

## Attracting and Retaining of Youth in Agriculture (ARYA) Project Paves Way to Livelihood Security of Youth

C. M. RAJESH<sup>1</sup>, S. V. SURESHA<sup>2</sup>, K. P. RAGHUPRASAD<sup>3</sup> AND S. GANESAMOORTHY<sup>4</sup>

<sup>1</sup>Department of Agricultural Extension, College of Agriculture, UAS, GKVK, Bengaluru - 560 065

<sup>2</sup>Vice-Chancellor, University of Agricultural Sciences, GKVK, Bengaluru - 560 065

<sup>3</sup>Agricultural Technology Information Centre, <sup>4</sup>Agricultural Knowledge Management Unit, University of Agricultural Sciences, GKVK, Bengaluru - 560 065

e-Mail : rajeshem.50@gmail.com

### AUTHORS CONTRIBUTION

C. M. RAJESH :

Investigation, data collection, data analysis, draft writing, editing;

S. V. SURESHA :

Topic finalization, framing objectives, statements finalization, draft finalization;

K. P. RAGHUPRASAD &

S. GANESAMOORTHY :

Statements finalization and corrections, tables corrections

### Corresponding Author :

C. M. RAJESH

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### ABSTRACT

Owing to the importance of youth power in agriculture, ICAR came out with a policy plan to enhance the production ability, reliability and sustainability of youths in agriculture through 'Attracting and Retaining of Youth in Agriculture' (ARYA) project in the year 2015-16. In the ARYA project, the youths below 35 years of age are trained with the twin objective of empowering the younger generation in terms of their livelihood, income and socio-economic status and to attracting the youths to take up agriculture as a main source of income. The study was conducted in the Shivamogga district of Karnataka in 2023, focusing on the beneficiaries of the ARYA project. The Krishi Vigyan Kendra (KVK), Shivamogga maintained the follow-up list of these beneficiaries. Data collection was carried out personally by the researcher using a pretested interview schedule. The study involved interviewing 60 beneficiary youths who were part of the ARYA project in Shivamogga district. It was found that 46.67 per cent of the respondents belongs to average level of livelihood security. Additionally, nearly one-third (31.66%) of the respondents enjoy better livelihood security, while the remaining respondents (21.67%) fall into the category of poor livelihood security. These improvements in livelihood security can be largely attributed to the enhancement of socio-economic status, entrepreneurial behavior, skill sets and employment opportunities facilitated by the ARYA project. The study assessed these outcomes by examining the changes observed, which included a significant decrease in dependency on informal credit sources, reduced migratory needs and an increase in employment opportunities within the village. These findings signify the remarkable progress achieved through the implementation of the ARYA project.

**Keywords :** Livelihood security, Socio-economic, Entrepreneurial behavior, Skill sets, Employment opportunities

EMPOWERING youth in agriculture is not just an investment in the present; it is an investment in a resilient, prosperous and food-secure future for generations to come. Today, the main concern has shifted from higher farm production to higher returns on their investments. However, agriculture in India is faced with multiple challenges for accelerating agricultural growth these challenges may include low farm productivity, limited access to inputs and market,

fragmentation of land, natural resource degradation, climate change, non-remunerative price and limited surplus for value addition. Thus, on the one side, there is a need to diversify agriculture and make it more remunerative with the thrust on value addition and processing, on the other hand, the rural youth are moving away from agriculture sector. Youth are expected to play a vital role in the much-anticipated transformation of agriculture in India. According to

national youth' policy, persons in the age group of 15-35 are defined as young. At present, 35 per cent of the total population is in the age group of 15-35 years, out of which 75 per cent live in rural areas (Angaitkar *et al.*, 2013). Migration of rural youth to cities is around 45 per cent in the country and it is estimated that only about 5 per cent of youth are engaged in agriculture. In developed countries, skilled workforce is in the range of 60 per cent to 90 per cent of the total workforce, whereas in India, the skilled workforce is as low as 5 per cent (20-24 years age group). There are challenges in empowering the youth to improve their skills and to remain in agriculture as a source of livelihood in rural situations. Creation of successful economic models in the villages is crucial to catalyze and energize youth to become entrepreneurs in rural areas and guide others in their vicinity. Creating interest and building confidence among rural youth in agriculture is difficult but not impossible, as the available evidence of profitable agriculture has been proved under varied situations. Retaining youth in agriculture is therefore strongly linked to agriculture. India has a predominantly agrarian economy, with a substantial proportion of the population engaged in agricultural activities (Basavaraj *et al.*, 2008). The involvement of young people in agriculture is crucial for ensuring sustainable agricultural development, addressing food security challenges and uplifting rural communities.

