

Determination of Credit Programme Participation and Socioeconomic Characteristics of Beneficiaries: Evidence from Sargodha

SYEDA RIZWANA SHAH, AQSA TABASSAM BUKHARI,
AMARA AMJAD HASHMI, and SOFIA ANWER

1. INTRODUCTION

International literature asserts that “micro-finance” began alleviating poverty several decades ago when organisation in Latin America, Bangladesh, and other developing nations started testing the notions of lending small amounts to impoverished people (mostly women). Professor Mohammad Younis¹ of Bangladesh and his Grameen Bank brought it on to the world stage and showed how effectively it could be used to change lives. Giving loans of as little as five dollars, Grameen brought millions in to the micro credit net and in doing so lifted people, particularly the rural poor, out of abject poverty [Ayesha (2007)]. By 1980, the success of such institutions prompted many NGO’s and International Organisations to provide micro-finance services.

Microfinance in Pakistan

In Pakistan, the First Microfinance Bank was instituted with the conversion of the microfinance department of Agha Khan Rural Support Programme. Later on “Khushhali Bank and Pakistan Poverty Alleviation Fund (PPAF)” were establish. The First Women’s Bank was also active in lending microfinance. In NWFP, The Bank of Khyber collaborated with NGO’s and Rural Support Programmes (RSPs) to serve lower income groups. Many other RSPs having largest coverage represent the number of MFIs which function properly their due responsibility in the development of microfinance institutions in Pakistan. The Kashf Foundation, Tarqee and Damen have specialised in microfinance. The Orangi Pilot Project (OPP) developed an individual lending programme modified to urban slums, by targeting small entrepreneurs in Karachi region. Irrespective of this fact that all these institutions have made many achievements their contribution remains not more by five out of hundred of the predicted needy individuals [Montgomery (2005)].

The access to microfinance establishments and other countryside associations offering monetary services was inadequate due to a tampered institutional groundwork.²

Rizwana Shah <rizwanashahzad208@yahoo.com>, Aqsa Tabassam Bukhari <imaqsa_bukhari@yahoo.com>, Amara Amjad Hashmi <ammara_hsa@hotmail.com> are Graduate Students, and Sofia Anwer <sofia_ageconomist@yahoo.com> is Professor, Department of Economics, University of Sargodha.

¹The pioneer of Grameen Bank, Bangladesh.

²www.bwtp.org/arc/pakistan.

So the credit necessities of mass underprivileged were pleased by unofficial credit markets.

The purpose of this study is to identify the factors that influence the household access³ to credit and determine the household to be a programme participant.⁴

Objectives

The underlying objectives of the study are to:

- (1) Study the socioeconomic characteristics of micro credit beneficiaries.
- (2) Determine the factors influencing household participation in credit Programme.

2. REVIEW OF LITERATURE

The slogan “micro credit” was well known in third world and modern world economies, in the end of 20th century. It is one of the very important poverty reduction device for very poor in general and particularly for women. The financial organisations were disable to provide loan to the poorest possessing no “collateral”. Due to limited access of poor to the institutional credit, the impact of credit on small farmers has been much below the expectations of policy makers [Qureshi (1995)]. The lack of credit opportunities kept the poor in a vicious circle of poverty. The availability of microfinance seems imperative because financial markets were prone to neglect the requirements of needy households, simply because of the existing criteria in which financial worthiness requiring contacts, collateral and accessibility [Kashf (1996)].⁵ MFIs challenged to defeat such hurdles via inventive procedures like, to lend to more people together and standard discounts proposals. In addition to this, it set up stronger linkages among customers and officials [Montgomery (2005)].

During 1990s, micro credit sector remained busy in providing lending chance to individuals embarrassed by the formal financial institutions [Black and Morgan (1999)]. Simultaneously, new economic improvements lesser the overheads of generating funds. These give confidence to credit providers to engage other individuals that were marginal and offered additional loan. Yet the fraction of households that were constrained did not alter as time goes on [Fissel and Jappelli (1990)]. Atieno (2001) and Fredrick, *et al.* (2004) contradict the above situation and argued that loan was available at rate of interest settled by the market. Sustainable financial institutions offer credit not only for agricultural production, but also for consumption smoothing and income diversification. The rural financial services make available their loan conveniences for “small and micro enterprises” and households. However, there are upper edges which have to face by all probable clients. It is due to the incomplete know-how among suppliers and demanders. The availability of loans was directly affected by the household characteristics [Okurut (2004); Diagne and Zeller (2001)]. Access to credit can considerably add to the capability of poor household with fewer reserves to get required farm inputs. Access to credit also lessen the prospective costs of capital-intensive possessions relative to family labour, thus

³A household had access to credit from a particular source if it was able to borrow from that source.

