Development Dialogue (Dhaka)
Proceedings of the 1st Development Dialogue
31 May 2025-01 June 2025, Dhaka, Bangladesh
ISSN: 3105-6989 (Print), 3105-6997 (Online)
DOI: https://doi.org/10.64101/dd.202509.05
National Academy for Development Administration (NADA)
www.nada.gov.bd

The impact of social protection programs on the household savings behavior in Bangladesh

Sayla Sowat Siddiqui, PhD[1]
Tanvir Bashar[2]
Samanta Islam[3]

Abstract

This paper studies the association between social protection programs and the household savings behavior in Bangladesh. In this study, we use the data of the Bangladesh Integrated Household Survey (BIHS), conducted by the International Food Policy Research Institute (IFPRI). Using the extensive, representative survey of the rural households for the year 2011, 2015 and 2018, we estimate the effect of receipt of social protection by households on the household savings behavior. Our fixed effect model finds that the reception of social protection by the households is significantly and positively associated with likelihood of savings by the households. The coefficient of the social protection dummy in the fixed effect model is 0.0278 (significant at 5%) implying that not receiving of social protection to receiving of social protection increases the probability of savings by 2.78 percentage point.in Bangladesh. This outcome is important for the policymakers as it provides insights into whether social protection programs encourage financial resilience and how program design can improve household economic behavior.

Keywords: Household savings; Social protection
JEL classification: D13, I13, I31

1. Introduction

Household savings play a crucial role in economic stability and financial resilience, enabling families to cope with income shocks, invest in human capital and improve long-term financial well-being. In developing countries like Bangladesh, where a significant portion of the population relies on informal labor markets and lacks access to formal financial services, savings behavior is particularly critical (Banerjee & Duflo, 2011). However, many low-income households struggle to accumulate savings due to income volatility, high consumption needs and limited access to financial instruments (Morduch, 1995). Social protection programs aim to alleviate such constraints by providing financial support to vulnerable populations, potentially influencing their savings decisions (Barrientos & Hulme, 2009).

1 Assistant Professor, BRAC Business School, BRAC University
2 Deputy Chief, General Economics Division, Bangladesh Planning Commission & PhD Candidate, The Australian National University, Australia
3 BRAC Business School, BRAC University, Dhaka, Bangladesh

Bangladesh has implemented various social protection initiatives under its Social Security Policy Support (SSSS) Program, targeting low-income households through cash transfers, stipends, health vouchers and food security schemes (Rahman & Choudhury, 2020). These programs are designed to mitigate poverty, reduce income inequality and enhance financial security (World Bank, 2018). While social protection primarily serves as a consumption-smoothing mechanism, it may also have a broader impact on household financial behavior, including savings accumulation. Theoretically, receiving social assistance can either increase savings—by reducing liquidity constraints and allowing households to set aside funds—or decrease savings if beneficiaries perceive these transfers as a substitute for precautionary savings (Chetty & Szeidl, 2007).

This study examines the impact of social protection programs on household savings behavior in Bangladesh using data from the Bangladesh Integrated Household Survey (BIHS) for 2011, 2015 and 2018. By employing a fixed effects (FE) model and an instrumental variable (IV) approach, this paper seeks to establish whether social protection encourages households to save and, if so, to what extent. Our fixed effect model finds that the reception of social protection by the households is significantly and positively associated with likelihood of savings by the households. The coefficient of the social protection dummy in the fixed effect model is 0.0278 (significant at 5%) implying that not receiving of social protection to receiving of social protection increases the probability of savings by 2.78 percentage point.in Bangladesh. In the second stage least square model, the instrumented Social Protection Dummy remains positively associated with savings. Using social protection coverage (percentage of households receiving social protection) as the instrumental variable we find that receiving social protection increases the probability of saving by 0.673 (significant at 1%). The findings provide valuable insights for policymakers regarding the role of social protection in enhancing financial resilience and promoting economic stability.

