

The Oliver Twists among women microcredit borrowers, intra-household decision making and power play in male dominant households in Ghana

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Abstract

The thrust of this study was to investigate the factors that motivate women microcredit borrowers in the Upper East Region of Ghana to take multiple loans from microfinance institutions. The study employed the double hurdle estimation method and the data was collected from 500 women engaged in agro-processing of whom 250 were beneficiaries of multiple loans and 250 non-beneficiaries.

The results showed that the set of factors that impacted the decision to borrow are among the factors that impacted the decision to go for multiple loans from microfinance institutions though the directions of the impact were found to be different for the two decisions. Thus, the number of people in household and number of friends with loans have positive impact on the decision to borrow; however, these variables have negative impact on the decision to go for multiple loans. It was also found that women who relinquished their loans to their spouses and women who took permission from their spouses before they could borrow had less multiple loans. Again, respondents who were living below the poverty line (poor) had less multiple loans than their counterparts who were not poor.

The conclusion drawn is that, intra-household decision making and power play in male dominant households prevent women from taking multiple loans no matter how beneficial these loans may be for the women and their households. In view of this, it is recommended that gender mainstreaming should be included in the services of microfinance institutions to encourage women participation in household decision making. Again microfinance institutions should devote a percentage of their loan portfolio to targeting the poor.

Keywords: Oliver Twists, Women, microcredit, power-play, double-hurdle and Ghana

1. Introduction

It has been argued that, the theory underlying the promotion of microfinance is due to market failure. Accordingly, the reason lies with the reluctance of many commercial financial intermediaries, such as banks, to advance relatively small loans to large numbers of poor people. This is because poor people are often deemed as unbankable (Bowles et al., 2006; Khan, 2008).

In the light of this, poor people frequently rely on friends or family or private money lenders as their principal sources of credit, with the private money lenders usually charging usury rates. However, the inability of both the formal (banks) and informal (money lenders) private commercial sector to meet the financial demands of poor people, has beckoned other microfinance providers such as NGOs into the microfinance industry (Khan, 2008).

The call by The 1997 Microfinance Summit for the mobilization of US\$20 billion over a ten year period to support microfinance also enhanced the growth of the microfinance industry. Therefore from 2004 to 2008 microfinance enjoyed unprecedented growth in emerging markets. For instance, at the end of 2009, the Microfinance Information Exchange was tracking 1,084 microfinance institutions (MFIs) that were serving 74 million borrowers (\$38 billion in outstanding loans) and 67 million savers (\$23 billion in deposits) (Microfinance Information Exchange, Inc., 2009).

A plethora of success stories on microfinance in the extant literatures have given hope to many poor people that access to microfinance can catapult them out of poverty. For instance, Remenyi and Quinones (2000); Morduch and Haley (2002); Khandker (2005); Gobezie and Garber (2007); Imai and Azam (2010); Imai, Arun and Annim

(2010); Ghalib, Malki and Imai (2011); Annim and Alnaa (2013) and more other studies have shown positive impact of microfinance on poverty reduction.

The above antecedents created fertile grounds for the microfinance industry in developing countries including Ghana, to blossom. For instance, in sub-Saharan Africa (SSA), as at 2007, Ghana was ranked the highest recipient (about US\$186m) of development partner's donor funding into microfinance (CGAP, 2008). Thus, many poor people now have access to microfinance institutions loans with several people borrowing multiple times from these microfinance institutions.

Faruqee and Khalily (2011) described a household and an individual with more than one membership of a microfinance institution as household overlapping and membership overlapping respectively. This suggests that, these overlapping clients are multiple borrowers. It has often been asserted that multiple borrowers simply borrow from Paul to pay Peter. This has arisen because of intense competition among fast growing microfinance institutions who engage in reckless lending without suitable assessment of client's credit absorption capacities and multiple memberships leading to over-indebtedness and defaults (Faruqee & Khalily, 2011).

Armendáriz de Aghion and Morduch (2005) stated that there is no well-known study that robustly shows any strong impacts of microfinance programmes on overlapping and that defaulting of loan is a cause of multiple borrowing. They also asserted that, Bolivia had suffered from overlapping problems because of intense competition among MFIs in the 1990s. Vogelgesang (2003) also found that Bolivia had suffered from overlapping problems coupled with economic crisis during 1996-2000 and that the quality of portfolios held by microfinance institutions deteriorated.