⁴Participation in the credit programs referred to the situation in which household actually borrowed from that source of credit.

⁵Annual report Kashif Foundation (1996).

cheering labour-saving equipments and lifting labour efficiency, a key issue for growth, particularly in many African countries [Delgado (1995); Zeller, *et al.* (1997)]. A non-participating household that having access to credit will still be beneficial on the grounds of awareness that increased its ability to put up with risk, as it can be encouraged to experiment with riskier, but potentially high-yielding technology [Eswaran and Kotwal (1990)].

However, it is not necessary that availability of loan to poor individuals forever leads to effective measures taken to lesser poverty. Small landholder farmers were too poor to take advantage of funds. Although if they approach to credit, its restraints were so harsh that increased yield would fail to undertake their feeding requirements. For reducing market imperfections and malfunctions credit accessibility to needy seemed to be a significant device. The reason behind this was that if for sometime the credit restraints were made hassle free, the concerned individuals may employ more labourers for getting increase in produce [Sintowe (2006)].

There are two different facets of informal financial institutions. Initially, private lending bodies and other unofficial commission agents are present with official lenders, for example banks and NGO's, and in recent times, MFI's. Next, probable loan takers apparently experience substantial contract overheads on getting peripheral loan [Gine (2002)].

There were two different steps in the course of action involved in credit. First, people willing to borrow fix on their required amounts to apply for, from a particular agency/lender at the existing rate of interest, making demand side. In the next step lender decides to whom he had to fund and how much? It was the supply side. The availability of both institutional and non institutional credit was predicted through correlations among suppliers and demanders. The access to formal credit sector was constrained due to the institutional limitations. The institutions sanctioned credit only for reproduction or manufacturing, where as non institutional sources offerings were varied. The formal lenders adopt severe collateral pre requisites to minimise evasion, thus separating poor from the process. The low level of returns, asset growth and limited formal lending for consumption smoothening, make the poor household unattractive and render a high-risk contour for formal lenders. So they move to the informal credit market to meet their credit demands [Duong, *et al.* (2002); Pal (2002); Barslund and Tarp (2007)]. Credit demand is moderately modeled by unique characteristics of borrowers. It was possible that most who seek credit would be able to obtain it, but costs and conditions may be prohibitive for some high risk borrowers [Atieno (2001); Okurut, *et al.* (2004)]. The demand for credit increased if household's earnings were more, if it is the owner of the house. In case of bigger families demand also raised. Individual's socioeconomic aspects have an effect on its stipulated employment for liquidity restrained "households". Where as these socioeconomic factors exhibited no influence as for unconstrained individuals are concerned. For reducing market imperfection and malfunctions, credit accessibility to needy seemed to be a significant device. The reason behind this was that if for sometime the credit restraints were made hassle free. The concerned individual may employ more labourers for getting increase in produce [Sintowe (2006)]. Household borrowing was determined in the long run by real spending, gross wealth and the repayment term for outstanding credits, which had a positive influence, and these were inversely related to the cost of loans and the unemployment rate. Development in the short run was

influenced by changes in long-term interest rates and in employment [Nieto (2007)]. The household aged between 20 to 30 are more passionate. They continue taking on risk and hence experienced rapid increase in earnings. These energetic households actively take part in borrowing programmes than elder [Lehnert (2004)].

