td>
</tr>
<tr>
<td>D1</td>
<td>-0.765430</td>
<td>0.639245</td>
<td>-1.197397</td>
<td>0.2331</td>
</tr>
<tr>
<td>FA</td>
<td>-0.211276</td>
<td>0.097487</td>
<td>-2.167222</td>
<td>0.0319</td>
</tr>
<tr>
<td>LR</td>
<td>3.698032</td>
<td>2.032548</td>
<td>1.819407</td>
<td>0.0709</td>
</tr>
<tr>
<td>PD</td>
<td>0.115032</td>
<td>0.061099</td>
<td>1.882697</td>
<td>0.0618</td>
</tr>
<tr>
<td>WA</td>
<td>0.504439</td>
<td>0.062025</td>
<td>8.132839</td>
<td>0.0000</td>
</tr>
<tr>
<td>AC</td>
<td>-0.019454</td>
<td>0.055721</td>
<td>-0.349141</td>
<td>0.7275</td>
</tr>
</tbody>
</table>

R-squared: 0.672288
Adjusted R-squared: 0.658538
Durbin-Watson stat: 1.195333
Prob(F-statistic): 0.000000
F-statistic: 48.89316

Source: E-VIEWS 7.0

Thus the linear model will be estimated as follows:
\[ Cr = 3.340852 -0.7654295D1 + 0.1150315pd + 3.698032lr - 0.2112756fa - 0.0194544ac + 0.504439wa \]

Where;
- cr - access to credit
- D1 - gender
- fa - firm age
- pd - profit per day
- lr - loan repayment ability
- ac - age of the client
- wa - work attendance

Model Specification
Using the R-Squared, the model is significant in explaining variations of the dependent variable as the R-squared is 0.6723 reflecting that 67.2% variations in Access to credit are explained by the independent variables and 32.8% of the variations are explained by the error term and other variables included in the model.

The model is significant in explaining the variations in access to credit as the probability value of the F statistic is 0.000000 and it is less than 0.01 meaning that the model is significant at 1% level of significance and we have 99% confidence interval that the model is correctly specified.
Interpretation and Discussion of Results
The section focuses on interpretation of results obtained after regression.

Firm Age (fa)
The variable is significant in explaining variations in access to credit as it has a P-value of 0.0319 meaning that it is statistically significant at 5% significance level. The variable is statistically significantly different from zero, thereby we reject Null Hypothesis that the coefficient of $fa$ is equal to zero. The coefficient of $fa$ -0.2112756 shows that the firm age has a negative relationship with access to credit. This means that a year increase in ownership of the firm will result in a 0.2112756 negative variation in number of loans disbursed. According to the research, firm age is seen to have a negative relationship in which according to theory, firm age has a positive relationship with access to credit. Theory states that firm age shows experience in the business environment hence there is a greater chance of accessing credit.

Gender (D1)
Gender is insignificant in explaining variations in access to credit. It is statistically insignificant as it has a P-value of 0.2331. The variable is statistically insignificantly different from zero, therefore, there is no enough evidence to reject the Null Hypothesis that the coefficient of $D1$ is equal to zero. The coefficient of $D1$ has a negative relationship which is -0.765430. This means if a client is male, he gets 0.765430 less of loans disbursed than otherwise (female). This means that gender has no effect on accessibility to credit. Theory states that women have low opportunities in accessing credit from microfinance, but the study has shown that women actually have a better chance of accessing credit from MFIs. In context to the Zimbabwean economy this is however true because the economy is operating largely on informal sector and women occupy a greater percentage of the informal sector. As a result these are the people which the MFIs are targeting since they have a better activity in the economy compared to men.

Profit per day (pd)
The results showed that the variable $pd$ is statistically significant in explaining variations in access to credit at 10% significance level since it has a P-value of 0.0618. The variable is statistically significantly different from zero thereby rejecting Null Hypothesis that the coefficient of $pd$ is not equal to zero. The coefficient of $pd$ is 0.115032. A dollar increase in profit per day obtained by a client will result in 0.115032 loans disbursed. This shows a positive relationship between access to credit and profit per day made by the clients. Increase in profit per day shows improvement in performance of the firm as a result there is bound to be a positive relationship as this will persuade MFIs to lend to such entrepreneurs. Theory states that as profit per day increases there is a greater chance of accessing credit. Zimbabwe is an economy which is crippled and with high uncertainty, as a result MFIs would only lend to those with ability to repay after looking at the profit made per day and potential of profit to increase. Hence there is a positive link between access to credit and profit per day made by the client.