However, Mukherjee (2010) estimates that 10.28% of all the clients in the study sample are multiple borrowers. The major finding of this study is that, multiple borrowers have a lower arrears rate than their single borrowing peers in the same branches and lower than the rate of the overall sample. Majority of the multiple borrowers said they used the second loan for investment purposes and none reported repayment difficulties. Krishnaswamy (2007) examined the degree of multiple borrowing between microfinance institutions clients in a competitive state in India. A higher percentage of multiple borrowers said that gathering more credit was completely their voluntary decision and that, they used the second loan for investment purposes. The study also found equal or better repayment records of the multiple borrowers than that of single borrowers.

In a study of rural women engaged in agro-processing in the Upper East Region of Ghana, Alnaa (2013) found that respondents who receive loans at least three and four times, have higher weekly consumption expenditure on basic needs than those who receive loans at most two and three times respectively. The study concluded that multiple loans from microfinance institutions contribute positively to reducing household poverty among rural women engaged in agro-processing in that Region.

For Faruqee and Khalily (2011), a number of factors account for this phenomena of multiple borrowing among clients; for supporting growth of a small business, client's may require larger loans than that offered by a single microfinance providers; clients may need supplementary microloans to cope with any adverse shocks or for consumption in crisis period; in case of default, the client can take out a second loan for the repayment purposes; among others.

In a survey of rural women engaged in agro-processing in the Upper East Region of Ghana in 2011, out of the 250 beneficiaries of microfinance institution loans, 198 of them were multiple borrowers. One of the beneficiaries had actually borrowed 20 times over a period of 10 years, with a total amount of 2,700 Ghana Cedis borrowed over the ten year period.

The Upper East Region is the second poorest region in Ghana with about 70% of the population being poor (Ghana Statistical Service, 2008). The region has over the years experienced the activities of microfinance institutions. These institutions targeted rural women who are engaged in various economic activities with the aim of helping them with loans and other financial services to boost their businesses.

The Region is basically a patriarchal society, under such circumstances it can be inferred that women would have limited say on what goes around them. However this can be said to be dependent on power brokerage and the resourcefulness of the women. Therefore, it is not uncommon to find a considerable number of women who are resourceful and / or assertive. Current trends of community education and sensitisation on gender issues have further enlightened most women and men alike in the Region thereby giving these women much more socio-

economic leverage. Trends in increasing single motherhood and female headed households in this Region indicate stresses on women and the need for them to engage in various livelihood activities in order to provide for the needs of their children and other dependants.

Thus, it is common that most women would take advantage of microfinance institutions activities by signing up their programmes and as such benefit from the loans/microcredits provided by these institutions. These women over the years received multiple loans from various microfinance institutions which studies have shown that these multiple loans have helped the women reduce household poverty (Alnaa, 2013). However, it is still difficult to tell what factors motivate these women to take on multiple loans as there is no independent study which has explored this in the region. It is therefore, important to find out why some rural women choose to borrow microcredit from microfinance institutions, while others choose not to borrow at all. Even more important it is to understand why borrowers play the proverbial Oliver Twist. Are there socio-cultural variables to be identified and addressed?

2.0 Material and methods

2.1 Data

The study employed descriptive survey. The data for the study was obtained from both beneficiaries (treatment group) and non-beneficiaries (control group) of MFI loans in 2011 through a random survey of 500 women engaged in agro-processing in the Upper East Region of Ghana, of whom 250 were beneficiaries of microfinance while 250 were non-beneficiaries. Interview schedules were administered to the randomly selected respondents in a face-to-face interview. The questions included in the interview related to access to microfinance, initial savings, consumption expenditure on basic needs, the number of times one has taken loans from microfinance institution(s), the number of business activities the woman engages in at the moment, the value of output, value of assets and several other socio-demographic characteristics.