This study contributes to the literature in several ways. Firstly, it provides empirical evidence on the impact of social protection programs on household savings behavior in Bangladesh using panel data. Secondly, few studies utilize panel data and rigorous econometric techniques, such as fixed effects and instrumental variable approaches, to identify causal effects. Thirdly, existing literature has not fully explored heterogeneity in savings responses based on income levels and financial access.

The remainder of the paper is structured as follows: Section 2 presents the conceptual framework underpinning the study. Section 3 describes the data and summary statistics, while Section 4 details the empirical methodology and discusses the results. Section 5 concludes with policy implications and suggestions for future research.

2. Conceptual framework

To understand the effect of social protection programs on household savings behavior we are required to review the extant theoretical and empirical studies. This section presents relevant literature on social protection, savings behavior and their linkages.

The primary purpose of social protection programs is to reduce poverty and income inequality through cash transfers, social pensions and food subsidies. These programs can influence household savings behavior through multiple channels. Theoretically, social protection may either encourage or discourage savings. On one hand, cash transfers and social assistance relax liquidity constraints, enabling households

to save (Barrientos & Hulme, 2009). On the other hand, if households perceive social protection as a stable source of income, they may reduce precautionary savings (Chetty & Szeidl, 2007).

Empirical studies have found mixed evidence on the relationship between social protection and savings. A study on Brazil's Bolsa Família program found that cash transfers increased household savings and investment in productive assets (Glewwe & Kassouf, 2012). Tovar & Urrutia (2015) find that that families that receives health benefits save more than non-recipients because recipients favorably adjust their expenditure patterns. Similarly, in Mexico, Progresa (now Prospera) beneficiaries showed higher savings and human capital investment (Gertler et al., 2009). However, other studies have shown that social protection can lead to a reduction in savings, particularly in contexts where recipients rely on transfers as a primary source of income (Kabeer et al., 2012). Gunatilake (2016) no significant relationship between the social safety net and precautionary motive savings of households in rural Sri Lanka.

Several economic theories provide insight into how households make savings decisions in response to social protection programs. The life-cycle hypothesis (LCH) model suggests that individuals plan consumption and savings over their lifetime to maintain a stable standard of living (Modigliani & Brumberg, 1954). If social protection benefits are viewed as transitory income, households may choose to save rather than spend these funds. Similarly, the Permanent Income Hypothesis (PIH) (Friedman, 1957) argues that individuals base their consumption and savings decisions on their long-term income expectations. If social protection transfers are perceived as temporary, households may choose to save a portion of the funds rather than increase immediate consumption (Deaton, 1991). Thus, households with limited access to credit and financial services may benefit more from social protection in terms of savings accumulation.

The Precautionary Savings Theory (Carroll & Kimball, 1996) posits that households save to guard against income uncertainty and future financial shocks. Social protection programs can affect precautionary savings in two ways. On one hand, they may reduce the need for precautionary savings by providing financial security, thereby discouraging saving. On the other hand, if households use these transfers to invest in income-generating activities, social protection could enhance their ability to save (Gertler et al., 2009). Empirical studies from other developing countries suggest that cash transfer programs often lead to increased savings and productive investments (Barrientos & Scott, 2008; Kabeer et al., 2012).

The Liquidity Constraints theory relates how the ease in liquidity constraint can encourage savings in Bangladesh. Many low-income households in Bangladesh face liquidity constraints that prevent them from saving (Dupas & Robinson, 2013). Social protection benefits may relax these constraints by providing disposable income that households can allocate toward savings (Banerjee et al., 2015). Additionally, behavioral factors such as mental accounting and self-control play a role in savings behavior (Thaler, 1990). Households receiving social protection might be more inclined to save if the funds are perceived as a separate income stream rather than part of their regular earnings (Ashraf et al., 2006). Thus if social protection relaxes liquidity constraints and enhances financial security, we expect a positive relationship between benefit receipt and savings.

In summary, the extant theoretical framework conjecture that social protection increases the savings behavior in a low-income country like Bangladesh.

