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Saving Behaviour and Financial Inclusion of Vulnerable Working Children: A Case of Bangladesh

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Abstract

While there are many programmes and campaigns to stop child labour, the fact remains that they still continue to work. This is a common phenomenon especially in under developed and developing world. Therefore, savings initiatives for vulnerable street and working children have been garnering policy attention so that they can be brought under financial services. This paper addresses few key issues regarding the saving behaviour of working street children; i) What are the key socio economic characteristics of the children who save; ii) What factors influence the saving performance of children in terms of utilisation of savings, and finally iii) What are the policy challenges need to be addressed if working children are given financial services.The result shows that income and financial strength of the family plays an important role in influencing the working children to save. It is also found that the female saversutilise the savings more effectively than male savers.Lastly, the paper suggested some policies aiming to foster financial inclusion of children and financial capability.

Keywords: Working Children, Savings, Financial Inclusion, Bangladesh.

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Saving Behaviour and Financial Inclusion of Vulnerable Working Children: A Case of Bangladesh

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1. Introduction

While there are many programmes and campaigns to stop child labour, the fact remains that they still continue to work. This is a common phenomenon especially in under developed and developing world. The latest survey on working children in Bangladesh which was conducted in 2013 by Bangladesh Bureau of Statistics (BBS) and International Labour Organisation (ILO) estimated that there are 3.45 million working children in the country between the ages 5 to 17 years comprising 1.75 million who are not child labour by definition and 1.70 million who are child labour that latter includes 1.28 million hazardous child labour. While they are working hard for maintaining their sustenance in the present there was no means for them to save for brighter future accessing banking or trustworthy financial services. Therefore, savings initiatives for vulnerable street and working children have been garnering policy attention so that they can be brought under financial services.

It is observed in various literatures that saving initiatives for vulnerable street and working children/youth may enhance both their financial inclusion and development outcomes. This will happen for two reasons. Firstly, this can facilitate 'asset effects' which means economic, social, psychological and behavioural changes caused by asset ownership that can improve multiple development outcomes for vulnerable youth (Deshpande and Zimmerman, 2010). Over the past few decades, a growing body of evidence has shown that building assets, and specifically savings, can bring a range of benefits to individuals and households, including those with low incomes (Schreiner and Sherraden, 2003). Secondly, youth-owned savings accounts have the potential to promote financial inclusion. At the most basic level, this would occur by bringing more people into the formal financial system at an earlier age, and giving them access to more diverse strategies for household economic management as they begin their adult lives (Deshpande and Zimmerman, 2010). On the other hand, serving children and youth can benefit the financial institutions too. Investing in this segment creates a powerful corporate social responsibility (CSR) propositions as well as interesting opportunities to help boost long-term profitability; improve long term customer relationships; and can serve as a good strategy for risk mitigation.

Despite these benefits, it is found in many literatures(Goodwin, et al.(1999), Russell, Maitre and Donnelly 2011)) that young people under 25 are the least likely age group to have access to basic financial services.The scenario is even more severe in the developing country where prevalence of child labour is a common phenomenon. In most cases, they engage in the labour force but do not have access to formal financial institutions.Consequently, they are more likely to spend their income on non-essential items to reduce the chance of their money being stolen or lost, or deposit it in a way that increases the risk of exploitation, such as with their employer. Hence, it is important to tailor special products for the vulnerable working children so that they can accumulate financial asset over time which can secure their future along with securing country's economic progress.

This study explores the possibilities of including the vulnerable working children under financial services by investigating their saving status and performance from gender perspective. As few

studies have been done on the saving initiatives for working children, little awareness has been created about their saving performances following gender dimension. Therefore, this study sought to carry out an investigation to observe the status of savings and performance of savers in order to fill the existing gap in research.In addition the study will also find out the characteristics of saversand their pattern of savings. Thus the study has three specific objectives:

- Assessing the socio economic characteristics of savers
- Examining the saving performances in terms of saving utilisation
- Investigating the policy challenges and reforms for providing financial services to working children

2. Literature Review

There are enormous literatures in economics on household saving. However, there are very limited numbers of studies mentioning the factors influencing the children to save. Moreover, no literature has been found on vulnerable working children's savings activities. Hence, this study is expected to contribute in the literature of saving behaviour of this vulnerable group.