2.2 Theoretical model specifications

Following Teklewold, Dadi, Yami and Dana (2006), individual agro-processors are assumed to maximize expected utility according to a von Neumann and Morgenstern (1944) utility function defined over wealth (W). When faced with a choice between two alternative decisions, the i^{th} agro-processor compares the expected utility with the decision to borrow from a microfinance institution, $EU_{bi}(W)$ to the expected utility with the decision not to borrow, $EU_{ni}(W)$. While direct measurement of individual agro-processor's perceptions and risk attitudes on borrowing are not available, inferences can be made for variables that influence the distribution and expected utility evaluation of borrowing. These variables are used as a vector 'X' of attributes of the choices made by agro-processor 'i' and ε_i is a random disturbance that arises from unobserved variation in preferences, attributes of the alternatives, and errors in optimization. Given the usual discrete choice analysis and limiting the amount of non-linearity in the likelihood function, $EU_{bi}(W)$ and $EU_{ni}(W)$ may be written as:

$$EU_{bi}(W) = \alpha_b X_i + \varepsilon_{bi} \quad (1)$$

$$EU_{ni}(W) = \alpha_n X_i + \varepsilon_{ni} \quad (2)$$

The difference in expected utility may then be written

$$\begin{aligned} EU_{bi}(W) - EU_{ni}(W) &= (\alpha_b X_i + \varepsilon_{bi}) - (\alpha_n X_i + \varepsilon_{ni}) \\ &= (\alpha_b - \alpha_n) X_i + (\varepsilon_{bi} - \varepsilon_{ni}) \\ &= \alpha X_i + \varepsilon_i \end{aligned} \quad (3)$$

A preference for microcredit (to borrow) will result if $EU_{bi}(W) > EU_{ni}(W) > 0$; whereas, a preference for non-borrowing will be revealed if $EU_{bi}(W) < EU_{ni}(W) < 0$.

The observed choice of borrowing or non-borrowing is hypothesized to be the end result of socio-economic characteristics of the agro-processors and a complex set of inter-decision preference comparisons made by agro-processors. The empirical analysis permits the investigation of the decision whether or not to borrow from a microfinance institution and the conditional number of times one borrows if the initial decision to borrow was made. Several hypotheses can be derived on these two sets of decision - factors that affect the decision to borrow or not and factors that affect intensity of borrowing or the number of times one borrows.

2.3 Econometric specification of double hurdle model

A feature of binary or censored data models is that the process, which results in non-borrowing, is assumed to be the same as that which determines multiple borrowing or multiple loans (the intensity of borrowing). Assuming a given agro-processor's characteristic is known to have a positive effect on the intensity of borrowing, then a very high value of this characteristic would likely lead to the prediction of borrowing for such agro-processor. Though, such assumptions may turn out to hold, there is no reason to expect this a priori. A reason why such an assumption might fail is that, there may exist a proportion of the population of agro-processors who would out of principle, never borrow under any circumstances (Teklewold, Dadi, Yami & Dana, 2006).

In principle, the decisions on whether to borrow and how many times to borrowing can be made jointly or separately (Berhanu & Swinton, 2003). The Tobit model is used to analyse under the assumption that the two decisions are affected by the same set of factors (Greene, 1993). In the double-hurdle model, on the other hand, both hurdles have equations associated with them, incorporating the effects of agro-processor's characteristics and other factors. Such explanatory variables may appear in both equations or in either of one. Most importantly, a variable appearing in both equations may have opposite effects in the two equations. The double-hurdle model, originally due to Cragg (1971), has been extensively applied in several studies such as Burton et al. (1996) and Newman et al. (2001). However, this model has been rarely used in the area of microcredit borrowing.

The double-hurdle model is a parametric generalization of the Tobit model, in which two separate stochastic processes determine the decision to borrow and the number of times one borrows. The double-hurdle model has a decision to borrow (D) equation:

$$\left. \begin{aligned} D_i &= 1 \text{ if } D_i^* > 0 \text{ and } 0 \text{ if } D_i^* \leq 0 \\ D_i &= \alpha' Z_i + U_i \end{aligned} \right\} \quad (4)$$

D^* being a latent variable that takes the value 1 if the individual agro-processor borrows and zero if otherwise, Z is a vector of household characteristics and α is a vector of parameters. The multiple borrowing or number of times one borrows (intensity of borrowing) (Y) has an equation of the following:

$$\left. \begin{aligned} Y_i &= Y^* > 0 \text{ and } D_i^* > 0 \\ Y_i &= 0 \text{ otherwise} \\ Y_i^* &= \beta' X_i + V_i \end{aligned} \right\} \quad (5)$$

