



Sustainable Growth: Enhancing Youth Livelihoods with Agricultural Financial Capital Enhancement Skills in Terai Region, West Bengal

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HIGHLIGHTS

- Risk-taking ability was the strongest positive predictor of financial capital generation through skill development among rural youth.
- Training exposure and attitude towards agriculture were negatively associated with financial capital generation through skill development.
- Psychologically-informed skill development program can strengthen financial capital and sustain rural youth livelihoods effectively.

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ABSTRACT

Financial capital has been found as one of the important factors towards sustainability in the rural youth livelihoods, but research on how financial capital can be built through skills enhancement among the rural youth in India is limited. The study aimed to explore the effect of profile factors on skill development based financial capital generation among rural youths of Cooch Behar and Malda districts, West Bengal. A total of 200 farm youth were randomly sampled from 20 randomly selected villages from the four blocks. The data collected during 2025 were analysed with descriptive statistics, correlation analysis and multiple regression analysis. Eight factors such as annual income, annual expenditure, material possession, agricultural implement possession, land holding, risk taking ability, economic motivation and skill possessed were found to influence the financial capital generation through the skill development process positively and significantly whereas training exposure and attitude towards agriculture were negatively and significantly related to the dependent variable of the study. When using multiple regression analysis, the R^2 value is 0.324. The results indicate the need for targeted skill development training for adolescents to facilitate the development of financial capital and sustainable livelihoods in agriculture in rural communities.

INTRODUCTION

The agricultural sector contributes approximately 18% of India's GDP and employing around 54% of the country's total labour force (Department of Agriculture & Farmers Welfare, 2024). A serious crisis exists where youth are leaving the agriculture sector due to the lack of economic opportunities and social status of

agriculture among the young minds (Uddin & Antriyandarti, 2025). The concepts like investment, budgeting, financial services, and others can be understood by the young agripreneurs so that they can maximize their productivity and profitability (Mohanty et al., 2025). Financial capital is one of the main assets in the Sustainable Livelihoods Framework (Chambers & Conway, 1992; DFID, 1999; Kyeyune & Ntayi, 2025) and it refers to the means by which

people have access to income, credit, assets ownership, and access to formal financial institutions. A young farmer who produces crops but also manages their income and makes efficient investment choices in technology (Figurek et al., 2023), all-encompassing strategy can pave the way for sustainable development, lower the migration and unemployment rates of rural youth (Maurya et al., 2022) and enable young people to play a vital role in agricultural production (Geza et al., 2022). The aim is to develop a generation of Young Farmers who are financially literate and economically empowered (Joshi and Kashyap, 2024). Combining farming and financial education (Kurdys-Kujawska et al., 2025) can create an era of youth who can become both farmers and entrepreneurs (Chinchmalatpure & Tekale, 2019). With the advent of Artificial Intelligence (AI) in the recent times, the concept of smart farming and precision farming has been encouraged, thus making the agriculture more efficient, technologized and appealing to the rural youth (Singh et al., 2022). Agriculture is a key economic activity in many economies, especially in rural areas (Gulati & Juneja, 2022). To tap this potential, Agricultural Financial Capital Enhancement Skills was designed, which combines agricultural skills with financial knowledge (Kumar et al., 2022). The essence of agriculture sustainability is to satisfy the needs of the present generation without harming the needs of future generations (Soni et al., 2022; Sai et al., 2024; Kumari et al., 2024; Raman, 2024). Empowering youth in agriculture involves more than just technical skills. It comprises financial education, which is essential for resource management, obtaining credit facilities and making wise investment decisions (Tiwari et al., 2023; Vasanthi & Preethi, 2024). As the financial capital skills of the young agripreneurs improve, they can budget effectively (Kaur & Dharni, 2024). Young farmers adapt to both sustainable farming practices and financial management. This double expertise can revolutionize their life for economic stability and growth (Mishra et al., 2023). This will combine sustainable agricultural practices with the skills for financial capital enhancement to build a new generation of sustainable financially savvy young farmers (Ray et al., 2022).