Thus, realizing the importance of rural youth in agricultural development especially from the point of view of food security of the country, ICAR has initiated a project on 'Attracting and Retaining of Youth in Agriculture (ARYA)' during 2015-16. Under this scheme, special efforts are being taken up to attract the rural youth under the age of 35 years in agriculture to provide income generating opportunities and engage them in agriculture. The oriented youth groups may function as role models for other youth by demonstrating the potentiality of the agri-based enterprises and by imparting training to others. Skill development of rural youth is helping in regaining their confidence levels to pursue farming as a profession, besides generating additional employment opportunities to absorb under employed and

unemployed rural youth in secondary agriculture and service-related activities in rural areas. Hence, it was found worthwhile to study the livelihood security of farm youth under ARYA project in Karnataka with the specific objective of measuring the livelihood security of youth beneficiaries under ARYA project.

## MATERIAL AND METHODS

The present study was carried out in Shivamogga district of Karnataka. Shivamogga KVK implemented the ARYA project in its jurisdiction and has maintained a list of beneficiary youths who attended the project. To collect data, 60 beneficiary youths were randomly selected from the list maintained by KVK. Livelihood security of youths is operationally defined in the present study as 'Capabilities, assets including both material and social resources and activities required for a means of livelihood earned under ARYA Project'. The ex-post facto design was used as the research design. A standardized scale was developed specifically for the research study to measure the livelihood security of youth beneficiaries under ARYA project. The developed scale was found to be highly reliable (0.8281) and valid (0.951). The developed livelihood scale consists of 46 statements categorized under economic security (07 statements), social security (05 statements), migration component (06 statements), physical security (06 statements), psychological security (07 statements), health security (04 statements), ecological security (06 statements), food and nutritional security (05 statements). The response was collected on a five-point continuum, namely, strongly agree, agree, undecided, disagree and strongly disagree with an assigned score of 5, 4, 3, 2 and 1 for positive statements and reverse scoring for negative statements, respectively. Based on the mean and half standard deviation the respondents could be categorized into three categories, *viz.*, poor, average, and better livelihood security. A higher score on this scale indicates that the respondent has better livelihood security and the lower livelihood score indicates that the respondent has poor livelihood security. Step wise regression was employed to obtain information about the order of importance of the independent variables in predicting the dependent

variable. The stepwise regression analysis selects the best subset of variables in predicting the dependent variable. The collected data were scored, tabulated, and analyzed using frequency, mean, percentage, standard deviation, and count if values.

## RESULTS AND DISCUSSION

### Livelihood Component wise Distribution of Youth Beneficiaries in the ARYA Project

Youths are distributed into different categories based on components of livelihood security *viz*, economic security, social security, migration component, physical security, psychological security, health security, ecological security and food security.

Results in Table 1 and Fig. 1 indicated that more than two-fifth (41.67%) of the respondents belonged to

average economic security and one-third (33.33%) belongs to better economic security followed by poor level (25.00%) of economic security. The ARYA project played an important role in skill development, resulting in increased employment opportunities. It also created pathways for year-round activities during the off-season, thereby reducing dependency on credit. These factors collectively contributed to enhancing the economic security of the youths. The results are in line with Biman Maity, 2021.