Where Y_i is the observed answer to the number of times of borrowing (intensity), X is a vector of individual's characteristics and β is a vector of parameters

The error terms U_i and V_i are distributed as follows:

$$\begin{cases} U_i \sim N(0,1) \\ V_i \sim N(0, \sigma^2) \end{cases} \quad (6)$$

The log-likelihood function for the double-hurdle model is:

$$\log L = \sum_0 \ln \left[1 - \Phi \left(\alpha Z_i' \right) \left(\frac{\beta X_i'}{\sigma} \right) \right] + \sum_+ \ln \left[\Phi \left(\alpha Z_i' \right) \frac{1}{\sigma} \phi \left(\frac{Y_i - \beta X_i'}{\sigma} \right) \right] \quad (7)$$

Under the assumption of independency between the error terms V_i and U_i , the model (as originally proposed by Cragg, (1971)) is equivalent to a combination of a truncated regression model and a univariate probit model. The Tobit model, as presented above arises if

$$\lambda = \frac{\beta}{\sigma} \text{ and } X = Z.$$

A simple test for the double-hurdle model against the Tobit model can be used. It can be shown that the Tobit log-likelihood is the sum of the log-likelihood of the truncated and the probit models. Therefore, one simply has to estimate the truncated regression model, the Tobit model and the probit model separately and use a likelihood ratio (LR) test. The LR-statistics can be computed using (Greene, 1993):

$$\Gamma = -2 \left[\ln L_T - (\ln L_{TR}) \right] \sim \chi_k^2 \quad (8)$$

Where L_T =likelihood for the Tobit model; L_p = likelihood for the probit model; L_{TR} = likelihood for the truncated regression model; and k is the number of independent variables in the equations.

If the test hypothesis is written as $H_0 : \lambda = \frac{\beta}{\sigma}$ and $\lambda \neq \frac{\beta}{\sigma}$. H_0 will be rejected on a pre-specified significance level, if

$$\Gamma > \chi_k^2$$

2.4 Empirical double hurdle model

$$\begin{aligned} mfmny = & \text{age} + \text{depend} + \text{lonsours} + \text{frnsours} + \text{output} + \text{oldsav} + \text{numacty} + \\ & \text{amtprof} + \text{amtsav} + \text{assets} + \text{tkmony} + \text{eff}5 + \text{poor} + \varepsilon \end{aligned} \quad (9)$$

Where $mfmny$ is the number of times an individual has borrowed from a microfinance institution,(intensity of borrowing) and has the features of D_i and Y_i^* while ε is decomposable into U_i and V_i as in equations (4) and (5) respectively with independent variables appearing in both equations.

3.0 Results and Discussion

Table 1: Descriptive Statistics of Variables

Variables	Description	Obs.	Mean	S.Deviation
Poor	Poor (1/0)	437	0.212	0.409
age	Age in years	437	39.951	11.659
mfmany	Number of times received loans	437	1.375	2.267
depend	Dependants in household	437	3.100	2.121
frnsours	Number of friends with loans	437	2.995	4.547
hhppl	Number of people in household	437	7.032	7.032
lonsours	Number of borrowing sources	437	1.062	0.381
numacty	Number of economic activities	437	1.245	1.123
oldsav	Initial savings	457	98.99	133.70
assets	Value of physical assets	437	442.7	1040.8
Output	Value of output	435	410.2	936
Amtsav	Current savings	437	147	336
tkmony	Spouse or a male takes portion of loan(1/0)	436	0.19	0.40
permhhh	Needs permission from spouse to borrow(1/0)	436	0.60	0.517

Source: Field Survey data, (2011)

Table 1, shows the explanation and descriptive statistics of the data used for the analysis. **Age, depend, edulev, numacty, lonsours, frnsours** and **hhppl** are a set of household characteristics. Where **age** is number of years of the respondent, the mean age is given as 39.95 or approximately 40 years. About 94% of the respondents are within the age brackets of 20-60 years and 69% within the age group of 20-40 years. This suggests that majority of the respondents fall within the economically active group. The number of dependents in the respondent's household is denoted by **depend** with a mean number of three (3) dependents. Also, **hhppl** denotes the number of people in the respondent's household with a mean of about 7 people in each household. The variable **frnsours** denotes the number of friends of the respondent who have borrowed from an MFI. This measures the breadth of financial services in the community. The number of people in rural areas particularly the poor who are served by MFIs determine the breadth of financial services and as such the level of demand for the financial services.