As mentioned earlier, there are very few literatures on children's saving; however, we found few studies on role of children in household savings. Peek (1974) has found thatgiven household income, an increase in household size reduces savings, but the number of children under age 18 has no significant effect on savings. He also showed that the number of young children aged 0 to 6 and 7 to 12 have a negative impact on asset accumulation, indicatingthat older children can work outside and generate income and thus can contribute to household savings as they earn more than they consume. Burney and Khan (1992) conducted a study based on 16580 households in Pakistan also found that dependency ratio have a significant negative influence on the household savings, and it is relatively larger for the rural households.

As noted previously, we found few literatures on factors motivating children's saving behaviour. Income, perceived need for money, bank accounts, self-control and future orientation are the factors that motivate ability to save in childhood and adolescence (Webley&Nyhus, 2006). Shimet al, (2010); Otto et al. (2006) found thatmotives, self-control, saving attitudes are important factors affecting the willingness to save in childhood and adolescence. Educational qualification of the parents and the childrenare also found to be crucial factors in explaining the saving behaviour of children.Black and Devereux (2011) documented that the existence of strong positive intergenerational educational attainment has a clear implications for future income and savings.

A number of literatures have found that parents' role in motivating children to save is an important determinants for influencing children's saving attitude. Using U.S. data, Knowles and Postlewaite (2004) mentioned that parents' saving behaviour impacts the saving behaviour of their adult offspring. They use data from the U.S. PSID to estimate family savings effects, which are found to be economically and statistically significant.Shim et al. (2010) argued that impact of parents' financial attitude on children's financial behaviour is greater than work experience and high school financial education.Batty et al. (2015) also found that social and familial influences result in particular financial behaviour before children are formally educated. It is therefore likely that parental financial teaching is more effective than general financial education.Bucciol and Veronesi (2014) found that parental financial teaching increases the probability to save by 16% and their saving amounts by about 30%. Webley and Nyhus (2006) argued that as making financial decisions in childhood increases both the experience in making financial decisions as well economic skills, it is expected to have a positive impact on the future saving and borrowing behaviour.

Number of studies such as Friedline et al. (2011), Salikin et al. (2012), Jamal et al. (2015),Karunaanithyet al. (2017)examined determinants influencing the saving behaviour of

adolescent and young children. The studies found that family influence, peer influence and financial literacy played an important role in this regard. It is also found in some of the studies that adolescents had more savings accounts and live in households where head of household was married, had more education and owned assets. Salikin et al. (2012) revealed that parents' education background affects respective percentage and purposes of savings. If parents have higher level of educational background then students separate lower amount for savings.

Spending behaviour of children also believed to have important influence on their saving attitude. Otto et al. (2006) conductedan experimental approach on 42 children to investigate children's motivation to save in the context of saving for a toy when faced with income uncertainty. The results showedthat children aged 12 or more frequently saved as a means to avoid the temptation to spend on miscellaneous items, for example, sweets. In another study in 2013 he concluded that children's and adolescents' ability and willingness to save did not only develop as a result of social learning (i.e. observation of role models) and direct teaching (such as explanations and guidance with regard to the spending and saving of pocket money or allowances). Skills and attitudes related to saving were indirectly related to parenting behaviours which led to higher self-efficacy beliefs, better self-regulation strategies, and more independent economic behaviour.

Based on the studies mentioned above we have found that factors influencing children's saving behaviour are different in nature compared to traditional household saving theories though some of the factors such as income, spending behaviour, educational qualification may be similar to household saving determinants. However, the socio economic characteristics of parents are one of the important factors while explaining the children's saving attitude. Having explored the determinants of saving behaviour of children in literature, in Section 5 we investigate the factors that play important role in determining the saving behaviour of vulnerable working children after discussing the data and analytical framework.

3. Data and Definition

This research uses primary data of 400 vulnerable working children in 2016 surveyed by the Institute for Inclusive Finance and Development (InM). The survey collected data throughout in four districts; Dhaka, Comilla, Chittagong and Khulna. In this research we refer to savings as accumulation of financial asset; i.e. savings of cash.We also define children as per the 'Section 4 of Children Act, 2013 Bangladesh' which says that anyone under the age of 19 is considered as a child. The law also mentions that children may only work in specified occupations, for a limited number of hours per day, if they are more than 15 years old. It is important to note that all the children surveyed for this study are working and aged 9-18.

