

Demographic analysis for associations with poverty



3. Socio-economic Characteristics

In this paper, demographic characteristics such as age, sex and education as well as socio-economic characteristics such as household assets and livelihood activities are assessed. These characteristics provide an overview on the background of the respondents, which in turn provides an overview about the suitability of the study population. Without necessarily being the source of poverty, it has been pointed out that having a particular characteristic may be associated with poverty. For example, most households that depend on agriculture, livestock and fishing keeping are more likely to be poor.

We have also collected data about their profession that how they manage fishing. Also, data has been collected about their economic activities like have they received microcredit or do they pay any usury. Here in the following table we show their professional activities. Non-Users of mobile phone number is 53 out of 205, which is 25.85% and number respondent using mobile more than 1 year is 92 out of 205, which is 44.88%. These characteristics are described in table 1, 2 and 3.

Table 3: Information (Qualitative) about Mobile Phone of the User

Subject	Number of User	Percentage
Length of using mobile phone		

<6month	18	11.8%
7 to 12 months	42	27.6%
> 1 year	92	60.5%

Reason of using mobile phone

Family	20	13.2%
Business	93	51.2%
Other	39	25.7%

The level of literacy rate is 30.7% which is less than rural Bangladesh illiteracy rate 50.6% (BBS, 2013). Mobile phones are easy to afford and do not require the user to have much technological knowledge or even to be able to read or write, so this group with primary or no education can operate this.

Table 4: Income Status

For Mobile Users (N = 152)

Variable	Income Before use mobile	Income after mobile use
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Income [Mean (\pm S.D.)] (Bangladeshi taka)	13068. 39 (\pm 11840. 35)	20854. 72 (\pm 22868. 66)
Household monthly income	N (%)	N (%)
Lower Income (0-10000)	87 (42. 4 %)	75 (36. 6 %)
Average Income (10000-15000)	34 (16. 6 %)	13 (6. 3 %)
Higher Income (>15000)	84 (41. 0 %)	115 (56. 1 %)

For Non-Mobile Users

(N = 53)

Variable	Last Year	Present Year
Income [Mean (\pm S.D.)] (Bangladeshi taka)	4666. 97 (\pm 11390. 37)	4134. 08 (\pm 9743. 71)

In order to understand the socio-economic status of the households, a number of household assets and livelihood activities were assessed through multiple-response questions. As all respondents are fishermen, so their main

earnings are from this occupation. At the same time, they are also involved in some agricultural productions. Also, some respondents are partly involved in business. As we collected the whole information of their family, so the other source of income with fishing by the other members of the family are also involved. The other member either may be migrated or jobholder or may be involved in business like storekeeper. So, in our data, all of the income earnings through these income sectors are also included. The Income group are separated in three groups with their monthly income. The lower income group with the income from 0 to 10000 taka, average income group with the income from 10000 to 15000 taka and higher income group with the income higher than 15000 taka.

For mobile phone user, the average income before mobile phone use was 13068. 39 taka where after the use of mobile phone this average income raised to 20854. 72 taka.

For the non-user of mobile phone we collected the data about income for the previous year. The estimated average income of the last year was 4666. 97 taka where in present period this income has decreased to 4134. 08 taka. The estimated income of the mobile phone user and non-user are given by the following Table-4.

4. Impacts of Mobile Phone Use on Fishing Community's Business

The study has sought to identify the impacts of the mobile phone in fishing community life. Impact refers to the difference that access to the mobile phone has meant to the individuals in the study areas. Assessments of

impacts are based on the self-reported advantages of mobile phone access that the interviewees have indicated.

Access to the mobile phone has above all meant the creation of more opportunities and choices, but it has also provided help in managing uncertainty. Moreover, existing business relations have been strengthened. We have asked several questions related mobile phone use in their business and they answered (Table- 5). The advantages that the users feel the mobile phone has given them in business transactions is above all relate to the reduced access time to information. Reduced communication expenses are also important to many.

Table 5: Business related advantages of mobile phone users (N= 152)

Mobile phone has helped in:	Agreed
Easy to use	125 (82.2%)
Easy to access market information	128 (84.2%)
Reducing search cost and improve market knowledge	110 (72.4%)
Reducing risk	119 (78.3%)

Most of the respondents say that they call mostly for their business purpose. Before introducing mobile phone they had to accept the middleman's price offer for fishes because they had no other way to know the market price for fishes in the bigger markets. Mobile phone gave them the opportunity to verify the market price of fishes. Now, before sell fishes to middlemen, they do verify the market price in the nearby markets and only agree to sell when they get a good price. Now they feel much more confident as they have gained bargaining power with the middle men who mostly deprive them from their profit.