Also, **lonsours** measures the number of sources of borrowing that the respondent can actually borrow from within the community when in need of a loan. These sources include both formal (MFIs and Banks) and informal (friends, relatives and money lenders) institutions. Thus **lonsours** determines the number of these formal and informal financial institutions that the respondent can actually and confidently go to for a loan when in need. The value of assets owned by the respondents measured in Cedis is denoted by **assets**. The variable **oldsav** measures the initial financial resources or savings of the respondent before receipt of loan from a MFI or start of agro-processing business.

Again, the variable **numacty** denotes the number of income generating activities that the respondent engages in as at the time of the study. The variable **tkmony**, is a binary variable and takes the value 1 if the spouse or any male member of the household takes a portion of the loan gotten from a microfinance institution, otherwise 0. Due to male dominance, it is believed that many women who access microcredit relinquish the loans to their spouses or fathers-in-law or sons (Goetz & Gupta, 1996; Kabeer, 1998).

The variable **permhhh** is constructed as a binary variable. It takes the value 1 if the respondent must seek permission from her husband, household head or any male member in the household before she accesses a MFI loan, and 0 if otherwise. The mean of **permhhh** is given as 0.60, implying that about 60% of the respondents had to seek permission from their husband or a male member of the household before accessing a loan from an MFI. **permhhh** and **tkmony** measure intra-household decision making and power play in the household. **Output** is measured as value added valued in Cedis.

Also the variable **poor** measure the poverty status of respondents. If a respondent lives below the calculated weekly poverty line of 14.41, then she is deemed as poor and takes the value of 1 and 0 if otherwise.

Table 2 shows the results of the double hurdle estimation of intensity of borrowing (multiple borrowing). Column A shows the results of the first hurdle; a logit estimation of the decision to borrow or not, while column B indicates the results of the second hurdle; estimation of the number times one borrows after the first decision has been taken to sign up microfinance programmes.

From column A of Table 2, the variables; number of friends with loans, the value of output, current savings, value of physical assets, spouse or a male taking a portion of loan, number of people in household and poor respondents are all statistically significant in determining the probability of an agro-processor borrowing from a microfinance institution.

Table 2: Results of Double Hurdle Estimation intensity of borrowing

Variables	(A) Logit	(B) Poisson
age	0.0064 (0.0133)	-0.0095*** (0.0003)
Dependants in household	0.119 (0.0938)	0.0401*** (0.0012)
Number of borrowing sources	-0.607 (0.402)	0.163*** (0.0078)
Number of friends with loans	0.382*** (0.0725)	-0.0093*** (0.0007)
Value of output	-0.0014*** (0.0004)	0.0003*** (0.00001)
Initial savings	0.000183 (0.00121)	0.0007*** (0.00002)
Number of economic activities	0.0586 (0.355)	-0.158*** (0.0060)
Current savings	0.0046*** (0.0015)	-0.0002*** (0.00001)
Value of physical assets	0.0009** (0.0005)	-2.33e-06 (1.58e-06)
Spouse or a male takes portion of loan(1/0)	1.525*** (0.400)	-0.266*** (0.00673)
Needs permission from spouse to borrow(1/0)	0.145 (0.301)	-0.162*** (0.00644)
Number of people in household	0.156* (0.089)	-0.054*** (.00159)
Poor(1/0)	0.868* (0.525)	-0.459*** (0.0138)
Constant	-3.141*** (1.067)	7.041*** (0.0201)
Observations	435	435

Source: computed from field survey data, (2011)

Note: Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The coefficient of number of friends with loans is 0.382 and is significant at 1%. Thus an increase in the number of friends with loans increases the probability of an agro-processor also taking a loan from a microfinance institution. Again an increase in current savings, value of physical assets and number of people in the respondent's household, increase the probability of the respondent borrowing from a microfinance institution and their coefficients are given as 0.046, 0.0009 and 0.156 respectively. However, an increase in the value of output decreases the probability of the respondent borrowing from a microfinance institution. This may be due to the fact that, as the value of output increases the respondents may be making enough profit from their sales and may therefore not need to borrow from a microfinance institution.