Once a household decides to utilise a particular source of loan, the next question will be the determination of interest rates [Ho (2004)]. The dominance of doubling of rates of interest in the non institutional sector was confusing [Gill (2003)]. In the same area, on superficially similar loan transactions, rates of interest may get different standards [Udry (1991)], but were frequently to the upper edge [Gill (2003)]. Usually, to reduce evasion and risk, higher than normal interest rates were charged as prerequisites. In rural settings of Pakistan, the standard deviation of interest rate charged by moneylenders was 40 percent per annum [Aleem (1990)]. Evidence from India showed that informal interest rate varied from 20 percent to 120 percent [Timberg and Aiyar (1984)]. Demand for credit was extremely value responsive at higher interest rates. It was also observed that amount of loan was very sensitive to alterations in credit developments as compared to rate of interest. This is a common practice with households having low earnings [Karlan and Zinman (2005)]. Along with increase in rate of interest, poor's demand for finance increased with increase in lending each year. However, the loan portfolio of financial institutions was shifted towards comparatively wealthier customers as compared to the composition of the portfolio that was without an interest rate change. The results on one hand supported those who argue that raising rates can improve the financial permanence of microfinance organisations. On the other side results also supported those who argue that the poor, and particularly the poorest, do consider prices and reduced loan demand accordingly [Dehejia, *et al.* (2005)]. On extra use of credit, clients experience an increasing trend in rate of interest. After some time this trend become straight and household experience the upper edge of credit. The interest rate assumed a wide range of values in informal sector. Sometimes rate of interest was charged in terms to under price the collateral [Bhaduri (1973)]. Being able to provide marketable collateral was showed an inverse relationship with higher rates of interest [Sarap (1991) and Ho (2004)]. Conversely, in economies where there is developed agriculture sectors and landlords and middle man hold on informal credit markets, collateral was scarcely under priced. Though the rates of interest charged were high. It is due to the reason that households demanded much more than was offered by official lenders. They had to move to informal supplier. The informal money lenders give loans at very high rates. These landlords and commission agents give loans not only for production but also for every reason. They did not documented the contracts and do not involve borrowers on paper work. These things make borrowing easy and gorgeous [Gill (2003)].

3. DATA AND METHODOLOGY

The Data

The study uses a survey data of rural household collected by the Rural Community Development Society (RCDS)⁶ a Pakistani NGO in the year 2004-05. A sample of 910

⁶RCDS, was registered in 1998, a member organisation of Pakistan Poverty Alleviation Fund (PPAF). The World Bank funded PPAF has been designed to reduce poverty and empower the rural and urban poor in Pakistan. RCDS has an exclusive focus on poor farmers and low-income entrepreneurs.

from district Sargodha⁷ was taken from low income category of population with average monthly income Rs 3872. The data included but not limited to household characteristics including size, composition, employment, expenditures and borrowing.

Methodology

The analytical procedures used for the present study can be divided into two categories:

1. Descriptive Analysis.
2. Econometric Modelling.

Descriptive Analysis

The analysis under this category includes calculation and comparison of average household characteristics using descriptive statistics. The demographic as well socio-economic profile of borrowers including information about credit will be examined to assess the general characteristic of borrowing households. The descriptive statistics analysis will also help provide some insight about the importance of various factors related to the use of credit, which in turn will be useful for developing, and estimation of the econometric modelling discussed in the following section.

Econometric Modelling

In this section, the household decision of borrowing and determinants of participation were analysed. Following Ho (2004) and Nguyen (2007) credit programme was specified by participation as a function of household characteristics. A twofold logistic regression technique was employed to predict the probability of participation. With a particular reference of participation to credit, the dependent variable assumed two values i.e. “1” if there was participation to credit and “0” otherwise. Numerous mortgages taken by individual were supposed as different dealings. The logistic regression model then expressed as

$$\log it[\rho(y = 1)] = \log \left[\frac{\rho(y = 1)}{1 - \rho(y = 1)} \right] = \alpha + \beta_1(HAGE) + \beta_2(HEDU) + \beta_3(HHS) + \beta_4(EAR) + \beta_5(INC) + \beta_6(INT) + \beta_7(OWNH) + \beta_8(SL) + \beta_9(FFI)$$

Where “ $\rho(y = 1)$ ” indicated the probability of obtaining credit. HAGE narrated the age of household head. HEDU was the years of schooling of head of household. HHS was the household size. EAR were the number of household family members participating in economic activities. INC was the monthly revenue earned by household. INT showed the rate of interest charged on loan. The variable OBNH represented the ownership of house. It was a categorical variable. Having a house owned by the household equals “1” otherwise “0”. SL was the source of loan. It was divided into formal and informal financial institutions. FFI showed the presence or absence of formal financial institution or NGO operating near the village.

⁷The population estimate for the study region, Sargodha Town (2007) is 686,312, for the tehsil 10, 81,459 and for the district 26, 65,979. The economy of the region is pre-dominantly based on agriculture [Pakistan (2007) “Ministry of local Government and Rural Development”. <http://www.pap.org.pk>].