METHODOLOGY

Two districts of Cooch Behar and Malda were selected for the study in West Bengal through purposive sampling as in both the districts, rural youth are actively involved in farming and are an important group in creating income and sustainability of livelihoods in the Terai agro-climatic region. The respondents were selected by using multistage random sampling methodology. Two blocks were randomly chosen from each district and two villages were selected from each block, randomly, resulting in selection of eight villages. From all selected villages, a list of all the farm youths in the age group of 18-35 years engaged. Twenty-five were randomly selected from each village, and thus the total respondent selected were 200 rural farm youth. Financial Capital Generation via Skill Development (Y), was decided based on the SLF model (Chambers & Conway, 1992; DFID, 1999). Evaluation of the financial capital generated by skill development of respondents was done using the validated composite scale. Twenty predictor variables have been identified and grouped into four types: socio-personal, socio-economic, socio-psychological and situational attributes. The rating

systems used for each variable studied were well-designed, pretested with an established content validity scale and reliability (internal consistency). The main data for analysis was collected directly from respondents using the pre-tested face-to-face interview guide, which was tested in 20 respondents in the field outside the study location. The collected data were then statistically analyzed using descriptive measures like mean, standard deviation (S.D.) and coefficient of variation (C.V. = S.D. / Mean \times 100). Each of the independent variables was correlated with the dependent variable with the use of bivariate correlation analysis using the Pearson product-moment correlation coefficient (r). To find the significant predictors of financial capital creation as well as R^2 coefficient of determination, multiple linear regression analysis was performed. The annual amount spent (X_6) and level of social interaction (X_{19}) were not considered in the regression model as they were found to be highly intercorrelated by means of Variance Inflation Factor (VIF). Thus, a total of 18 predictors were used in the model built. The unstandardized coefficients were examined for significance with $p \leq 0.05$ and $p \leq 0.01$. Standardized coefficients (beta) were used to facilitate comparisons between the relative contributions of predictors to the overall variance of Y.

RESULTS

Ninety percent of the respondents were in the age group of 25-34 years and 10% were below 25 years (Table 1). As for education 74% of the respondents were educated from secondary education, 14% were of the education level of primary education, and 12% received higher secondary education. Medium (78%), low (9%) and high (13%) family educational status. Among the socio-economic characteristics, 67% of the respondents had a medium level of farming experience, whereas 16.5% each belonged to the low and high categories. Similarly, the majority of respondents had medium annual income (65%), annual expenditure (65.5%), material possession (63%), agricultural implement possession (72%), and landholding (70.5%). The socio-psychological characteristics revealed that most respondents exhibited medium levels of independency (87%), risk-taking ability (90%), economic motivation (97.5%), orientation towards skill development (87%), attitude towards agricultural practices (79.5%), and knowledge acquired (88%), and skill acquired (89.5%). Likewise, the majority had medium levels of extension contact (78.5%), mass media exposure (69.5%), and training exposure, while 91% reported medium to high social participation. With respect to the dependent variable, financial capital generation through skill development was observed at a medium level among 88.5% of the respondents, whereas 8% and 3.5% belonged to the high and low categories, respectively.

The Pearson's coefficient of correlation between economic/ financial capital creation from skill development and 20 independent variables is shown in Table 2. Out of the Socio-demographic variables, none was significantly correlated with financial capital. Annual income ($r = 0.294$), annual expenditure ($r = 0.333$), material possession ($r = 0.233$), possession of agricultural implements ($r = 0.200$) and land ownership ($r = 0.164$) were positively and significantly correlated with the dependent variable. The highest positive correlation coefficient was found between risk taking capacity ($r = 0.449$) and economic motivation ($r = 0.275$) and skill