Majority of the children in the sample suffer from severe impoverishment, with little or no education and started working at early age with bare minimum wage to support their family. The data shows 75% of vulnerable working children are below the age of 16 earning around $44 per month, compelled to involve in various occupation even if the law does not permit it. Majority of them provide financial support to their family. As they are supporting their family from early age only 12% of them could complete their primary education.Around 75% of the children started working from the age of 13 or less. Around 85% of the children working as labour in different sectors and 10% of them are involved in risky activities such as machine and engineering workshop and plastic industry. However, 25% of the working children were still continuing with studies beside work while the survey was conducted. Also it is found that majority of the children lives in slums with their parents. More than 90% of the children seldom have animal protein such as meat or fish while around 25% of the children cannot afford to have three times meal.

4. Analytical Framework

Various consumption/savings hypotheses have been developed in economicsover the decades such as the Absolute Income Hypothesis of Keynes, the Relative Income Hypothesis (RIH) of Duesenberry, the Permanent Income Hypothesis (PEH) of Friedman, and the Life Cycle Hypothesis (LCH) of Ando-Brumberg-Modi. Our objectiveis to find out a savings function which can explain the determinants of savings of low income working children. We start with simple Keynesian theoryassuming that savings is a function of disposable income.

$$S= f(Y)$$

Since Keynes's General Theory, disposable income has been taken tobe the main, but not the only, determinant of saving. The propensityto consume is also important in this regard.To reflect that factor, in this model we intend to include expenditure pattern of children and whether that has any impact on savings. In addition, we include some socio-economic characteristics and family characteristics of the children.

While analysing the determinants of savings for working children we need to keep in mind that if we analyse the impact of income on savings only for those who are already involved in savings then our analysis will be incomplete in a significant way. We can assess the impacts of income and socio economic characteristics in two ways. We can observe thatchildren who already have some savings and now if their income increases,their saving will also increase but of course not in the same rate. This means if income has a positive impact on savings we would observe that amount of savings will increase for the child who are already engaged in savings. However, increase in income can also occur when a child was not engage in savings prior increase in income and with the increase in income now it has participated in saving activities. To find out the impact of income on savings first we need to address these two different outcomes. The first one involves those who are already involved in savings prior to increase in income; what we want to know is how income impacts the amount of savings once they experience increase in income. The second one, involves those children that were not engaged in saving activities prior to increase in income, what we want to know is how increase in income will influence the children to participate in saving activities. These two types of outcome will together constitute the total impact of income on savings. The similar holds true for all other variables we intend to include in the model such as pattern of expenditure and socio economic characteristics of children and their family. Now we need an econometric model that can separate the decision making process into two parts: the participation decision and the amount decision. In this case it means a child first decides whether to save or not and those who decide to save how much money they are going to save. So, our econometric model must be able to address these two events together.

One common approach to model phenomena that give rise to this type of problem is to use the tobit model. If the decision to participate in the market is decoupled from the amount decision, then the tobit model is inappropriate. In these cases, the Truncated Normal Regression (TNR) model presented in Cragg (1971) is an appropriate alternative to the tobit model. To describe this model we follow Osmani (2015) and Wooldridge (2010).

It is important to note that; here we define the savings by the amount of savings a child has which is a continuous variable. Let us denote it by θ. Suppose λ is a binary variable that determines whether θ will be zero or positive: $\lambda = 0 \rightarrow \theta = 0$ and $\lambda = 1 \rightarrow \theta > 0$. In this case, the binary variable $\lambda$is the participation dummy which can take the value 0 or 1 which means that the children who have decided to participate in the saving activities will take the value $\lambda = 1$ and $\theta > 0$, and the children those decide not to participate will take the value $\lambda = 0$ and which eventually means $\theta = 0$. However, if it decides to participate we need to introduce a non-negative continuous variable which can be

denoted as θ*, It is to mention that θ* can only be observed when λ = 1 in which case θ* = θ. Now θ will generate the following equation:

$$\theta = \lambda . \theta^* \qquad \cdots(1)$$

Thus, the variable θ is an outcome of two separate processes - λ and θ*. The participation decision λ depends upon a set of explanatory variables denoted by the vector n, and θ* depends on a set of explanatory variables denoted by the vector x. The vectors n and x can be indicator partially identical or can also be completely different. The two variables λ and θ*also have two very different probability distributions. There are two estimating equations for the two parts of the model. In the first part, the participation decision can be estimated either with a logit or a probit model. In this paper we use the probit model in which the probability of participation is given by $P(\lambda=1 | n)\Phi(n\Omega)$, where Ω is the vector of parameters associated with the explanatory variables n, and Φ(·) is normal probability distribution. The estimating equation is:

$$\lambda = n\Omega + \epsilon \qquad \cdots(2)$$

The second equation will only be valid if we have θ>0;the estimating equation can be written as

$$\theta = x\beta + u \qquad \cdots(3)$$

Here, β is the vector of parameters associated with the explanatory variables x and, crucially, u follows a distribution that allows for only positive values of θ. In this paper our explained variable is amount of savings of a child. So it will take the value 0 if the child is not involved in saving activity and it is take positive value if the child is involved in saving activity. We intend to use truncated normal regression model for the analysis of determinants of savings.

Estimating Marginal Effects

It is important to note that, while truncated normal regression we do not get the marginal impact of explanatory variables on explained variable. We can only derive the direction and signs from the regression.To get the marginal effect we have to use the 'margins" command.Marginal effect is defined as the change in the expected value of due to a small change in an explanatory variable, given the values of other covariates in and x. One potential complication here is that in the case of corner solution models one can find two different definitions of marginal effect in the literature corresponding to two different concepts of expected value of θ – called conditional and unconditional expectations. Conditional expectation is denoted as E(θ | n, x, θ>0) and stands for the expected values of θ only for the participants i.e. only for observations with positive values of θ. Unconditional expectation is denoted as E(θ| n, x) and stands for the expected value for the entire sample, including both who are at a corner solution (i.e., θ = 0) and those who are at the tangency solution (i.e., θ>0). Clearly, it is the latter concept that is relevant for estimating the total effect of explanatory variables – encompassing both direct and indirect effects discussed above.

For truncated normal regression modelthe unconditional expectation is given by the following expression (Wooldridge 2010):

$$E(\theta \mid n,x)=\Phi(n\gamma)[x\beta + \sigma\lambda(x\beta/\sigma)] \text{ --- } (4)$$

where, σ is the standard deviation of the error term u in equation (3), λ is the Inverse Mills Ratioobtained from equation (3), and other symbols are defined as before. As can be seen from (4), parameter estimates from both equations (2) and (3) are needed to calculate $E(\theta \mid n,x)$ and hence to obtain the marginal effects. We first obtain two different estimates of $E(\theta \mid n,x)$ using expression (4) – one by setting the value of saving variable to 1 for all observations, and the other by setting the value to 0 for all observations, keeping the values of all other covariates as they are, yielding, say, $E_1(\theta \mid n,x)$ and $E_0(\theta \mid n,x)$ respectively. The marginal effect of saving is then given as:

$$ME= E_1(y \mid z,x)\_E_0 (y \mid z,x) \text{ --- } (5)$$

For the continuous case, marginal effect is given by the first partial derivative of (4), which is given by the following expression when the explanatory variable in question is indexed by j:

$$ME_j = \gamma_j\phi(n\gamma)[x\beta + \sigma\lambda(x\beta/\sigma)]+ \Phi(n\gamma).\beta j\ \Omega(x\beta/\sigma) \text{ --- } (6)$$

$$\text{where, } \Omega(x\beta/\sigma) = 1 \_ \lambda(x\beta/\sigma)[(x\beta/\sigma)+ \lambda(x\beta/\sigma)] \text{ --- } (7)$$

From each of equations (5) and (6), we get one value of marginal effect for each observation, corresponding to the values of the covariates (n, x) taken by that observation. In order to get the overall marginal effect, we need to take the mean of all these individual marginal effects - called the average marginal effect (AME). It is these AMEs that we report in result and discussion section when wediscuss the effect of explanatory variables on savings. In order to assess the statistical significance of these AMEs, we also need to calculate their standard errors. In the absence of any simple closed form expression for these standard errors, we chose to apply the bootstrap method to estimate them.