The findings demonstrate that a significant proportion of the youth, specifically over two-fifths (45.00%), were categorized as having an average level of social security. Additionally, a considerable number of youths (30.00%) belonged to a better level of social security, while approximately one-fourth (25.00%) fell into the

TABLE 1  
Livelihood component wise distribution of youth beneficiaries in the ARYA project (n=60)

Livelihood components	Categories	No	per cent
Economic security Mean = 30.88 SD = 2.73	Poor (<29.51)	15	25.00
	Average (29.51-32.26)	25	41.67
	Better (>32.25)	20	33.33
Social security Mean = 22.58 SD = 1.64	Poor (< 21.75)	15	25.00
	Average (21.75-23.40)	27	45.00
	Better (>23.40)	18	30.00
Migration component Mean = 25.06 SD = 2.69	Poor (< 23.72)	16	26.66
	Average (23.72-26.41)	24	40.00
	Better (> 26.41)	20	33.34
Physical security Mean = 20.1 SD = 2.29	Poor (< 18.95)	15	25.00
	Average (18.95-21.24)	25	41.67
	Better (> 21.24)	20	33.33
Psychological security Mean = 27.13 SD = 1.81	Poor (<26.22)	23	38.34
	Average (26.22-28.04)	21	35.00
	Better (> 28.04)	16	26.67
Health security Mean = 15.8 SD = 1.07	Poor (< 15.26)	25	41.66
	Average (15.26-16.33)	19	31.67
	Better (>16.33)	16	26.67
Ecological security Mean = 21.16 SD = 1.88	Poor (20.22)	22	36.67
	Average (20.22-22.11)	25	41.67
	Better (>22.11)	13	21.66
Food security Mean = 18.11 SD = 2.30	Poor (16.96)	16	26.66
	Average (16.96-19.26)	24	40.00
	Better (>19.26)	20	33.34

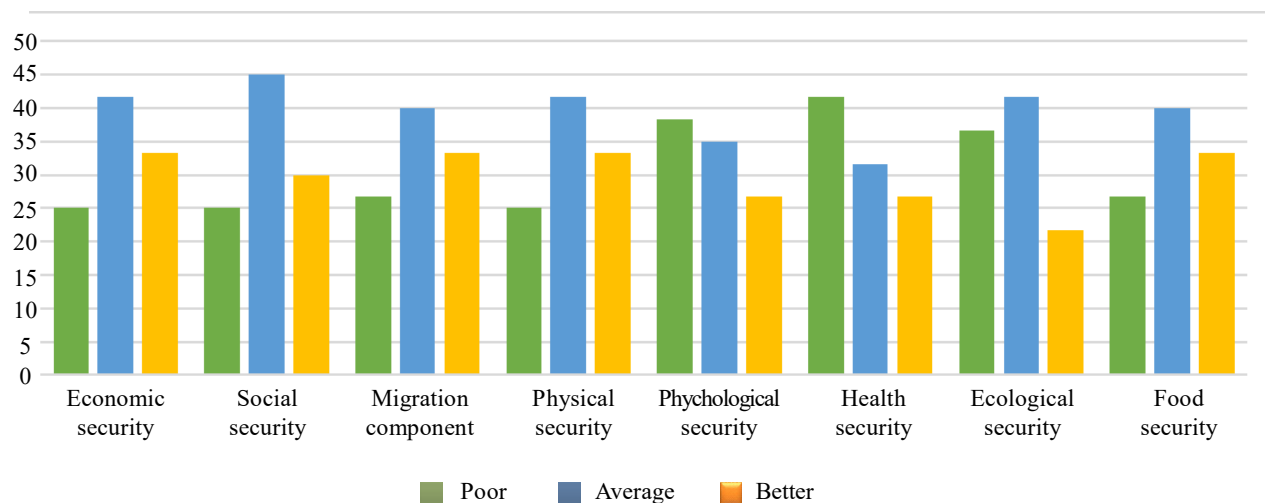


Fig. 1: Livelihood component wise distribution of youth beneficiaries in the ARYA project

category of poor social security. These results can be attributed to the involvement of the youth in the ARYA project, which enabled their participation in cooperative societies. Furthermore, their engagement in various training initiatives increased, as did their visits to nearby RSKs, KVKs, SAU's and farm clinics. The results are in line with Kowsalya and Krishnamurthy (2017). The results presented in Table 1 and Fig. 1 revealed that two-fifths (40.00%) of the surveyed youths belonged to the average migration component. Additionally, one-third (33.34%) of the respondents fell under the better migration component, while 26.66 per cent of the respondents were categorized as having a poor migration component.