Studies from various developing countries provide insight into how social protection influences savings behavior. For example, in Kenya, a study by Dupas and Robinson (2013) found that access to cash transfers enabled poor households to save by reducing immediate consumption pressure. In contrast, in South Africa, social pension schemes led to a decline in savings rates among older adults (Ardington et al., 2009), suggesting a substitution effect.

In Bangladesh, existing research has examined the impact of microfinance and social protection on financial inclusion. Rahman and Choudhury (2020) found that social protection programs increased financial resilience but had varied effects on savings across income groups. Households with higher financial literacy were more likely to save a portion of their transfers (Banerjee et al., 2015).

While numerous studies have explored the relationship between social protection and household savings in several other countries, limited research examines the long-term effects of social protection on savings behavior in Bangladesh.

3. Data and summary statistics

3.1 Data

The data is collected from the Bangladesh Integrated Household Survey (BIHS) for the years 2011, 2015 and 2018. The International Food Program Research Institute (IFPRI) organizes the household survey. The first round of the survey was conducted from November 2011 to March 2012. The second round was carried out from January to June 2015 and the third round from November 2018 to May 2019. All the three rounds have been used in this study. The survey contains wide-ranging data at the household member level and covers the sample households over the sample timeframe. The sample consists of 6,500 households taken from 325 Primary Sampling Units (PSUs) or 323 villages out of 68,000 villages. From the 2011/12 baseline survey to the 2015 midline survey, attrition of 4.41 percent of the sample of 5,503 households surveyed is experienced and from the 2015 midline survey to the 2018 midline survey, the number of households surveyed reduced to 4,626 for the rural nationally representative sample.

Our primary variable of interest is the savings by the household. The savings data section of BIHS data provide a detail information on various types of savings that the households do. To measure the savings, we use two procedures. Firstly, we use Savings dummy as an indicator variable equal to one if the household had savings in the corresponding year, otherwise zero. Secondly, we take the total savings amount of the household. The variable is measured in Bangladeshi Taka (BDT), using 2018 prices to correct for different inflation rates in 2011, 2015 and 2018. We then divide the total savings amount of the household by the household size. This provides us the Percapita savings.

BIHS provides information on the participation in social safety net programs by the sample households. It provides different types of programs such as stipend for secondary and higher secondary/female Student, maternal health voucher scheme and community nutrition program etc. My primary explanatory variable is the dummy variable equal to one if any of the member of the household received Social Security Policy Support (SSSS) Program, otherwise zero.

The other control variables in the study are both the characteristics of the household and the household head. Both the Household and the household head characteristics are expected to have an impact on the savings behavior of the household. Household level variables include disposable income, household

size, dependency ratio and home ownership. Higher disposable income is generally associated with increased savings, as suggested by the life-cycle hypothesis (Modigliani & Brumberg, 1954). Households with greater income have a higher propensity to save after meeting basic consumption needs (Deaton, 1991). The BIHS data provides income from different sources. By adding all types of income we find the total income of the household which is used as the disposable income.

Household size is an important variable. Our conventional idea assumes that the bigger the household size, the higher is the likelihood of savings. However, Browning & Lusardi (1996) find that larger households often have higher consumption requirements, potentially reducing their ability to save. The BIHS data provides information by household members. By adding the number of members, we find the household size.

A higher dependency ratio—measured as the proportion of non-working members to working members—can place financial strain on households, thereby reducing savings (Schultz, 1998). Households with more dependents tend to allocate more resources to consumption rather than saving. Home ownership refers to a dummy variable equal to one if the house at which the household lives in is owned by them or their family. If the house is owned by them, the expenditure on rent is saved, which can increase saving. Therefore, home ownership is expected to be positively related to the dependent variable.