There remains the task of decomposing the marginal effect into two parts - namely, the direct effect and the indirect effect discussed earlier. Textbook discussions of marginal effects do not deal with this decomposition, but this can be done fairly easily by using the following relationship between conditional and unconditional expectations of θ :

$$E(\theta \mid n,x)=\Phi(n\gamma)E(\theta \mid n,x, \theta>0) \text{ --- } (8)$$

For simplicity of notation, let us denote conditional expectation $E(\theta \mid n,x, \theta>0)$ as C, unconditional expectation $E(\theta \mid n,x)$ as U, and the probability of participation in saving activity $\Phi(n\gamma)$ simply as Φ. Equation (8) can then be rewritten as:

$$U= \Phi.C \text{ --- } (9)$$

Using these notations in the expression for marginal effect (for the discrete case) given by (5), and using subscript 1 for the case where all observations are assigned the value 1 for the saving variable and subscript 0 for the case when all observations are assigned the value 0, we can write

$$ME=U_1-U_0= \Phi_1.C_1- \Phi_0.C_0 \text{ --- } (10)$$

Using the notation Δ to represent change (so that $\Delta C = C_1 - C_0$ and $\Delta\Phi = \Phi_1 - \Phi_0$), expression (10) can be rewritten after some manipulation as:

$$ME = \Phi_1.\Delta C + \Delta\Phi.C_0 \text{ --- (11)}$$

Equation (11) provides the desired decomposition of the marginal effect. The first part ($\Phi_1.\Delta C$) is the direct effect, which stems from the change in conditional expectation i.e., from the change in the amount decision made by those children who are 'participating in saving activity'. The second part ($\Delta\Phi.C_0$) is the indirect effect, which represents the additional change in the amount of savings that stems from the change in the probability of 'participating in saving activity'. We have also decomposed the marginal effect measured in proportional terms i.e., as percentage of U_0:

$$ME/U_0 = (\Phi_1.\Delta C)/U_0 + (\Delta\Phi.C_0)/U_0 \text{ --- (12)}$$

5. Results and Discussion

Impact of Socio-Economic Characteristics on Saving Pattern of Vulnerable Working Children: Descriptive Statistics and Analysis of TNR Model

Our study shows that around 25% of working children do save in various places. About 45% of them save the money at home or in a secret pot. Only 20% of the children trust their parent with the savings. Rest of the children keep their savings to friends, shopkeeper or neighbour. This indicates that they lack a secure place to keep their hard earned money. Table-1 reported the descriptive statistics of few socio economic characteristics of the working children in the sample. Our analysis suggests the characteristics of the savers are different than non-savers in terms of income and family characteristics.Average monthly income of savers is higher than the non-savers. Also females have inclination towards savings than males. The differences in the financial behaviour of the child's familyare also observed between the savers and non-savers.Children belong to the family having savings have less tendencies to save. The opposite trend is also observed in case of families who took loan. It might indicate that families having strong financial background (such as families having savings, families with no debt) may provide the children a sense of financial security which might lead them to think that there is no incentive for them to save.

Table-1: Socio-Economic Characteristics of Vulnerable Working Children

Characteristics of Savers	Savers	Non-savers
Male Children	64.95	75.08
Average Monthly income (in BDT.)	4136.99	3599.68
Children works in industry sector (percentage)	23.71	19.02
Children works in service sector (percentage)	21.65	18.36
Children having multiple earning (Percentage)	8.25	5.57
Children supporting families (Percentage)	58.76	68.20
Years of Education	3.59	3.34
Children's' Family have Savings (Percentage)	14.43	24.59
Children's' Family have taken loan (Percentage)	51.55	45.25

InM Field Survey (2016)