Loan Repayment Ability (lr)
From the results obtained, loan repayment ability is statistically significant in explaining variations in the dependent variable at 10% significance level with a P-value of 0.0709. Therefore, this means that the variable is statistically significantly different from zero. We reject the Null Hypothesis that the coefficient of $lr$ is different zero. The variable has a coefficient of 3.698032. There is a positive relationship between access to credit and loan
A 1% increase in lenders repaying their previous debt will lead to 3,698,032 loans disbursed by the MIFs. Most MIFs are into making profit as a result they do not tolerate defaults or any possibility of one. Thus MIFs will consider lending to enterprises with high loan repayment ability since in Zimbabwe there is low rate of investment. As suggested by theories that loan repayment ability has a positive relationship with access to credit

**Work Attendance (wa)**

Work attendance refers to the number of days per month one was committed, the variable is statistically significant in explaining variations in access to credit at 1% significance level with a P-value of 0.0000. Thus, the variable is said to be statistically significantly different from zero meaning that the coefficient of wa is not equal to zero. We accept the Alternative Hypothesis that the coefficient of wa is not equal to zero and it is 0.50442. Therefore, an increase of attending work by one day will result in 0.50442 increase in loans disbursed by the MFI. This also shows a positive relationship between access to credit and work attendance.

Work attendance is related to commitment, thus MIFs in Zimbabwe will only lend to those committed. There is an anticipation of a positive relationship since commitment will result in better opportunities to access credit from MIFs. According to theory there is a positive relationship between access to credit and work attendance which is also in accordance with the findings of the research.

**Age of the client (ac)**

Age of the client has proved to be statistically insignificant in explaining variations in access to credit. The variable has a P-value of 0.7275 showing that the variable is statistically insignificantly different from zero. Therefore, there is no enough evidence to reject the Null Hypothesis that the coefficient of ac is equal to zero in which the coefficient is -0.019454. This shows a negative relationship between the age of the client and access to credit and the variable is insignificant.

**Summary of findings and recommendations**

The main objective of the study was to find if gender is the main and if it really determines the accessibility of credit in Micro-finance Institutions in Zimbabwe using the cross sectional data from the Micro-Finance for the period covering from January 2014 to July 2015. From the results obtained using statistical package, E-views 7 to estimate the six explanatory variables, gender ($D_1$), firm age ($Fa$), profit per day ($pd$), loan repayment ability ($Lr$), work attendance ($wa$) and age of the client ($ac$), gender and age of the client were statistically insignificant in explaining variations in accessibility to credit and loan repayment ability, firm age and profit per day were statistically significant in explaining variations in accessibility to credit. As a result, the researchers may conclude that accessibility of credit from Micro-Finance Institution has nothing to do with gender clearly showing that there are actually other factors which determine accessibility to credit. This means we reject the null hypothesis that gender affects accessibility to credit.

Gender balance has been an issue in Zimbabwe from late 1990s and has raised questions whether this may assist in economic growth and increase economic activity in the Zimbabwean economy. The government may do the following in order to achieve some of the macro-economic objectives:

- The study has shown that gender does not affect accessibility of credit, thus the policy makers should be interested in implementing policies which actually include equal women participation. The government may increase economic growth through lending
money to the private sector in which inclusion of women on such a program will benefit the economy as there will be increased economic activity than lending to male counterparts.

- Furthermore, there tends to be a link between loan repayment ability and gender and from the study, it has proven that women have better repayment ability than their male counterparts. Thus, the state should implement policies which actually uplift women rather launching campaigns after campaigns. Currently, the Zimbabwean economy is operating greatly on the informal sector which is mostly constituted by women. Hence there should be a policy which increases lending to women who are in the informal sector. Most of the developing countries are flooded with the MFIs, hence the government should use these MFIs as their way out in poverty and underdevelopment and increase economic growth thereby attaining economic development.

- Most of the firms in the informal sector are small firms. The government should implement a policy which protects the small firms from international conditions. Thus, the government may impose trade barriers in order to boost small firms within. As they will be protecting the small firms, they may also assist by providing capital through loans at lower interest rates such that the economic growth may increase.

**Area for further study**

From the study, the researcher may suggest that there is need to consider economic environment for accessibility of the credit. The study did not consider economic environment which may also determine who gets access to credit and why, it also did not include size of the firm which may also show the loan repayment ability of the client but looked at the age of the firm. Exclusion of social factors such as corruption may also affect the accessibility of the credit as the developing economies may be affected by corruption hence there is difference between the developing and the developed economies when it comes to accessibility to credit. Level of education may affect the accessibility to credit as it helps in the wise use of the finance in Zimbabwe.

**Conclusions**

The study's objectives of finding out if gender affects credit accessibility were achieved using the economic model. Gender is not a determinant of credit from MFIs in Zimbabwe, however, there are other factors which actually determine accessibility to credit, that is, repayment ability, age of the client which reflects maturity and firm age may determine the credit accessibility. Gender is independent and does not determine credit acquisition from the MFIs.

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