The observed trend can be credited to the influence of the ARYA project. The participation of the respondents in the project resulted in a significant reduction in their migration to nearby cities, which consequently led to a decrease in their expenses related to temporary migrations. Furthermore, the ARYA project provided employment opportunities within their own villages, eliminating the necessity for migration. Additionally, the project equipped them with modern agricultural skill sets, enabling them to fulfill their agricultural needs locally. The data presented in Table 1 indicate that around three-fourth (75.00%) of the youth surveyed experienced an average to better level of physical security, while the

remaining one-fourth (25.00%) faced a lower level of physical security. This shift can be attributed to the positive impact of the ARYA project. Respondents were able to acquire new farm machinery and tools, leading to an improvement in their physical security. Furthermore, their reserves of food grains and fodder crops increased, contributing to an enhanced sense of physical security. Moreover, the project facilitated their ability to afford vehicles, which played a significant role in elevating their overall physical security.

The findings showcased in Table 1 and Fig. 1 signify that a more than one-third (38.34%) of the youth respondents belongs to poor psychological security, more than three-fifth (61.66%) of the respondent's youth belongs to the average to better level of psychological security. ARYA project made the respondents psychologically strong improving their skills, knowledge and managerial ability in agriculture, increased the youths risk bearing ability, ARYA project changed their view of agriculture as a less profitable activity, trying innovative ideas in agriculture increased this all the factors contributed for the psychological security of the youths.

The results presented in Table 1 and Fig. 1 clearly indicate that a notable proportion of the youth, specifically over two-fifths (41.66%), experienced a poor level of health security. Additionally, a significant

number of youths (31.67%) enjoyed a better level of health security, while approximately one-fourth (26.67%) fell into the category of better health security. The reasons behind these findings can be attributed to the fact that although cleanliness and hygiene were given priority in their families, other health security factors did not contribute significantly to the overall health security of the youth beneficiaries. In other words, while their families emphasized cleanliness and hygiene, other aspects related to health security were not adequately addressed, leading to the observed variations in the level of health security among the youth respondents.

The presented results in Table 1 and Fig. 1 indicate that a significant proportion, more than two-fifths (41.67%), of the surveyed youths belonged to the average ecological security category. Further more, more than one-third (36.67%) of the surveyed youths fell into the low ecological security category, while the remaining 21.66 per cent were classified under the better ecological security category. This observed trend can be attributed to the positive impact of the ARYA project on the youth’s ecological security. Through the project, the youths gained a greater understanding of the importance of organic farming practices. They were also equipped with improved waste management techniques, enabling them to handle waste in a more environmentally friendly manner. Additionally, the youths got an idea in integrated pest management (IPM), integrated nutrient management (INM) and integrated farming systems (IFS) techniques, which helped them adopt more sustainable agricultural practices. As a result, the usage of chemical fertilizers in their fields was reduced, contributing to the overall improvement in ecological security among the surveyed youths.

The findings presented in Table 1 and Fig. 1 indicate that approximately three-fourth (73.34%) of the surveyed youths achieved an average to better level of food security, while 26.66 per cent of them experienced poor food security. The ARYA project played a pivotal role in facilitating food security for these youths through several avenues. Firstly, the project encouraged a heightened focus on agricultural

production, resulting in a significant portion of their family’s food grain needs being met from their own fields. Secondly, the project promoted the cultivation of nutritious cereals, thereby improving the quality and variety of the food they produced. Additionally, the ARYA project positively influenced the dietary habits of the surveyed youths and their families. This led to an increase in per capita consumption of fruits, vegetables, milk and eggs, fostering a more balanced and nourishing diet these are in line with findings of Govinda and Sathish, 2011

**Overall Livelihood Security of Youths in ARYA Project**

Table 2 illustrates the overall livelihood security of the surveyed youths. The results show that over two - fifths (46.67%) of the respondents have achieved an average level of livelihood security. Additionally, nearly one-third (31.66%) of the respondents enjoy better livelihood security, while the remaining respondents (21.67%) fall into the category of poor livelihood security. These findings can be

TABLE 2  
Overall livelihood security of youths in ARYA project (n=60)