We have estimated a participation equation and an amount equation for the socio economic factors influencing saving behaviour of the children. The estimated coefficients of the equations are given in Table 2. We have also calculated the marginal effects for both the equation in Table 3. As can be seen from the table, income has a positive impact on both the decision to participate in the saving activity and to increase the amount of savings for those who save, and both these impacts are highly statistically significant. The result for marginal effects shows that 1% increase in income increases the probability to participate in saving activity by 0.08% and for those who already save, 1% increase in income expected to increase the savings by 0.39%. It is obvious asmany children not interested to participate in saving activity (as they have less income) may save now if they experience increase in income.And those who already savemight be encouraged to save more, if they start earning more. We also observe that family characteristics play an important role in deciding to save or not to save. If the children have educated fathers they tend to have better knowledge about benefits of savings. Hence, we found significant positive impact of fathers' education on saving behaviour of children thought in a small magnitude. However, the financial background of family is important factor in influencing children to save. We found that if the family has saving, the children are 0.12 % less likely to save. Also we found that children those who save, are expected to decrease their savings by 0.56%.

Table-2: Estimates of Truncated Normal Regression on Savings

Explanatory Variables	Participation Equation		Amount Equation	
	Coefficient	Std. Error	Coefficient	Std. Error
Yearly Income (log)	0.2840**	0.1590	0.8999***	0.3653
If the child is male (dummy)	-0.2656	0.1780	-0.5921	0.4061
Years spent in education (child)	-0.0051	0.0315	-0.0014	0.0697
Years spent in education (child's father)	0.0519**	0.0305	0.1350**	0.0704
If the child's family has savings (dummy)	-0.4591***	0.2060	-0.9059**	0.4250
If the child's family has taken loan (dummy)	0.3112***	0.1609	0.6472**	0.3516
If the child spends on lumpy items (dummy)	-0.3619***	0.1803	-0.7966**	0.3894
Family Size	-0.0430	0.0588	-0.0708	0.1272

Author's Calculation

Table-3 : Average Marginal Impact of Socio-Economic Characteristics on Savings

	Marginal effect on participation in saving activity	Marginal effect of amount on savings upon participation
Yearly Income (log)	0.0851	0.3954
Years spent in education (child's father)	0.0155	0.0685
If the child's family has savings (dummy)	-0.1236	-0.5692
If the child's family has taken loan (dummy)	0.0933	0.3901
If the child spends on lumpy items (dummy)	_0.1018	_0.4592

Author's Calculation

This is expected as these children will have family support while they will be in financial need. Hence motivation for saving is less for them compared to the children having no family savings. The issue of financial stability of family is further validated when we observe the relationship between saving behaviour of child and loan activity of the child's family. We found that if the family have loan the probability to participate in saving activity significantly increases along with the amount of saving. This might point to the fact that children may save if they realise that their family is in debt and they have to support themselves and their family when it is needed. It is observed that pattern of savings also depends on pattern of expenditure. We have found that 1% increase lumpy expenditure (i.e. spending on movies, street food and other miscellaneous expenditure) decreases the probability of participating in the saving activity by 0.10% and forthe children already engaged in savings, it is expected that it will decrease the amount of savings by 0.45%.

Factors influencing Utilisation of Savings: A Gender Based Investigation

Our analysis shows that saving performance of male child significantly different than female child in terms of utilisation. The data shows that the average amount of savings at the time of survey for male child was around BDT.4400 compared to BDT.2500 for female child though our econometric analysis did validate there is no significant relationship between saving status and gender. However, in terms of utilisation of savings, female are found to be more productive than males. Table-4 shows that male savers utilise the savings more for consumption purpose. Around 60% of male child confirms that they spent savings on consumption. On the other hand, for females the pattern is significantly different. Around half of the female savers utilise the savings for meeting education expenses such as paying admission fees or exam fees for SSC or HSC exam.

Table-4: Utilisation of Savings: By Gender

Saving Utilisation	Male (in %)	Female (in %)
Consumption	60.00	23.08
Education	6.67	46.15
Treatment	2.22	0
Investment in Business/Agriculture	4.44	15.39
Expenditure on Festivals	13.33	7.69
House repair	6.67	0
Support Family Financially	4.44	0
Others	2.23	7.69

InM Field Survey (2016)

It is important to note that female children are found to be better investor too. Around 15% of the female savers invest the money in businesses such as buying sewing machine for tailoring businesses or buying any agricultural instrument for family member. On contrary this figure is only 4% of the males. The analysis also shows that male utilise their savings to support their family. For example they repair the house or help the family member financially when needed or spend for family members during festivals. It is expected because in the cultural context of Bangladesh families expect the male child to bear the household expenses which are usually are not expected from female child. Hence we observe male savers do utilise savings on household expenditure or personal consumption whereas female children invest their savings on education or business.