Household head's education plays an important role in the savings behavior. Higher education levels are typically linked to better financial literacy and improved long-term financial planning, leading to higher savings rates (Lusardi & Mitchell, 2014). Educated household heads may be more likely to engage in precautionary savings. Employment status is a key determinant of financial stability. Households with employed heads are expected to have a steady income stream, making it easier to save (Carroll & Summers, 1991). Here, the household head emp is a dummy variable equal to one if the household head is employed, otherwise zero.

Household head age influences the saving patterns based on life-cycle theory. Younger individuals might have lower savings due to early-career income constraints, whereas middle-aged individuals tend to save more as they prepare for retirement (Ando & Modigliani, 1963).

3.2 Summary Statistics

Table 1 presents the summary statistics for the key variables used in the analysis. The dependent variable, Savings Dummy, indicates whether a household engages in saving behavior. The mean value of 0.52 suggests that 52% of the households report positive savings, while the remaining 48% do not save. The standard deviation of 0.50 reflects the binary nature of this variable.

The per capita savings amount exhibits substantial variation, with a mean of 6,113.95 BDT and a high standard deviation of 25,775.31 BDT, indicating a skewed distribution with a few households saving significantly higher amounts. The Social Protection Dummy, which identifies households receiving social protection benefits, has a mean value of 0.26, implying that 26% of the surveyed households benefit from social protection programs.

Table 1: Summary Statistics

	Mean	Stdev	p10	p25	p50	p75	p90	N
Savings dummy	0.52	0.50	0	0	1	1	1	1860
Percapita savings	6113.95	25775.31	0	0	133.33	1795.38	13333.33	1860
Social protection dummy	0.26	0.44	0	0	0	1	1	1860
Disposable income	77887.29	92605.27	840	22960	57924	97704	168480	1860
Household size	3.05	0.42	3	3	3	3	3	1860
Dependency ratio	0.00	0.02	0	0	0	0	0	1860
Home ownership	0.01	0.11	0	0	0	0	0	1860
Household head edu	4.88	1.17	5	5	5	5	5	1860
Household head emp status	0.01	0.11	0	0	0	0	0	1860
Household head age	28.88	5.25	28	28	28	28	28	1860

Among the control variables, Disposable Income shows a mean of 77,887.29 BDT, but with a substantial standard deviation of 92,605.27 BDT, highlighting the income disparity across households. The average Household Size is relatively small, with a mean of 3.05 members and the Dependency Ratio is notably low, averaging 0.00, suggesting that most households do not have dependents. Additionally, only 1% of households report home ownership and 1% of household heads are employed, which may reflect a predominance of informal sector work or unemployment. The average Household Head's Education Level is approximately 4.88 years of schooling and the mean Household Head Age is 28.88 years, indicating a relatively young population.

4. Empirical framework and results

4.1 Empirical framework

To examine the impact of social protection programs on household savings behavior, we employ a fixed effects (FE) regression model. The primary specification is as follows:

$$Savings_{it} = \alpha + \beta 1\ Social\ protection\ dummy_{it} + \beta 2 X_{it} + \mu_i + \lambda_t + \varepsilon_{it} \ldots\ldots (1)$$

Where $Savings_{it}$ represents the savings behavior of household i at time t. The Savings $dummy_{it}$ is measured as a binary dummy (1 = household saves, 0 = otherwise). The Per capita $Saving_{it}$ is the total saving amount divided by the number of members of the household. Social protection $dummy_{it}$ is the key independent variable, denoting whether the household receives social protection benefits. X_it is a vector of control variables, captures household fixed effects, λ_t captures time fixed effects and ε_{it} is the error term.

The fixed effects (FE) model is chosen to control for time-invariant unobserved heterogeneity across households. By incorporating household fixed effects, we account for differences in household characteristics that do not change over time, such as cultural preferences, financial habits, or regional disparities. This approach helps isolate the causal impact of social protection on savings by mitigating potential omitted variable bias.

However, there remains a concern about endogeneity due to potential reverse causality or omitted time-varying factors that influence both social protection receipt and savings behavior. To address this issue, we employ a two-stage least squares (2SLS) instrumental variable approach.