Table 1. Consistency of the variables selected for the study

Variables	Max.	Min.	Mean	S.D.	C.V. (%)
Socio-personal variables					
Age (X_1)	34	18	28.49	4.06	14.24
Education (X_2)	15	02	8.89	3.05	34.31
Farming Experience (X_3)	18	02	10.61	3.74	35.25
Family educational status (X_4)	06	02	3.79	0.72	18.20
Socio-economic variables					
Family annual income (X_5)	300	40	125.27	49.33	39.38
Family annual expenditure (X_6)	250	35	110.56	41.90	37.90
Material possession (X_7)	28	06	13.25	3.60	27.17
Agricultural implements possession (X_8)	30	08	14.85	4.17	28.08
Land holding (X_9)	4.40	0.73	2.24	0.80	35.71
Socio-psychological variables					
Independency (X_{10})	26	18	22.40	1.02	4.55
Risk taking Ability (X_{11})	27	19	24.80	1.36	5.48
Economic motivation (X_{12})	26	21	25.00	0.76	3.04
Youth orientation towards development of skill in Agriculture (X_{13})	44	38	41.00	1.07	2.61
Attitude about Agricultural Practices (X_{14})	87	74	79.74	1.81	2.27
Knowledge Acquired (X_{15})	18	13	15.48	0.74	4.78
Skill Acquired (X_{16})	18	13	15.47	0.72	4.65
Situational attributes					
Extension contact (X_{17})	15	09	11.56	0.89	7.70
Mass media exposure (X_{18})	11	05	8.42	1.09	12.95
Social participation (X_{19})	03	01	1.63	0.64	39.26
Training Exposure (X_{20})	12	04	6.11	1.34	21.93
Predicted Variable					
Financial Capital	20	15	18.84	0.65	3.45

Table 2. Correlation Coefficient of economic/ financial Capital generation through skill development with 20 causal variables

Variables	Coefficient of Correlation
Socio-personal	
Age (X_1)	-0.022
Education (X_2)	0.006
Farming experience (X_3)	-0.018
Family education status (X_4)	0.109
Socio-economic	
Annual income (X_5)	0.294**
Annual expenditure (X_6)	0.333**
Material possession (X_7)	0.233**
Agricultural implements possession (X_8)	0.200**
Land holding (X_9)	0.164*
Socio-psychological	
Independency (X_{10})	0.051
Risk ability (X_{11})	0.449**
Economic motivation (X_{12})	0.275**
Youth orientation towards skilldevelopment (X_{13})	0.122
Attitude about agricultural practices (X_{14})	-0.190**
Knowledge acquired (X_{15})	0.098
Skill acquired (X_{16})	0.171*
Situational attributes	
Extension contact (X_{17})	0.085
Mass media exposure (X_{18})	0.053
Social participation (X_{19})	-0.022
Training exposure (X_{20})	-0.236**

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

obtained ($r = 0.171$) in the socio-psychological variables. The attitude of agricultural practice ($r = -0.190$) and training experience ($r = -0.236$) showed negative and significant correlation coefficients. The other Socio-psychological variables like independency, youth inclination towards skill development, knowledge acquired, extension contacts, mass media contacts and social participation were not significantly correlated with financial capital creation.

The result of the Multiple Regression analysis between economic/financial capital generation and 18 predictor variables is shown in Table 3. Predictor variables like annual expenditure (X_6) and social participation (X_{19}) were omitted because of high multicollinearity among them. From the value of $R^2 = 0.324$, we can see that the set of 18 predictor variables accounted for 32.40% variation of the dependent variable. Of all the predictor variables used in the model, the most significant positive predictor variable is risk-taking ability (X_{11}) ($\beta = 0.435$, $t = 5.028$, $p < 0.01$). Training exposure (X_{20}) was found to be a significant negative predictor variable ($\beta = -0.249$, $t = -2.911$, $p < 0.01$).