Livelihood level	Category	No	per cent
Mean = 175.50 SD = 9.04	Poor (<170.97)	13	21.67
	Average (170.97-180.02)	28	46.67
	Better (> 180.02)	19	31.66

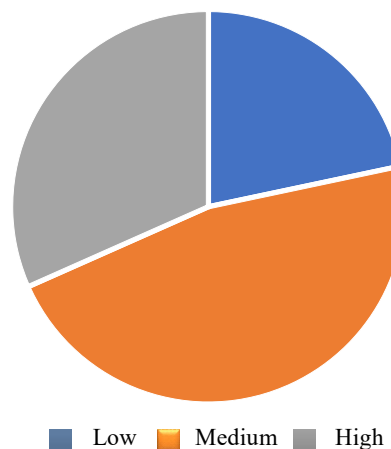


Fig. 2 : Overall livelihood security of youths in ARYA project

attributed to the remarkable progress made by the ARYA Project in enhancing the socio-economic status, skill sets and employment opportunities of the youths. As a result of the project’s interventions, agriculture has emerged as the primary source of income for the youths. These results were assessed by considering the progress and changes observed in various areas, such as a decrease in dependency on informal sources of credit, a reduction in the need for migration and an increase in employment opportunities within the villages. The results are in line with the findings of Harshitha and Madhu Prasad (2018).

**Statement wise Distribution of Youths under ARYA Project**

Table 3 indicates the Statement wise distribution of youths with respect to economic security, skill development under the ARYA project has increased employment opportunities, with a mean score of 4.93. This statement secured the first rank, highlighting the positive impact of skill enhancement on the respondents’ employability. Agriculture is the main source of income after the ARYA project, with a mean score of 4.87. This statement obtained the second rank,

TABLE 3

Statement wise distribution of youths with respect to economic security dimension in the ARYA project (n=60)

Statements	Mean score	Rank
Agriculture is the main source of income after ARYA project	4.87	II
Skill development under ARYA increased the employment opportunities	4.93	I
ARYA made me as a main source of income in my family	3.90	VII
ARYA project created a pathway for year-round agriculture work	3.97	VI
The dependency on credit decreased after ARYA	4.27	IV
Living standard of the family progressed positively after the ARYA project	4.23	V
Project led to increase in mechanization in my field	4.63	III

indicating the significant role of agriculture in the respondents’ income generation. The results are in line with the findings of Debasis Jayapuria., 2015

The project led to an increase in mechanization in my field, with a mean score of 4.63. This statement obtained the third rank, indicating that the ARYA project has encouraged the adoption of mechanized farming techniques among the respondents. The dependency on credit decreased after the ARYA project, with a mean score of 4.27. This statement obtained the fourth rank, indicating that the project has contributed to reducing the reliance on informal credit sources among the respondents. The statement ARYA made me the main source of income in my family, with a mean score of 3.90 ranked. Despite this, the overall impact appears positive, with mechanization and reduced credit dependency indicating successful outcomes. Recommendations for future interventions may focus on optimizing mechanization strategies and addressing challenges associated with income generation within families.

Table 4 provides an overview of how the youth respondents towards social security have evolved following their involvement in the ARYA program. Notably, the data reveals that, on average, participants

TABLE 4

Statement wise distribution of youths with respect to social security dimension in the ARYA project (n=60)

Statements	Mean score	Rank
I am part of any of the cooperative societies after the ARYA program	4.83	I
Frequency of my participation in the various training projects increased after ARYA	4.48	III
I am interested in joining any of the agriculture certificate programs after ARYA	4.37	IV
My visit to the nearby RSKs, KVKs, SAU’s farm clinics increased after ARYA	4.60	II
ARYA convince me an ideology of ‘each for all, all for each’	4.30	V

achieved a high mean score of 4.83, positioning this statement at the top rank. This indicates that the ARYA initiative has effectively motivated the youth to become members of cooperative societies. Furthermore, the ARYA program has had a positive impact on respondents, as reflected in my increased visits to nearby Research Stations for Krishi Vigyan Kendra's (KVKs) and State Agricultural Universities (SAUs) farm clinics, with an average mean score of 4.60, securing the second position. This underscores how the project has encouraged more frequent interactions with these agricultural institutions for guidance and support. Additionally, my involvement in various training projects has significantly grown after participating in the ARYA program, as evidenced by a mean score of 4.48, which places this statement at the third rank. This illustrates the project's success in enhancing the participants' engagement in training initiatives. Furthermore, I have developed a keen interest in enrolling in agriculture certificate programs following the ARYA project, with an average mean score of 4.37, making this statement rank fourth. This suggests that the project has ignited a desire for further educational and skill development opportunities among the respondents. Lastly, the statement indicating that the ARYA program has convinced me of the ideology of 'each for all, all for each' received a mean score of 4.30, ranking it the lowest among the statements.