A probitregression analysis has been conducted in Table-5 to examine the association between saving utilisation (the dependent variable and the role of gender.We have also included ‘amount of savings’ as one of the independent variables. As ‘amount of savings’ is an endogenous variable which means that this is determined by some other factors and may be correlated with the error term, therefore a proper instrument is required to correctly capture the effect. Here ‘amount of yearly income’ has been used as instrumental variable. As the variable represents information about saving behaviourwe believe this is a proper instrumental variable that can signify the variable ‘amount of savings’. Instrumental variable estimation can be applied to improve the causal effect of treatment on the outcome. This estimate can be interpreted as a causal effect for the part of the population whose participation in the treatment was affected by the instrument (Becker, S. O.,

2016).Using this instrumental variable, we proceed by applying a probit model with continuous and binary endogenous regressors (ivprobit) in this context.

Table-5: Estimates of Instrumental Probit Regression on the Effects of Gender on Savings Utilisation

Variables	Coefficient of ivprobit (if saving utilised on consumption=1, otherwise 0)	Marginal Effects	Coefficient of ivprobit (if savings utilised on Education=1, otherwise 0)	Marginal Effects
Gender	.7911656***	.3014579	-.8911992***	-.2780455
Amount of Savings (log)	.3234712	.1284013	-1.04552***	-.3042653
Years of Education	-.1226926**	-.0487026	.1737177***	.050555
If the child supports family	.7119426***	.2730965	.1418421	.0406422

Note: *** p<0.01, ** p<0.05, * p<0.1,

We intend to run two instrumental probit regressions; One indicating the association between saving utilisation on consumption and other socio economic behaviour of child and other indicating the association between saving utilisation on education and other socio economic characteristics of child.

Our econometric analysis of validates the results of descriptive analysis. It shows that the male child will spend the savings on consumption is expected to be higher than female by 0.30%. On contrary in the case of spending on education we find a different scenario. We observe that the female child utilising their saving on education increase by 0.27% than that of male child. Amount of savings and years of education and children supporting their family also play important role in this case. The result shows if saving amount increases by 1% the utilization of that savings on education expected to decrease by 0.30%. However, the impact is insignificant in the case of saving utilisation on consumption. This may indicate that higher savings may not be very important factor for spending on education. Rather it is the preference of the children that matter in this case. Hence, savings may be utilised in meeting big expenses like repairing house or meeting investment demand. On the other hand, the more time invested in education, the higher the probability of utilising savings on education. It shows that 1 additional year of education may increase the utilisation of savings on education 0.05%. However, the result also shows a significant inverse relationship between the years spent on education and savings spent on consumption which is expected because years spent on education is directly correlated tochild's hour spent on work. Our data also support this fact. Also the fact that a child is earning from a early age signifies the fact that maybe s/he needs to support the family with the basic consumption needs. Hence, even if the child saves, the saving goes for consumption purposes.

Financial Inclusion of Vulnerable Working Children: ProspectsandChallenges

The analysis of the study shows that being able to save, make the children better off in terms of coping with the shocks. It also enables them to attain more education. The impact of savings is even better for female child in terms of utilisation. Our result shows that only 25% of the sample is saving informally. Is it possible to bring them under formal saving mechanism? The result of the survey confirms that around one fourth of the children who saves informally do not wish to save in formal institutions as they think its troublesome to go to bank and go through all the complex procedure for savings. Also they believe bank officials will be reluctant to provide them service considering their socio-economic status. The perception about formal financial institutions in the eyes of low income people is an important issue in this context.The rest of the informal savers wish to avail formal financial services but do not know the procedure. Also there are some regulatory and legal constraints. According to Bangladesh Bank's regulation, minors cannot open a bank account without parent's signatureand operate it by themselves without parents' consent even though it is legal to join work in specified occupations, for a limited number of hours per day, if they are more than 15 years old. However, majority of the parents of these children feels hesitated to visit banks and also they cannot afford to spare time to go to banks which often might lead to loss of their income considering their pattern of job. Also the scope for school banking is limited for these children as either they do not go to school or they go to only informal schools as they have to continue working to survive themselves.

