

**SKILL GAP ANALYSIS AMONG RURAL YOUTH IN RICE
FARMING**

By

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(2019-11-027)

THESIS

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2021

DECLARATION

I, hereby declare that this thesis entitled “**Skill gap analysis among rural youth in rice farming**” is a bonafide record of research work done by me during the course of research and that the thesis has not previously formed the basis for the award of any degree, diploma, fellowship to other similar title, of any other University or Society.


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LIST OF ABBREVIATIONS

CSO	-	Central Statistics Office
UN	-	United Nations
ICAR	-	Indian Council of Agricultural Research
ILO	-	International Labor Organisation
GOI	-	Government of India
NSDC	-	National Skill Development Corporation
ASCI	-	Agricultural Skill Council of India
GOK	-	Government of Kerala
STRY	-	Skill Training of Rural Youth
MANAGE	-	National Institute of Agricultural Extension Management
SAMETI	-	State Agricultural Management and Extension Training Institute
ATMA	-	Agricultural Technology Management Agency
CTA	-	Technical Centre for Agriculture and Rural Development
NSSO	-	National Sample Survey Office
MSP	-	Minimum Support Price
DDU-GKY	-	Deen Dayal Upadhyaya Grameen Kaushalya Yojana
FIB	-	Farm Information Bureau
KVK	-	Krishi Vigyan Kendra
HYV	-	High Yielding Variety
ICT	-	Information and Communication Technology
RATTC	-	Regional Agricultural Technology Training Centre
VFPCCK	-	Vegetable and Fruit Promotion Council Keralam

GAP	-	Good Agricultural Practices
FPC	-	Farmer Producer Company
RARS	-	Regional Agricultural Research Station
RSETI	-	Rural Self-Employment Training Institute
CTI	-	Central Training Institute
LCC	-	Leaf Color Chart
FFS	-	Farm Field School
IFFCO	-	Indian Farmers Fertiliser Cooperative Limited
e-NAM	-	e-National Agricultural Market
CHC	-	Custom Hiring Centre
AGMARKNET	-	Agricultural Marketing Information System
e-RaKAM	-	e-Rashtriya Kisan Agri Mandi
CHDSS	-	Crop Health Decision Support System
TRYSEM	-	Training of Rural Youth for Self-Employment

Introduction

1. INTRODUCTION

Youth constitutes the most potent and crucial part of the society due to their dynamic nature and innovativeness. The progress of a nation depends upon the skills of its human resource because of their intense passion, motivation and willpower. They embody the future of farming as they play a significant role in transforming Indian agriculture to enhance the food security and alleviate poverty.

According to CSO (2017) report, youth are defined as persons in the age group of 18 to 35 years. There are around 1.2 billion youth aged 15 to 24 years accounting for 16 per cent of the global population (UN, 2018). The United Nations Organisation had declared the year 2010-2011 as the 'International year of Youth' to generate a much-needed attention for youth participation and their development at local, national and global levels (UN, 2010).

In India, nearly one-third of the total population have been in the age group of 15 to 35 years out of which 75 per cent resided in rural areas alone (ICAR, 2019). The predominance of youth population is expected to increase further in the upcoming decades. Although three-fourth of the youth in India were literates, the unemployment rate is still found to be the highest (Gangwar and Kashyap, 2018).

The socio-economic development and prosperity of rural areas depend upon the competent youth to a considerable extent since they play a significant role in the mainstream development process (Viswanatha *et al.*, 2014). Rural youth from agricultural background have the potent to become active participants in various agricultural activities. This demographic dividend can be pervasively harnessed by channelizing the creative workforce through the development of appropriate skills, knowledge and attitude which could substantially lead towards advancement in the agricultural sector (Gangwar and Kameswari, 2016).

Skill development, quality education and lifelong learning are the central pillars for youth employment which improves their standard of living (ILO, 2021). According to Das (2019), skill development was found to be the basis for competitiveness across diverse economies as it contributes to the societal development by enhancing the performance and providing an equal opportunity to change the scenario of unemployment.

Globally, a large percentage of young people were found in the developing countries where agriculture provides the main source of income and hence it is important to bring them into the field of agriculture. As per NSSO (2011) report, 37.7 per cent of youth were engaged in the primary sector. In India, the agricultural sector supports more than 75 per cent of the population either directly or indirectly by employing more than 50 per cent of its total workforce.

In the twelfth five-year plan (2012-2017), the Indian government had implemented a youth-centric approach that targeted the areas of agricultural research that could be transformed into viable economic enterprises and also capacity building of the youth to entice them in farming (GOI, 2013).