Table 5 indicates the Statement wise distribution of youths with respect migration dimension, modern skill sets in agriculture is fulfilled in my own village because of ARYA, with a mean score of 4.79. The ARYA project has successfully prevented me from migrating to a nearby city, with a mean score of 4.77, this statement obtained the second rank, highlighting the project's effectiveness in curbing migration among the respondents. The ARYA project has played a pivotal role in preventing individuals from migrating to nearby cities, signaling a positive impact on the socio-economic fabric of the community. By fostering economic opportunities through mechanized farming techniques and reducing credit dependency, the project has enhanced livelihoods and income stability. The

TABLE 5  
Statement wise distribution of youths with respect to migration dimension in the ARYA project (n=60)

Statements	Mean score	Rank
ARYA project stopped me from migrating to nearby city	4.77	II
I have no major reasons to move out of the village after ARYA	3.33	VI
My expenditure on temporary migrations decreased after ARYA	4.52	III
Modern skill sets in agriculture is fulfilled in my own village because of ARYA	4.79	I
I got employment in my own village after ARYA	4.25	IV
My need of, off season migration to other villages/towns/cities stopped after ARYA	3.43	V

creation of employment within the agricultural sector and the introduction of innovative technologies likely contributed to a more resilient community, discouraging migration in search of urban employment. Additionally, the project's emphasis on community empowerment and social capital may have strengthened local ties, fostering an environment supportive of sustainable living. This finding suggests that the ARYA project has not only improved the overall quality of life but also presents valuable insights for future rural development policies seeking to replicate similar successes in other regions. My expenditure on temporary migrations has decreased after the implementation of the ARYA project, with a mean score of 4.52. This statement obtained the third rank, indicating that the project has contributed to reducing the financial burden associated with temporary migrations indicating that the project has facilitated job creation within the respondents' villages. After the ARYA project, I no longer have significant reasons to leave the village, with a mean score of 3.33 ranked last. The results are familiar with findings of Sandeep Sharma, 2018

TABLE 6

Statement wise distribution of youths with respect to physical security in the ARYA project (n=60)

Statements	Mean score	Rank
I own a house after ARYA	2.00	V
Purchased new farm machineries and tools after project	4.37	I
ARYA is responsible for increasing my land holding size	3.73	IV
My buffer stocks of food grains and fodder crops increased after ARYA	4.22	II
Possess a new bore well out of increased income due to ARYA project	1.45	VI
Project helped me afford a vehicle/vehicles	4.13	III

Table 6 indicates the Statement wise distribution of youths with respect to physical security, I have purchased new farm machinery and tools after participating in the ARYA project, with a mean score of 4.37. This statement obtained the first rank, highlighting the project's impact on improving access to agricultural equipment. After the ARYA project, my buffer stocks of food grains and fodder crops have increased, with a mean score of 4.22 obtained the second rank, indicating that the project has positively affected the respondents' food security and storage capabilities. The ARYA project has helped me afford a vehicle or vehicles, with a mean score of 4.13 obtained the third rank, highlighting the project's impact on improving the respondents' ability to purchase vehicles. The statement I possess a new bore well as a result of increased income due to the ARYA project, with a mean score of 1.45 ranked last. The findings are inline with Shireesha *et al.*, 2016.