4. RESULTS AND DISCUSSIONS

This section provides major characteristics of households that are micro credit beneficiaries. Such characteristics include age of household, household size, number of dependents and earners, household marital status etc.

Age of Head of Borrower Household

In the sample, the frequency distribution of credit borrowers with respect to their age showed that probability of getting initial external financing had increased from the age of 28 years and decreased after 50 years. It was at its peak in the age of 35 years. The household members below 18 and above 70 were credit rationed. So the financially deprived people of these two segments of sample population were not given micro loans. It affected mainly the youngest strata of the population, thus depriving them of the financial support needed to establish their own businesses (see Table 1).

Table 1

General Characteristics of Household Borrowers

Variables	Minimum	Maximum	Mean	Std. Deviation
Age (Years)	18	70	40.97	11.142
Education (Years of Schooling)	0	14	4.10	3.878
Marital Status	0	1	0.98	0.129
Family Size	2	12	6.52	2.167
Earners	1	6	1.40	0.960
School Going Members	0	6	1.70	1.442
Learners	1	3	1.27	0.578
Income (Rs)	1500	12000	3872.77	2346.683
Expenditures (Rs)	1000	12000	3625.00	1941.136
Per Capita Income (Rs)	200.00	1666.67	646.2442	400.83380
Amount Borrowed	2000	40000	21350.00	53089.252
Days of Process	1	45	3.65	9.279

Education

The correlation of distribution of education and borrowing activities showed that households head's having no schooling, primary or lower secondary school were the main borrowers. The Households' head possessing university degree did not borrow much. The underlying assumption is that higher education surely helped them to find a paid job and they were not in need of micro finance. This concludes that higher education did not determine credit participation.

Marital Status and Family Size

The households headed by male members have higher probability of obtaining loan from either sector. A household led by a male family member was expected to be professed even economically and consequently lesser hazard, compared to a lady headed household. A high dependency ratio tend to boost the danger of loans and accordingly left a positive outcome on the interest rate.

Income and Expenditures of Household

The explanatory data from the household investigation demonstrates that the curriculum mark the poor. The average Income of household Rs 3872.77 was too stumpy to carry out his needs. The per capita income Rs 646.2442 was below poverty line in the period of data collection (2004-05). That insufficient income trapped the households in to a vicious circle of poverty. To break that trap they required a big push, which they obtained from external borrowing.

Household Occupation

Descriptive statistics for the occupation of borrowers showed that labour class and people enjoying self-businesses were the main borrowers. The percentage from private sector, agriculture sector and from live stock comprised of a small proportion of borrowers.

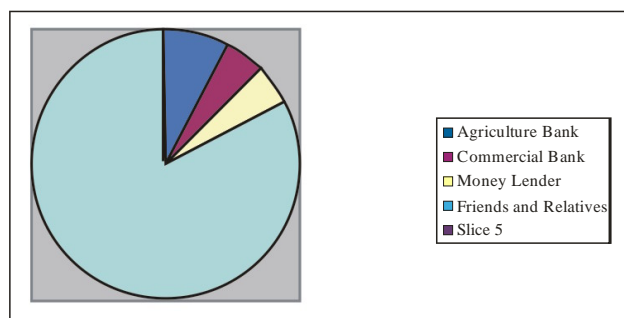
Characteristics of Credit

Different household decided to apply to the offered sources of credit. The applications depend on how these households meet their distinctive and economic characteristics. These characteristics determined the judgment to pertain for credit, and to which sector it was applied for i.e. either formal or informal lenders.

The source of credit was divided into formal and informal sector. The result showed that majority of loan was given by friends and relatives. It was also observed that friends and relatives make available loans for almost all kind of purposes. It ensures the reality that informal institutions believe in a lower fudging possibility. So the informal sector is the biggest source of loans not in the rural area but also take over in the urban areas.

Based on the classification of informal markets in the study region, it was seen that out of those who had used credit from informal sources, 82 percent used family and friends and 5 percent took credit from moneylenders and property owners. The proportion of loan from formal sector was 12 percent. It was due to the reason that friends and relatives offer loan for every reason and they were best aware of the personal characteristics of households. They knew very much about the borrower's credibility so the fudging rates were minimised. The rate of interest was nominal on such loans. Perhaps this was the biggest reason of taking loan from this sector.