In this backdrop, Bangladesh Bank initiated banking for working street children through a circular in March 2014 which allows children to open savings accounts with participating banks through selected NGOs for as little as BDT.10 (USD 0.12).To operate the saving accounts of children co-signature of a NGO staff is needed till the children turn 18 since there are a significant number of cases where the child is an orphan or has been forced to leave home or parents are not just interested to open a bank account for the children. This study also conducted some FGDs with the NGOs to understand the performance of the accounts. The findings suggest that initially it was going well as it was tagged with a programme funded by the Save the Children. Later on, when that programme phased out, the NGO staffs lost their interest within a short period of time as they would not be paid for monitoring and facilitating the savings account for children. If they were to continue this work, they would have to do it voluntarily with their own responsibility. Under this circumstance, children were asked to continue their accounts with the help of their parents. Consequently, majority of the accounts became inactive in absence of legal guardians or no cooperation from the legal guardians.

To deal with this issue one option could be enabling NGO-MFIs to serve the children directly with savings account as they go to doorstep of the poor to provide financial services. However this is again not possible due to regulatory restrictions in MRA Rules 2010 which says MFIs cannot mobilise funds through offering different savings products. Despite considerable attempts to foster financial inclusion of vulnerable working children, these challenges from supply sideshinder the process of inclusion.

6. Conclusion and Policy Recommendation

Savings enables the low income working children to improve their lives by increasing their financial security, enhancing their financial capability, and improving their educational outcomes. Our study shows that 25% of working children do save informally in difference places indicating severe lack of secure place to keep their hard earned money. It is observed that savers are significantly different than non-savers in terms of income and family characteristics. It is observed that income has a positive impact on both the decision to participate in the saving activity and to increase the amount

of savings for those who save, and both these impacts are highly statistically significant.Also it is found that the financial background of family is important factor in influencing children to save. This is expected as these children will have family support while they will be in financial need. Hence motivation for saving is less for them compared to the children having no family savings. The issue of financial stability of family is further validated when we observe the relationship between saving behaviour of child and loan activity of the child's family. We found that if the family have loan the probability to participate in saving activity significantly increases along with the amount of saving. This might point to the fact that children may save if they realise that their family is in debt and they have to support themselves and their family when it is needed. The utilisation pattern of savings is different for male child compared to female child. It is found that the probability that male child will spend the savings on consumption is higher by 0.30% than female child. On contrary in the case of spending on education different scenario is found. It is observed that the female child utilising their saving on education is higher by 0.27% than that of male child.

As this study validates that provision of savings can bring a significant change to the life of low income vulnerable working children policy reforms should be made so that these children can cope with the vulnerabilities they face in their day to day life. Initially a pilot can be done only on female children worker as they proved to save more efficiently. Later on it can be expanded to other groups irrespective of gender. Moreover, regulatory reforms such as allowing children to operate their own account at certain age (may be 15) if they are involved with any employment as they are responsible for their own or their family's livelihood. The demand deposit products maybe the best option for them as it will allow them to deposit money and withdraw it for a certain number of times in a month.Providing the children with the access to mobile account can be another option to promote savings. Our data shows that more than 50% of the children could save less than BDT.2000 at the time of survey. Moreover, cost is also associated with the working children if they have to visit the bank frequently. Also they may hesitate to go to bank. Considering these issues, mobile banking might be a better option for them to save. They can save small amount in their account and withdraw the money during their need. However, the requirement of providing National Identification Card for opening a mobile account is mandatory in the existing regulation and it is only available for the adult population. To increase the penetration of savings through mobile account, NID can be made available at the age of 15 or some other identification document can be introduced such as birth certificate. Finally, the existing option of providing financial services of banks through NGO-MFIs can be revitalized. As the major problem of this model was a lack of financial incentive for NGO-MFIs, Bangladesh Bank may ensure that banks utilise a part of their CSR fund for this purpose. The present study shows that the vulnerable working children do save though they are mostly micro and short run savers; however, they are very effective in utilising the savings. Therefore, proper policy and regulatory measures aiming to foster financial inclusion of children should be able to strengthen their entrepreneurial potential and financial capability.

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