To address endogeneity concerns, we use social protection coverage as an instrument for social protection receipt. The Coverage is measured as the number of household members receiving social protection benefits divided by the total number of members of the household. The 2SLS estimation involves two stages: In the first stage we estimate the likelihood of receiving social protection benefits using social protection coverage as an instrument.

$$\text{Social protection dummy}_{it} = \alpha + \beta_1 \text{ Coverage}_{it} + \beta_2 X_{it} + \mu_i + \lambda_t + \varepsilon_{it} \ldots\ldots (2)$$

In the second stage, we use the predicted values from the first stage to estimate the impact of social protection on savings.

$$\text{Savings}_{it} = \alpha + \beta_1 (\text{Social protection dummy}_{it}) + \beta_2 X_{it} + \mu_i + \lambda_t + \varepsilon_{it} \ldots\ldots (1)$$

The use of social protection coverage as an instrument is justified as it is correlated with actual receipt of social protection benefits but unlikely to directly influence household savings, other than through its impact on benefit receipt. The results from the 2SLS model allow us to obtain an unbiased estimate of the causal effect of social protection programs on savings. The relevance of social protection coverage is measured by the F-statistics of the first stage regression which is more than 10 in our estimation, implying it as a relevant IV and not a weak IV. We also confirm the exogeneity of the coverage by Hansen's J test, which also refers that our instrument is valid.

4.2 Empirical results

4.2.1 Baseline Regression Results

Table 2 presents the results from the fixed effects (FE) and Probit models examining the impact of social protection programs on household savings behavior.

Column 1 of the Table 2 shows the Fixed Effects Model, where Savings Dummy is the dependent variable. The Social Protection Dummy is positively associated with savings, with a coefficient of 0.0278 ($p<0.05$), indicating that households receiving social protection benefits are 2.78 percentage points more likely to save compared to those that do not. This finding supports the hypothesis that social protection enhances the household's ability to accumulate savings, potentially by providing financial stability and liquidity relaxation.

Among the control variables, Disposable Income has a positive and significant effect on savings (coefficient = 3.74e-07, $p<0.01$), suggesting that as household income increases, the probability of saving also rises. Household Size is marginally significant (coefficient = 0.00984, $p<0.1$), indicating that larger households may have a slightly higher tendency to save. The Dependency Ratio has a strong negative effect (coefficient = -4.337, $p<0.05$), implying that households with dependents are less likely to save, potentially due to higher consumption needs. Home Ownership also has a significant negative effect on savings (coefficient = -0.121, $p<0.05$), suggesting that homeowners may have higher fixed expenses that reduce their savings capacity.

Column 2 of the Table 2 reports the fixed effects model using Per capita savings as the dependent variable. When using Per Capita Savings as the dependent variable, the Social Protection Dummy remains positive and significant (coefficient = 1,457, $p<0.05$), indicating that receiving social protection benefits increases per capita savings by 1,457 BDT on average. This suggests that social protection programs contribute to both the likelihood of saving and the actual savings amount. Disposable Income has a strong positive effect (coefficient = 0.0239, $p<0.01$), reinforcing the income-savings relationship.

The Dependency Ratio remains negative and significant (coefficient = -48,797, p<0.05), further highlighting the financial strain imposed by dependents.

Table 2: Baseline regression

This table presents the baseline model i.e., fixed effect panel regression in column (1) and (2) and Probit regression in column (3) of the impact of the Social protection on the Savings of the household in Bangladesh. Standard errors are clustered at the household level and t-stats are reported in the parentheses. Statistical significance at the 1%, 5% and 10% are indicated by ***, ** and * respectively.