Fig. 1. Source of Credit



Determinants of Participation in Credit Programme

In this section, the household participation in credit determined by various factors was analysed with Logistic regression analysis. Rural financial institutions provide credit both for consumption and production purposes. It was supposed that, on demand of credit, an individual either apply to formal or informal institution for loan. The applications were made on the chance of obtaining funds from either sector. The probability of getting loan depends on the money demanded, the previous loan records and also on the available supply. It was assumed that for an individual household "i" for a certain time period "t", the probability of obtaining loan from any informal institution was greater than the formal institution. Following Ho (2004) this assumption was also applied. The results were shown in Table 2.

Table 2

Determinants of Households Participation in the Credit Programme

Variable	Coefficients	Sig.	Odd Ratio's
HAGE	-0.51 (0.020)	0.012	0.950
HEDU	-0.28 (.033)	0.387	0.972
HHS	0.242 (0.075)	0.001	1.274
EAR	0.390 (0.037)	0.000	1.477
INC	-1.160 (0.290)	0.000	0.314
INT	1.319 (0.248)	0.000	3.740
OWNH(cat)	0.145 (0.164)	0.376	1.156
SL(cat)	-1.631 (0.361)	0.000	0.196
FFI(cat)	1.161 (0.246)	0.000	3.192
constant	5.013 (0.685)	0.000	150.339

Dependent Variable= participation in credit programme (yes=1, 0 otherwise).

The change in dependent variable was explained by the magnitude of odd ratios. The results demonstrated that there was a negative relation ship between the age of household and access to credit (which is =1) for a household. It mean, if age of household head increase there is a significant decrease in the participation to credit programme. The odds ratio for education of head of household showed that it had negative effect on the access to credit, that if education increase there is a significant decrease in participation to credit programme.

While the odds ratio for household size revealed that as the no of headcount member of household increases there is a significant increase in the participation to credit programme

The odds ratio for earners of household (no of headcount members involved in economic activities) was depicting that participation to credit programme for a household significantly increases as the earner of household increases.

The odd ratio for the income (natural log) of household showed that income increases the participation to credit programme decreases.

The odds ratio for the variable rate of interest (natural log) indicated that participation to credit programme significantly increases as rate of interest increases.

The odds ratio for the dichotomous variable of the ownership of house (if household head owned the house =1, zero otherwise) revealed that odds of the event of participation to credit programme of a household head possessing a house significantly increases significantly more than odds of a household living in a rented house.

The odds ratio for the binary variable of the source of loan (formal =1 and 2 otherwise) was showing that odds of the event of participation to credit programme to formal source decreases significantly than odds of informal source.

The odds ratio for the dichotomous variable of the presence of formal financial institution (if a formal financial institution or NGO operating in the area =1, zero otherwise) was predicting that odds of the event of participation to credit programme of a household significantly increases about 3.192 times more than odds of absence of formal financial institution .

Above results demonstrated that a household demanded more debt when its income was higher, when it owned its own home, when the family size was larger and the head was working. The age of head of household showed a negative affect on participation as younger households are more energetic and motivated. These results are consistent with Lehnert (2004) and Nugyen (2007) but it differs with swain (2001) who stated that with the increase in age, accumulated experience, practical and professional wisdom of the household increased its income generating capability and he demanded more credit to explore his capabilities or to spend on consumption.

Education level also showed a negative affect on credit participation. It is also similar to Nugyen (2007). Households heads possessing higher degrees were showing almost no participation. Because higher education may help head of households easier to find a paid job.

The variable estimated for the earning members of a household have a positive relationship with the access to credit. It was because as the household had more than one earner it was easier for him to repay and to fulfill collateral requirement. Households having more than one earning members showed economically sound position.

The coefficient estimate for the household size variable was positive and significantly consistent with the previous studies [Ho (2004); Simtowe (2006) and Nguyen (2007)]. Having a bigger family, *ceteris paribus*: increased the demand for loans, because per capita income was smaller for big households. A large family was likely to expect a large flow of income in the future as the children grow up and begin to work, thus they were likely to demand more credit.

The rate of interest was reported as positive. It meant that households were indifferent about the rate of interest. This was consistent with Malik (1999), Gill (2003) and Dehejia, *et al.* (2005). The results supported those who argued that raising rates could improve the financial permanence of microfinance organisations. Other things being constant, and assuming all borrowers have equally good credit, a lender would prefer to lend out a big loan to one borrower rather than several small loans to several borrowers had he the choice, because his transaction cost would be lower.