Table 7 presents a breakdown of statements related to psychological security among youth participants, specifically focusing on their experiences with the ARYA project. Notably, the data reveals that the statement, 'The ARYA project has made me realize the importance of contingency planning in agriculture', garnered the highest mean score of 4.78, securing the top rank. This under scores the project's

TABLE 7

Statement wise distribution of youths with respect to psychological security in the ARYA project (n=60)

Statements	Mean score	Rank
ARYA improved my skills, knowledge, and managerial ability in agriculture	4.67	II
Project increased my risk bearing ability	2.83	VII
My decision taking ability enhanced after the project	3.00	VI
I value scientific views after the project	3.20	V
ARYA changed my view of agriculture as a less profitable activity	4.50	III
ARYA project made me realize the importance of contingency planning in agriculture	4.78	I
Trying innovative ideas in agriculture increased because of the project	4.15	IV

significant impact in instilling an awareness of and appreciation for the necessity of contingency planning in agricultural endeavors. Furthermore, the ARYA project has contributed substantially to enhancing my skills, knowledge, and managerial abilities in agriculture, with a mean score of 4.67, positioning this statement in the second rank. This indicates that the project has played a crucial role in positively influencing the agricultural competencies of the respondents. Additionally, the perception of agriculture as a less profitable activity has undergone a positive transformation among the participants after their engagement with the ARYA project, as reflected in a mean score of 4.50, ranking this statement third. This suggests that the project has played a role in altering the mindset of the respondents regarding the profitability of agricultural pursuits. Lastly, the statement concerning the project's impact on increasing the participants' risk-bearing ability received the lowest mean score of 2.83, placing it at the bottom rank.

Table 8 indicates the Statement wise distribution of youths with to respect health security, cleanliness and



TABLE 8  
Statement wise distribution of youths with respect to health security in the ARYA project (n=60)

Statements	Mean score	Rank
Cleanliness and hygiene are given priority in the family after the project	4.85	I
I visit hospitals for the primary health care instead of trying unscientific medications myself	3.50	III
Regular health checkups are made	3.43	IV
ARYA project was responsible for purchasing insurance cover to me and my family	4.02	II

hygiene are given priority in the family after participating in the project, with a mean score of 4.85. This statement obtained the first rank, indicating that the project has significantly influenced the respondents' emphasis on cleanliness and hygiene within their families. The ARYA project was responsible for providing insurance coverage to me and my family, with a mean score of 4.02. This statement obtained the second rank, emphasizing the project's role in facilitating access to insurance for

TABLE 9  
Statement wise distribution of youths with respect to ecological security in the ARYA project (n=60)

Statements	Mean score	Rank
ARYA project realized the importance of organic farming	4.77	I
The training project taught me optimum natural resource allocation will reduce the burden on ecosystem	4.17	III
I learnt the technique of rainwater harvesting from the training project	2.70	VI
ARYA project helped me in better waste management techniques	4.27	II
Reduced the usage of chemical fertilizers in my field	2.93	IV
ARYA project skilled me in IPM, INM and IFS techniques	2.90	V

the respondents and their families. The statement Regular health checkups are made after the project, with a mean score of 3.43 ranked last.

In Table 9, we can see a breakdown of statements related to ecological security among young participants, specifically concerning their experiences with the ARYA project. Notably, the statement emphasizing the realization of the importance of organic farming through the ARYA project received the highest mean score of 4.77, securing the top rank. This underscores the project's significant role in promoting organic farming practices and ecological awareness among the respondents. Furthermore, the training provided by the ARYA project has proven effective in enhancing my understanding of better waste management techniques, as evidenced by a mean score of 4.27, placing this statement in the second rank. This suggests that the project has contributed valuable knowledge and awareness regarding sustainable resource allocation practices. Conversely, the statement about learning the technique of rainwater harvesting from the training project received the lowest mean score and ranks last among the statements. The results are in line with the findings of Tripathi. *et al.*, 2018.