	FE	FE	Probit
	(1)	(2)	(3)
Variables	Savings dummy	Percapita savings	Savings dummy
Social protection dummy	0.0278**	1,457**	0.106**
	(0.000908)	(59.37)	(0.0491)
Disposable income	3.74e-07**	0.0239***	3.69e-06***
	(5.97e-09)	(0.000131)	(4.06e-07)
Household size	0.00984*	174.6	0.0139
	(0.00145)	(122.5)	(0.0611)
Dependency ratio	-4.337**	-48,797**	-2.977*
	(0.261)	(2,484)	(1.783)
Home ownership	-0.121**	-2,702*	0.490
	(0.00940)	(291.7)	(0.776)
Household head edu	-0.00980	336.6	0.0425**
	(0.00269)	(71.62)	(0.0215)
Household head emp status	0.142	16,896**	-0.782
	(0.0730)	(908.6)	(0.805)
Household head age	0.000782	63.24*	0.00311
	(0.000261)	(9.821)	(0.00472)
Household hold FE	Yes	Yes	
Year FE	Yes	Yes	
Observations	1,860	1,860	3,587
R-squared	0.693	0.709	0.0413

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

As an alternative model we implement the Probit Model in Column 3 where Savings Dummy is used as the dependent variable. The Probit estimation yields a marginal effect of 0.106 (p<0.05) for the Social Protection Dummy, meaning that receiving social protection benefits increases the probability of saving by 10.6 percentage points. This result aligns with the FE model's findings and confirms the positive impact of social protection on household saving behavior. Household Head Education is also positive and significant in this specification (coefficient = 0.0425, p<0.05), suggesting that more educated household heads are more likely to save.

4.2.2 Instrumental Variables (2SLS) Regression

To address potential endogeneity in the relationship between social protection and savings, a two-stage least squares (2SLS) regression is conducted using social protection coverage as an instrument for the Social Protection Dummy. The first-stage results confirm that social protection coverage is a strong predictor of social protection receipt (coefficient = 0.513, $p<0.01$).

Table 3: 2SLS regression

This table presents the 2SLS model of the impact of the Social protection on the Savings of the household in Bangladesh using social protection coverage as the instrumental variable. Column (1) and (2) are the first stage regression of Social protection dummy on the coverage. Column (2) and (4) report the second stage regression of the savings dummy and percapital savings on predicted social protection dummy. Standard errors are clustered at the household level and t-stats are reported in the parentheses. Statistical significance at the 1%, 5% and 10% are indicated by ***, ** and * respectively.

	First stage	Second stage	First stage	Second stage
	(1)	(2)	(3)	(4)
Variables	**Social protection dummy**	**Savings dummy**	**Social protection dummy**	**Percapita savings**
Coverage	0.513***		0.513***	
	(5.56)		(5.56)	
Predicted Social protection dummy		0.673***		11,668***
		(0.253)		(78.40)
Disposable income	-2.67e-07*	5.42e-07***	-2.67e-07*	0.0266***
	(-1.81)	(2.04e-07)	(-1.81)	(0.000128)
Household size	-0.018	0.0248	-0.018	411.2*
	(-0.76)	(0.0447)	(-0.76)	(58.43)
Dependency ratio	-2.201*	-2.760	-2.201*	-23,846
	(-1.67)	(2.096)	(-1.67)	(3,798)
Home ownership	0.084	-0.115	0.084	-2,617*
	(1.30)	(0.0893)	(1.30)	(211.8)
Household head edu	0.003	-0.0102	0.003	329.6
	(0.31)	(0.0126)	(0.31)	(56.29)
Household head emp status	0.503	-0.269	0.503	10,391*
	(1.54)	(0.541)	(1.54)	(1,140)
Household head age	0.001	-0.000398	0.001	44.56*
	(0.63)	(0.00438)	(0.63)	(6.376)
Household hold FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	1,860	1,860	1,860	1,860
R-squared		0.284		0.020

In the second stage, the instrumented Social Protection Dummy remains positively associated with savings. Specifically, receiving social protection increases the probability of saving by 0.673 ($p<0.01$), reinforcing the baseline findings. When the dependent variable is Per Capita Savings, the effect is even larger, with a coefficient of 11,668 BDT ($p<0.01$). These results confirm that social protection significantly enhances both the likelihood and amount of household savings, even after controlling for endogeneity concerns.