DISCUSSION

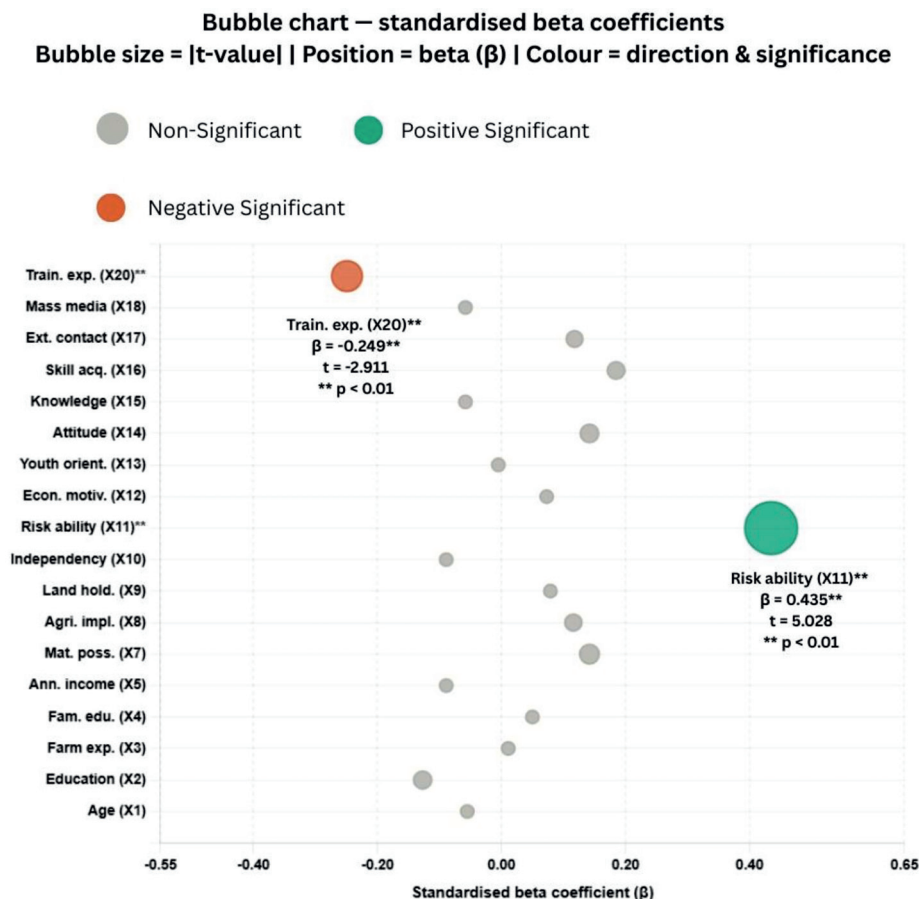
The age group of 25-34 is the major age group which indicates the active farming population (Uddin & Antriandarti, 2025). The majority of the respondents are secondary educated which is consistent with moderate financial literacy scores of the agripreneurs (Kaur & Dharni, 2024), whereas the small percentage of higher-educated youth supports the results of other studies that higher education not only fails to encourage young people to participate in agriculture, but also reduces their interest in doing so (Geza et

Table 3. Results of Multiple regression analysis of economic/ financial capital (Y₂) with 18 predictor variables

Variables	Unstandardized Coefficients		Standardized Coefficients	t-value
	B	Std. Error	Beta	
Socio-personal				
Age (X ₁)	-.009	.025	-.055	-.349
Education (X ₂)	-.027	.016	-.127	-1.712
Farming experience (X ₃)	.002	.027	.011	.070
Family education status (X ₄)	.045	.062	.050	.735
Socio-economic				
Annual income (X ₅)	-.012	.013	-.089	-.899
Material possession (X ₇)	.025	.014	.142	1.864
Agricultural implements possession (X ₈)	.018	.011	.116	1.615
Land holding (X ₉)	.063	.062	.079	1.024
Socio-psychological				
Independency (X ₁₀)	-.056	.045	-.089	-1.241
Risk ability (X ₁₁)	.206	.041	.435	5.028**
Economic motivation (X ₁₂)	.062	.065	.073	.953
Youth orientation towards skill development (X ₁₃)	-.003	.041	-.005	-.080
Attitude about agricultural practices (X ₁₄)	.051	.029	.142	1.748
Knowledge acquired (X ₁₅)	-.050	.097	-.058	-.521
Skill acquired (X ₁₆)	.165	.098	.185	1.678
Situational attributes				
Extension contact (X ₁₇)	.086	.054	.118	1.581
Mass media exposure (X ₁₈)	-.035	.044	-.058	-.795
Training exposure (X ₂₀)	-.120	.041	-.249	-2.911

R²=0.324; * Significant at 5% level; ** Significant at 1% level

Figure 1. Bubble chart of multiple regression analysis of economic/ financial capital



al., 2022). 67% of respondents have moderate farming experience and are ready to invest in farming skills (Figurek et al., 2023). The overall medium socio-economic status expressed through income, expenditure, material possession and smallholder land holdings reveals that financial inclusion gaps have persisted as one of the main barriers for rural agricultural youth (Gulati & Juneja, 2022; Kumari et al., 2024).