Table 6: Business information of mobile phone users (N= 152)

Business Related Questions	Strongly Agreed N (%)	Agreed N (%)	Neither Agreed nor Disagreed N (%)	Disagreed N (%)	Strongly Disagreed N (%)
After using mobile phone income has increased	102 (67.1%)	5 (3.28%)	31 (20.39%)	14 (9.21%)	0 (0%)

After using mobile phone savings have increased

mobile phone savings	78 (51.32%)	6 (3.95%)	33 (21.71%)	35 (23.03%)	0 (0%)
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After using mobile phone expenditure has increased

mobile phone expenditure	82 (53.95%)	17 (11.18%)	37 (24.34%)	14 (9.21%)	2 (1.32%)
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After using mobile phone, 67.1 percent fishermen have agreed that their income has increased, 3.28 percent have strongly agreed. Again, about the increase in savings, after mobile phone use 51.32 percent have agreed, 3.95 percent have strongly agreed. Finally, about the increase in expenditure. 53.95 percent agreed that their expenditure has increased, 11.18 percent have strongly agreed. 24.34 percent are indifferent whether 9.21 percent have disagreed and 1.32 percent strongly disagreed about the increase in price (table- 6).

They are agreed mostly that the impact of mobile phone on rural market is that the rural suppliers could more easily get market information, they could

more easily get price information and they find out that the market is expanding. Also they find out that the introduce of mobile phone strengthening their relationships with business partners, motivating himself in taking new initiatives and creating new economic or income generating opportunities.

Findings of table- 7 suggest that contribution of mobile phones were enabling rural households in Sylhet region to overcome vulnerabilities related to social exclusion . The phones were also reducing travel times and monetary costs; decreases physical risks; and increases the outcomes of those necessary journeys. Furthermore, increased temporal accessibility enables people to manage several activities regardless of their physical location.

Table 7: Qualitative information about mobile phone user's (N= 152) business

	Agreed
	N (%)
Livelihood and development aspects	
Does mobile phone can reduce risk?	119 (78.29%)
Do you get the assistance of health service initializing mobile technologies?	35 (23.03%)

Do mobile application and practices can 68 (44.

increase the benefit to women? 74%)

Do you face any harassment by others? 37 (24.

34%)

Do your productivity rise? 103 (67.

76%)

5. Empowerment

Empowerment is the reduction of dependency, owners as well as users have experienced a variety of changes after access to the mobile phone. In rural Bangladesh, people have very little scope for choice in work or social relation but remain confined to the village and its limited income earning opportunities.

Economic empowerment refers not only to increases in income but also to having control over resource and resource management, decision making power, involvement in and control over economic transactions. Mobile phone, besides financial gain, could also facilitate the economic empowerment of women. Mobile phone has created an income generation opportunity for rural women. It has also provided scope for interacting with a wider cross-section of people. Obviously, mobile phone as a business venture provides an opportunity for financial gain for the users. Almost most of the fishermen 70. 38% (Summation of “ agreed” and “ strongly agreed”, table-6) have said their income have increased through mobile phone. In the majority of cases the income of the fishermen has increased with the length

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of the mobile phone owning period. The greater the length of ownership, the higher has been the increase in income. So, apparently, as an income opportunity, the mobile phone has been a success for the fishermen.

6. Results and Discussion

6. 1 Probit Regression

Probit regression analysis attained in table-8 suggested mobile phone has a significant impact on social and economic condition.

Table 8: Probit Regression: Dependent Variable- Probability of using mobile phone

Variables	Coefficient
Constant	-0. 24 (0. 47)
Age	-0. 01335 (0. 0085)
Education	0. 89** (0. 29)
Maritaul Status	0. 29 (0. 23)
Otherych	0. 0018**

	(0. 0008)
	0. 0024***
Fishych	(0. 0007)
	0. 06
Credit	(0. 23)
	0. 97***
Sellall	(0. 29)
Number of observation	205
LR chi2 (7)	59. 28
Prob > chi2	0. 0000
Log likelihood	-88. 560767

Note: (1)*, **& *** denote 10%, 5% and 1%level of significance respectively,

(2) Standard Error is repeated in parenthesis.