5. Conclusion

This study examines the impact of social protection programs on household savings behavior in Bangladesh using data from the Bangladesh Integrated Household Survey (BIHS) for the years 2011, 2015 and 2018. Employing a fixed effects (FE) model and an instrumental variable (IV) approach, we find robust evidence that receiving social protection benefits is positively associated with both the likelihood and the amount of household savings.

Our fixed effects model suggests that households receiving social protection benefits are 2.78 percentage points more likely to save compared to those that do not. The results remain consistent when using per capita savings as the dependent variable, indicating that social protection programs contribute to actual savings accumulation. To address potential endogeneity concerns, we employ a two-stage least squares (2SLS) approach, using social protection coverage as an instrument. The IV results confirm the positive impact of social protection on savings, reinforcing the baseline findings. The strength of the instrument is validated through a strong first-stage F-statistic and Hansen's J test supports its exogeneity.

These findings have significant policy implications. They suggest that social protection programs not only provide short-term financial relief but also enhance household financial resilience by encouraging savings. This, in turn, can contribute to long-term economic stability and poverty alleviation. Policymakers should consider strengthening social protection schemes and designing programs that incentivize savings behavior, ensuring that beneficiaries can build financial buffers against economic shocks.

Future research could explore the differential impact of various types of social protection programs on household savings, as well as examine potential spillover effects on investment and consumption behavior. Additionally, expanding the analysis to urban households could provide a more comprehensive understanding of how social protection influences financial decisions across different socioeconomic contexts.

References

Banerjee, A., & Duflo, E. (2011). *Poor economics: A radical rethinking of the way to fight global poverty.* PublicAffairs.

Barrientos, A., & Hulme, D. (2009). Social protection for the poor and poorest in developing countries: Reflections on a quiet revolution. *Oxford Development Studies,* 37(4), 439-456.

Carroll, C. D., & Kimball, M. S. (1996). On the concavity of the consumption function. *Econometrica,* 64(4), 981-992.

Carroll, C. D., & Summers, L. H. (1991). Consumption growth parallels income growth: Some new evidence. In B. D. Bernheim & J. B. Shoven (Eds.), *National saving and economic performance* (pp. 305-343). University of Chicago Press.

Chetty, R., & Szeidl, A. (2007). Consumption commitments and risk preferences. *The Quarterly Journal of Economics, 122*(2), 831-877.

Deaton, A. (1991). Saving and liquidity constraints. *Econometrica,* 59(5), 1221-1248.

Dupas, P., & Robinson, J. (2013). Why don't the poor save more? Evidence from health savings experiments. *American Economic Review, 103*(4), 1138-1171.

Friedman, M. (1957). *A theory of the consumption function.* Princeton University Press.

Gunatilake, H. (2016). Social protection for the informal sector: The experience in South Asia. *Asian Development Review, 33*(1), 129-157.

Kabeer, N., Cook, S., & Opoku-Mensah, A. (2012). Social protection in Asia: Research findings and policy lessons. *Development Policy Review, 30*(5), 499-522.

Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature, 52*(1), 5-44.

Modigliani, F., & Brumberg, R. (1954). Utility analysis and the consumption function: An interpretation of cross-section data. In K. K. Kurihara (Ed.), *Post-Keynesian economics* (pp. 388-436). Rutgers University Press.

Morduch, J. (1995). Income smoothing and consumption smoothing. *Journal of Economic Perspectives, 9*(3), 103-114.

Rahman, H. Z., & Choudhury, R. A. (2020). *Social protection in Bangladesh: Building effective social safety nets and ladders out of poverty.* University Press Limited.

Schultz, T. P. (1998). Inequality in the distribution of personal income in the world: How it is changing and why. *Journal of Population Economics, 11*(3), 307-344.

World Bank. (2018). *Bangladesh social protection public expenditure review.* World Bank Group.