TABLE 10  
Statement wise distribution of youths with respect to Food and nutritional security in the ARYA project (n=60)

Statements	Mean score	Rank
Most of my family requirements of food grains are produced in my field after ARYA	3.40	IV
Project encouraged me to take up the cultivation of nutria-cereals in my field	3.27	V
Suffering from malnutrition decreased after project	4.00	III
Per capita consumption of fruit, vegetables, milk, and egg increased after ARYA project	4.21	I
Balanced diet of my family gained momentum after ARYA	4.01	II

Table 10 indicates the Statement wise distribution of youths with food and nutritional security, per capita consumption of fruit, vegetables, milk and eggs increased after the ARYA project, with a mean score of 4.21. This statement obtained the first rank, highlighting the project's effectiveness in improving the dietary diversity and consumption of nutritious foods among the respondents. The project's success in enhancing dietary diversity and promoting the intake of nutritious foods is likely attributed to several key factors. Firstly, the introduction of mechanized farming techniques through the project could have led to increased agricultural productivity, making a variety of fresh produce more readily available. Secondly, any training or educational components of the project may have heightened awareness about the nutritional benefits of consuming fruits, vegetables and dairy products. Lastly, improved economic conditions resulting from the project's initiatives may have empowered youths to afford and access a more diverse and nutritious diet. This alignment of agricultural advancements, educational efforts and economic empowerment collectively contributed to the observed positive shift in food and nutritional security among the youth participants. The balanced diet of my family gained momentum after ARYA, with a mean score of 4.01. This statement obtained the second rank, indicating that the project has contributed to an improvement in the quality and balance of the respondents' family diets. Suffering from malnutrition decreased after the project, with a mean score of 4.00. This statement obtained the third rank, indicating that the ARYA project has had a positive impact on reducing malnutrition among the respondents. The statement of the project encouraged me to take up the cultivation of nutria-cereals in my field, with a mean score of 3.27. This statement obtained the fifth rank, suggesting that the project has promoted the cultivation of nutritious cereals among the respondents ranked last.

TABLE 11  
Extent of contribution between personal, socio-economical, and communication characteristics on livelihood security of youths in Shivamogga district (Stepwise Regression Analysis) n=60

Factors	F value	R <sup>2</sup>
X <sub>9</sub>	62.197	50.90
X <sub>9</sub> , X <sub>8</sub>	64.337	68.20
X <sub>9</sub> , X <sub>8</sub> , X <sub>5</sub>	61.602	75.50
X <sub>9</sub> , X <sub>8</sub> , X <sub>5</sub> , X <sub>12</sub>	57.573	79.30

**R<sup>2</sup> - 79.30**

Education (X<sub>1</sub>), Family size (X<sub>2</sub>), Land holding (X<sub>3</sub>), Annual income (X<sub>4</sub>), Family occupation (X<sub>5</sub>), Farming experience (X<sub>6</sub>), Mass media exposure (X<sub>7</sub>), Extension participation (X<sub>8</sub>), Extension contact (X<sub>9</sub>), Marketing orientation (X<sub>10</sub>), Independence (X<sub>11</sub>), Mental activity (X<sub>12</sub>), Self-confidence (X<sub>13</sub>), Socio-political participation (X<sub>14</sub>)

**Extent of Contribution between Profile Characteristics and on Livelihood Security of Youths in Shivamogga district (Stepwise Regression Analysis)**

Table 11 presents the outcomes of the stepwise regression analysis, revealing the significant steps contributing to the livelihood security of beneficiaries among the youth in Shivamogga. The findings indicate that in the initial step, only one factor, Extension contact (X<sub>9</sub>), was included, and it could account for approximately 50.90 per cent of the variation in the livelihood status of youth beneficiaries in Shivamogga. As additional factors were introduced in subsequent steps, the predictive power increased until a certain point when the R<sup>2</sup> values began to decrease. The step that yielded the highest R<sup>2</sup> value was identified as the final step, where all the factors were included and found to be statistically significant. In this study, the fourth step was determined as the last step, incorporating four factors: Extension contact (X<sub>9</sub>), extension participation (X<sub>8</sub>), family occupation (X<sub>5</sub>), and mental activity (X<sub>12</sub>). Collectively, these factors explained 79.30 per cent of the variation in the livelihood status of youth beneficiaries in Shivamogga. The findings are in conformity with findings of Sharath, 2018

It can be concluded that ARYA project has proven to be an exemplary model for rural areas seeking to enhance employment opportunities, skills and livelihood security within their communities. Through its innovative strategies and comprehensive approach, ARYA has successfully empowered individuals with the necessary tools to thrive in the job market, effectively reducing unemployment rates and improves their livelihood status.

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