The coefficient of income of household was negative and significant. As income from both farm and off-farm activities enhance farmers' confidence to not borrow. Because we can categorise the observed loan as micro credit or micro financing loans which more than 80 percent comes from the informal sector and most often used for the consumption purposes or to smooth the consumption patterns in the bad years. Where the borrowers also belonged to the low income group. Their per capita income was Rs 646 which was below poverty line in the year of data collection 2004-05. Therefore such income reflects capacity to finance their spending by themselves, hence as household income increased, the probability to borrow is expected to decrease.

The existence of the any financial institute or NGO had strongly positive effect on the participation activities in the credit programme. The underlying fact is that, if there is any financial institute it breaks the monopoly of the land lords and arthies in the credit market, especially in the rural areas. It helps to overcome the market imperfection in the credit market.

As most of the loan in our data was taken from informal sources, therefore the dummy variable of formal sector showed a negative relation ship with credit participation variable. It is showing the fact that more risky and consumption purpose loans are not given by financial institutes.

Over all we can say that the results of the research in hand are in line with general established economic theory. It is very reasonable approach to study the determinants of household participation in credit programme as a function of household's socio economic characteristics. [See Atieno (2001); Fredrick, *et al.* (2004); Malik (1999); Dehejia, *et al.* (2005); Ho (2004); Nguyen (2007)].

5. CONCLUSION

The paper is an attempt to analyse the factors affecting household participation in credit programmes. It utilised a cross-sectional household data set from the period 2004-2005. The results drawn from the Logistic regression concluded that credit was accessible at market determined rates. At household level, the participation to credit was influenced by age of the head of household, years of schooling of household head, earners in a household and household size. The ownership of house increased the probability of obtaining loan. One surprising result was that household was indifferent about rate of interest. They prefer liquidity even at high rate of interest. The presence of formal financial institution increased the access to credit by household. It was observed that major source of external financing was the informal credit market.

6. SUGGESTIONS

To perk up the rural credit markets the following actions are proposed.

- The procedure of getting loan should be simplified. So that illiterate can easily understand terms and conditions of agreement.
- For the purpose of reimbursement, MFIs should create such incentives that would influence borrowers to repay their loans at the given time.

- MFIs should devise such policies that credit should reach to the low income group and women for smoothing consumption and for carrying on income-generating and income diversifying activities.

Operating these recommendations can improve the efficiency of the lending methods and increase household participation in credit programmes and helped them to get out of poverty.

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Comments

The paper analyses the determination of Credit Programme Participation and Socio-Economic Characteristics of Beneficiaries by using a survey data that was collected from 910 rural households in Sargodha by a Pakistani NGO in the year 2004-05. The paper needs some revisions. First of all, the introduction and review of literature section need to be improved. Review of literature needs to be written with continuity of ideas. Furthermore, it is not clear from the review whether the review is reflecting evidence from Pakistan or other countries.

The review suggests that household borrowing is determined in the long run by real spending, gross wealth and the repayment terms for outstanding credits. On the other hand household borrowing is inversely related to the cost of loans and the unemployment rate. The inverse relationship with unemployment rate is not expected. I anticipate a positive relationship the higher the unemployment rate, the higher will be the borrowing need of a person. There is also need to review recent literature on microcredit in Pakistan. For example, Access to Finance Study carried out by State Bank in collaboration with DFID and GTZ. The finding of the study suggests that only 2 percent of the population get credit form the formal sector.

The authors have analysed the data by using the descriptive analysis and econometric modeling techniques. The paper needs more editing as the authors have not referred tables of results in the discussion and reported in an appendix. They should report the results in the main body of the text. In results section, they also discuss evidence from Malawi and Kenya confusing them with Pakistan. The result that participation to credit program significantly increases as rate of interest increases is contrary to the perception and findings from other countries. It should be further explained. In the conclusion sections general suggestions have been given. These suggestions should be linked with empirical findings of the paper.

There are too many references in the reference list but a number of references referred in the text have not been written. Unnecessary references should be curtailed and only relevant references should be included. Comparison of the results with other authors should come in a sub section of result. In the end, author should discuss the theme of the conference, the economic sustainability and try to link the paper with theme.

Talat Anwar

Canadian International Development Agency,
Islamabad.