The presence of high economic motivation (97.50%), risk-taking ability (90%), and youth focus on skill development (87%) implies significant but inadequately leveraged entrepreneurial talent among the participants, just as found by (Kyeyune & Ntayi, 2025). The relatively low level of attitudes towards agriculture (79.50%) and knowledge/skill acquisition (88% and 89.50%, respectively) reflects a potential that can be harnessed through targeted approaches such as need-based capacity building, practical skill development programmes, financial literacy initiatives and technology-oriented agricultural training among rural youth, as recommended by Raman, 2024 and Kurdys-Kujawska et al. (2025). Likewise, the moderate extension communication (78.50%) and mass media communication (69.50%) indicate a need to improve institutional communication, given that information is an important factor in the formation of financial capital (Chambers & Conway, 1992; DFID, 1999).

Socio-personal variables exhibited non-significant relation with the creation of financial capital, implying that socio-demographic indicators, when considered alone, are not adequate for creating skill-based capital. In case of socio-economic variables, a positive association was established between annual income, annual expenditure, material possessions, implement ownership, and land holdings, thereby implying that youth, who enjoy better economic endowments, find it easier to access financial organizations and skills development programs (Gulati and Juneja, 2022; Arunkumar et al., 2023; Kumari et al., 2024; Arunkumar et al., 2025). Risk taking ability ($r=0.449$), economic motivation ($r=0.275$) and skill acquired ($r=0.171$) emerged as significant socio-psychological variables (Soni et al., 2022; Kyeyune and Ntayi, 2025). Negative association between attitude towards farming and training exposure suggested that skill-based youth emphasize on capabilities rather than earnings (Figurek et al., 2023; Raman, 2024).

The regression explained 32.40% of the variance in financial capital generation, while the remaining part was explained by the factors that were not included in the regression model (social capital, institutional access and policy environment). Only two variables were found to be statistically significant. Risk-taking ability ($\hat{\alpha} = 0.435$, $t = 5.028$, $p < 0.01$) was the strongest positive predictor. Financial capital is enhanced through swifter and more risk-oriented youth engaging in agribusiness activities, the promotion of financial resources and capital involvement in skill development. This corroborates (Soni et al., 2022) on risk orientation and entrepreneurial engagement.

Training exposure ($\beta = -0.249$, $t = -2.911$, $p < 0.01$) actually had a negative significant association, suggesting that youth with higher levels of prior training perceived lower need for additional financial skill development, and already had established networks and knowledge. Some lack of synergy between multiple training programmes could also have resulted in confusion regarding the

skills relevant to the learning outcome, which is in line with (Arunkumar et al., 2021; Figurek et al., 2023), who observed that lack of synergy between multiple training programmes hinders and demoralizes purposeful skill formation.

CONCLUSION

The study underscores the importance of the livelihood sustainability issue for young people in the remote areas, and the significance of the accessibility of financial resources and their use. Skill development, in terms of enhancing financial resources, is closely related to the development of sustainable livelihoods. The analysis reveals that the financial capital generation is in positive correlation with annual income, annual expenditure and material possession, possession of agricultural implements, land holding, risk taking ability, economic motivation and acquired skill. On the other hand, the financial capital generation is negatively correlated with training exposure and attitude towards agricultural practices. On the other, financial capital generation is inversely related to the training exposure and attitude towards agricultural practices. This study highlights the need for focused up-skilling programmes to promote financial capital and the livelihoods of rural youth in general.

DECLARATIONS

Ethics approval and informed consent: Ethical norms were strictly followed while conducting this research according to the principles of social science research. All participants provided their informed consent prior to the conduct of the research using personal interview method.

Conflict of interest: The authors have declared that no conflict of interest exists in the conduct of the research.

Authors' contribution: Biman Maity conducted the field investigation, data collection, statistical analysis. Kausik Pradhan supervised the study and contributed to research design and interpretation of results. Chigilipalli Mounika, Marimuthu Praveenkumar, Swapnamay Ghosh and Ajay Kumar Prusty assisted in literature review, data interpretation, manuscript preparation and editing. All authors read and approved the final manuscript.

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