(3) Otherych= Income from other source; Fishych = Income from fishing;

Credit= Micro-credit; Sellall = Sell all fish

Probit regression suggested that an increase in Age decreases the predicted probability of mobile phone use by 0.013. However, it can be easily seen that age has no significant influence on probability of mobile phone use. The coefficient of “ Education” shows that an increase in education increases the probability of using mobile phone by 0.89. This result was significant at 5% level. Another coefficient of “ marital status” was 0.29, which means that there is a positive impact of marriage in the predicted probability of income.

One of the most important coefficient “ income from other sources” (Otherych) was 0.00175, the result was significant at 5% level. This means that increase in income from other source than fishing cause increase in total income. The coefficient of “ income from fishing” (Fishych) was 0.0024. This means the increase income from fishing increases the total income. This result was significant at 1% level.

The coefficient of “ microcredit” (Credit) was 0.06. This means that an increase in receiving microcredit causes an increase in total income.

Coefficient of “ selling all fish” (Sell all) was 0.97. This means that the increase in selling all fish causes an increase in total income. This result was significant at 1% level.

The constant term is -0.24 which describes that predicted probability of income of the fishermen through mobile phone is extremely low if all of the predictors (Age, education, marital status, otherych, fishych, credit and sell all) are evaluated at zero. The Likelihood Ratio (LR) Chi-Square (χ^2) was 59.28 assuming that the model converged with all the parameters. Here, the value of log-likelihood is -88.56, which is negative, indicating better fit of

this model. $\text{Prob} > \chi^2$ - If $\text{Prob} > \chi^2$ tends to zero then there is no heteroscedasticity problem. Our probability of χ^2 value is 0.0000 that rules out existence of heteroscedasticity problem.

6.2 Marginal Effects after Probit

Marginal effects after probit is taken to find out the variation in the probability of increasing mobile phone use of the respondents. The marginal effects are calculated in Table- 9.

Table 9: Marginal Effects after Probit Regression

Variables	dy/dx
Age	-0.004 (0.002)
Education ⁺	0.21*** (0.06)
Maritaul	0.08 (0.07)
Status ⁺	0.0005** (0.0002)
Otherych	0. (0.0002)
Fishych	0.

	0.007***
	(0.0002)
Credit +	0.017
	(0.07)
Sell all +	0.33**
	(0.11)

Note: (1) (+) dy/dx is for discrete change of dummy variable from 0 to 1

(2) *, ** & *** denote 10%, 5% and 1% level of significance respectively.

(3) Otherych = Income from other source; Fishych = Income from fishing;
Credit = Micro-credit; Sellall = Sell all fish

All else held constant, education increases the probability of income by 21.28% and this was significant at 1% level. As the literate fishermen who are more educated can operate mobile phone effectively than the illiterate fishermen and are more informed about new inventions. They know that the use of mobile phone can minimize their cost by proving various market information including ups and downs in prices, pick demand etc. Relying on the middlemen, instead do not provide the mark; they information about price and market demand. So, the use of mobile phone among the fishermen who are educated is higher than the fishermen who are not educated.

Also, the income from other source rather than fishing, when all else held constant, increases the total mobile usage by 0.05%, with a significance of

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5% level . That is, the change in income from other sources like agriculture, remittances, businesses, wage or salaries and interest earnings were influenced by the change in attitude towards mobile use.

Again, earnings from fishing increases the total income by 0. 07 % and this result is significant at 1% level. That is the income earnings from fishing change the mobile usage positively. The fishermen who were using mobile phone can sell their fishes with better prices. So, the total income of the fishermen who were mobile phone user greater than the fishermen who were not mobile phone user. We have to admit however, that the real impacts on the probability to use mobile phone by both income variables are quite low.

Finally, selling all fish remaining increases mobile phone use by 33. 14% and this result was significant at 1% level. So, the fishermen who are mobile phone user can sell all the fishes whereas the fishermen who were not the user of mobile phone cannot sell all the fishes very fast compared to fishermen who were the user of mobile phone. As fish is very perishable good, it becomes a vital incentive for the fishermen to use mobile phone.

On the other hand, the impact of marital status and credit has no any significant impact on the change in total income. The status “ Married” for person increases the probability of increasing income by 8. 14% which was not significant. Receiving credit has a positive probability and increases the probability of increasing total income by 1. 67% which was not significant. That the receiving microcredit may enhance their wealth but the wealth status is not much more different of both the fishermen who are mobile phone user or not.

Finally, the probability of increase in total income is negatively related to the age. As age increases, the probability of increasing income decreases at 0.37% rate. This change is also not significant.