The results again show that respondents who relinquish a portion of a loan to their spouse or any male member of the household are more likely to borrow from a microfinance institution than their counterparts who do not relinquish their loan to their spouse. Moreover, respondents who are poor are more likely to borrow from a microfinance institution than their counterparts who are not poor.

From column B, all the variables except, value of physical assets, are statistically significant and at 1%. Thus, the age of the respondent has a negative impact on multiple borrowing or the number times one borrows. Number of dependents in household and number of borrowing sources however have positive impacts on multiple borrowing even though they are not significant in the first hurdle.

Also, the number of friends with loans has a negative impact on multiple borrowing, though this variable has a positive impact on the probability of borrowing in the first hurdle. This is so because friends with loans may encourage their peers to also borrow initially, however, subsequent decisions as to whether to go in for more loans in the future may be decisions taken independent of friends' influence.

The value of output has a positive impact on multiple borrowing but it is negatively related to the decision to borrow. Initial saving also has a positive impact on multiple borrowing, while the number of economic activities engaged in by the respondent has negative impact on multiple borrowing, it is not significant in the first hurdle. As the one engages in more economic activities the tendency to go in for more loans reduces due to the fact that more profits would have been made and the proceeds invested in other activities hence its negative impact on multiple borrowing. This finding is contrary to Faruqee and Khalily (2011) which asserts that clients may need supplementary microloans to support growth of a small business.

Again current savings has a negative impact on multiple borrowing but has a positive impact on the decision to borrow. In most microfinance programmes current saving is a prerequisite for loans, however, this may not be the case for subsequent loans to be contracted.

The results again indicate that respondents whose spouse or any male member of the household takes a portion of her loan contracted, take on less multiple loans than their counterparts whose spouse do not take a portion of their loan but this variable has a positive impact on the probability of borrowing. The reason may be that respondents are unwilling to go in for more loans since they know their spouses are likely to take a portion of the loan while they are left with the difficulty of repaying the whole loan amount. Also respondents who must take permission from their spouse or any male member of the household take on less multiple loans. It can therefore be inferred that these two variables; spouse taking a portion of the loan and permission from spouse to borrow which measure intra-household decision making and power play have negative impacts on multiple borrowing.

The number of people in the respondents' household has a negative impact on multiple borrowing, but this is positive in the first hurdle. Also respondents, who are poor, living below the weekly poverty line of 14.41 Cedis, take on less multiple loans than their counterparts who are not poor. Poor people may have challenges of repaying their loans and for that matter may have poor credit rating. In such a circumstance they are unlikely to get multiple loans than their counterparts who are non-poor.

4.0 Conclusions and Policy recommendations

The study sought to investigate the factors that motivate women microcredit borrowers to play the proverbial Oliver Twist, that is, take multiple loans from microfinance institutions. The study used the double hurdle estimation method and the results showed that, the number of dependents in the respondent's household and the number of borrowing sources known to the respondent are motivating factors for multiple borrowing to the women. On the contrary respondents who relinquish their loans to their spouse, respondents who must necessarily seek permission from their spouse and respondents who are poor have no motivation to take multiple loans.

It is therefore concluded that, intra-household decision making and power play in male dominant households if not well balanced, discourage women from taking multiple loans no matter how beneficial these loans may be for the women and their households. Again, poor people do not have the motivation to go in for multiple loans. This is so because of their poor credit rating. In the light of these, it is recommended that gender mainstreaming should be included in the services of microfinance institutions to encourage women participation in household decision making so as to give them more socio-economic leverage to engage in economic activities as long as they are beneficial to them. Again microfinance institutions should devote a percentage of their loan portfolio to targeting the poor so as to enable the poor access loans as many times as they can.

References

- Armendariz de Aghion, B., & Morduch, J. (2005), *The Economics of Microfinance*, Cambridge: MIT Press.
- Alnaa, S. E. (2013). Do Multiple Loans from microfinance institutions help the rural poor women? Empirical evidence from Ghana. *Research in Applied Economics*, 5(3), 78-95
<http://dx.doi.org/10.5296/rae.v5i3.3874>
- Annim, S. K., & Alnaa, S. E. (2013). Access to microfinance by rural women: Implications for poverty reduction in rural households in Ghana. *Research in Applied Economics*, 5(2), 19-41.
<http://dx.doi.org/10.5296/rae.v5i2.2974>
- Berhanu, G., & Swinton, S. M. (2003). Investment in soil conservation in northern Ethiopia: The role of land tenure security and public programme. *Agricultural Economics*, 29. 69-84.
- Burton, M., Dorsett, R., & Young, T. (1996). Changing preferences for meat: Evidence from UK household data. 1973-1993. *European Review of Agricultural Economics* 23(3), 357-370.
- Cragg, J. (1971). Some statistical models for limited dependent variables with application to the demand for durable goods. *Econometrica*, 39, 829-844.
- Faruqee, R., & Khalily, B. (2011). Multiple borrowing by MFI clients: Current status and implications for future of microfinance. Policy Paper, Institute of Microfinance, Bangladesh.
- Greene, W. (1993). *Econometric Analysis*. 2nd edition. Macmillan, New York.
- Ghalib, A. K., Malki, I., & Imai, K. S. (2011). *Impact of microfinance and its role in easing poverty of rural households: Estimation from Pakistan*. Discussion paper series no. DP2011-28, Kobe University, Japan, Research Institute for Economics and Business Administration.
- Ghana Statistical Service (2008). *Ghana Living Standard Survey: Report of five round (GLSS)*. Accra: Author
- Gobezie, G., & Garber, C. (2007). *Impact assessment of the microfinance programme in Amhara Region of Ethiopia*. Paper presented at International Conference on Rural Finance Research: Moving Results into Policies 19-21 March 2007 FAO Headquarters, Rome Italy.
- Goetz, A. M. & R. S. Gupta, R. S. (1996). Who Takes the Credit? Gender, Power, and Control over Loan Use in Rural Credit Programs in Bangladesh, *World Development*, 24 (1): 45-63

- Imai, K.S., Arun, T., & Annim, S.K. (2010). *Microfinance and household poverty reduction: New evidence from India*. Discussion paper series no. DP2010-14, Kobe University, Japan, Research Institute for Economics and Business Administration.
- Imai, K.S., & Azam S. (2010). *Does microfinance reduce poverty in Bangladesh? New Evidence from household panel data*. Discussion paper series no. DP2010-24, Kobe University, Japan, Research Institute for Economics and Business Administration.
- Kabeer, N. (1998) *Money Can't Buy Me Love? Reevaluating the Empowerment Potential of Loans to Women in Rural Bangladesh*, IDS Working Paper.
- Khan, A. A. (2008). *Islamic microfinance: Theory, policy and practice*. Birmingham: Islamic Relief Worldwide. Retrieved December 13, 2011, from <http://www.islamic-relief.com>
- Khandker, S. R. (2005). Microfinance and Poverty: Evidence Using Panel Data from Bangladesh. *The World Bank Economic Review*, 19(2), 263-286. <http://dx.doi.org/10.1093/wber/lhi008>
- Krishnaswamy, K. (2007). *Competition and Multiple Borrowing in the Indian Microfinance Sector*. Working Paper, Institute for Financial Management and Research Centre for Micro Finance.
- Microfinance Information Exchange, Inc. (2009). *MFI Benchmark Analysis*. MicroBanking Bulletin, issue no. 19, author.
- Morduch, J., & Haley, B. (2002). *Analysis of the effects of microfinance on poverty reduction*. New York University Wagner Working Paper No. 1014.
- Mukherjee, S. (2010). *Multiple Borrowing and Competition: Impact on Credit Quality*. IFMR Capital.
- Newman, C., Henchion, M., & Matthews, A. (2001). Infrequency of purchase and double-hurdle models of Irish households' meat expenditure. *European Review of Agricultural Economics*, 28(4), 393-419.
- Remenyi, J., & Quinones, B. (2000). *Microfinance and poverty alleviation: Case studies from Asia and the Pacific*. New York: Asia Development Bank.
- Teklewold, H., Dadi, L., Yami, A., & Dana, N. (2006). Determinants of adoption of poultry technology: A double-hurdle approach. *Livestock Research for Rural Development*, 18 (3)
- Vogelgesang, U. (2003), Microfinance in times of crisis: The effects of competition, rising indebtedness and economic crisis on repayment behaviour. *World Development* 31(12): 2085-2114.
- von Neumann, J. & Morgenstern, O. (1944). *Theory of games and economic behavior*. Second edition. Princeton, NJ: Princeton Univ. Press.

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