National Youth Policy launched in February 2014 presented a holistic vision “to empower the youth of the country to achieve their full potential and through them enable India to find its rightful place in the community of nations”. The Government of India through the Ministry of Human Resource Development, Ministry of Rural Development and Ministry of Social Justice and Empowerment invests Rs.37000 Crores per annum on schemes targeted at youth development in the areas of education, skill development and engagement to create a productive workforce for a sustainable economic development (GOI, 2014).

NSDC (2015) conducted a skill gap study in 2010-14 and documented that by 2022, there is an additional net incremental necessity of 120.79 million skilled manpower

in major key sectors *viz.*, agriculture, food processing *etc.* with agriculture alone demanding 24.8 million skilled workforce.

Skill development had occupied an important part in the national mandate with the launch of National Skill Development Mission in India by the Honorable Prime Minister in 2015 (GOI, 2016). The rural youth need to be upgraded with the existing and updated with new skills in farming.

Agricultural Skill Council of India (ASCI) worked towards capacity building in the agricultural sector and has been designed to upgrade the skills of farmers, youth, agricultural laborers *etc.* Their primary objective was to achieve rapid growth in the sector through intensive skill development (GOI, 2014).

The Ministry of Agriculture and Farmers' Welfare, Government of India in compliance with National Policy on Skill Development and Entrepreneurship had implemented Skill Training of Rural Youth (STRY) for imparting skill-based training to rural youth in agriculture and allied areas to promote employment and create a skilled manpower to perform diverse farm operations. The training activities had been coordinated at National level by MANAGE and being implemented through SAMETIs at State level and ATMA at District level (MANAGE, 2020).

The present scenario of changing agriculture in India demands the competent youth. On contrary, there is a decreasing trend of youth participation in agriculture over time. Bhat *et al.*, (2015) reported that agriculture was no longer an attractive profession for the youth. Retaining youth in agriculture has been critical as they are heading towards urban areas in search of employment (Som *et al.*, 2018).

Swaminathan (2007) indicated that the migration of youth to urban areas in search of jobs reduced the availability of human resources for agricultural activities. Singh and Kahlon (2016) observed that the young people are moving away from agriculture because of low income resulting in insufficient financial gain, high risk, perceived low status, market fluctuations and lack of skills. Rani and Rampal (2016) noted that youth were not

willing to participate in agricultural operations. CTA (2010) reported that decreasing involvement of youth in agriculture was due to low level of skills and limited access to financial resources.

Attracting and retaining youth in agriculture is critical for Indian scenario. Hence, it is essential to reorient the agricultural practices to make them intellectually satisfying and economically rewarding for the youth (Jayapuria, 2015). Specific knowledge, skills and a positive attitude towards farming are the basic pre-requisites for active involvement of youth in agriculture and allied areas. If agriculture is made profitable, it can serve as a source of gainful employment for the youth (Shekara *et al.*, 2016).

Promotion of high-value agriculture, precision farming, Hi-Tech agriculture, post-harvest management, enterprises like poultry farming, mushroom cultivation *etc.* requires a well-trained workforce. The rural youth could be the ideal target for skill training in these new areas of agriculture (Mahawar *et al.*, 2021). There is a need to mobilize the young farmers as they play an effective role in transmitting the innovative technologies to their parents, local people and village leaders (Moromi *et al.*, 2018).

Rice is the major food crop cultivated in Kerala occupying 7.37 per cent of the total cultivated area. Palakkad district alone accounted for about 40.1 per cent of the total area of rice in the state. The total area sown in the state under rice was reported as 2.31 lakh hectares in 2020. Specific policy interventions included increased subsidies, bonus over Minimum Support Price (MSP) and higher procurement. In 2020, the state government announced an additional royalty of Rs.2000 per hectare for wetland holders as an incentive for preventing the transformation of wetland to fallow land or other purposes (GOK, 2021).

DDU-GKY under the Ministry of Rural Development along with Kudumbashree (Kerala) gained a distinctive position amongst the skill training programmes due to its emphasis on the rural poor youth (GOI, 2020). Social media tools and networking of

existing youth development organizations would promote further involvement of youth in farming (Lee and Horsley, 2017).

The involvement of rural youth in agriculture particularly in rice farming has tremendous importance since it solves the current issue of unemployment. The major cause of unemployment includes lack of employability skills, access to resources, sufficient experience and focus on the existing programs in agriculture.

Majority of the rural youth could not attain the desired production of crops due to lack of appropriate knowledge on agricultural activities, information and technology. Majority of them also lack adequate skills in handling various agricultural implements. Hence the youth must be made competent enough to enhance the agricultural production. In this context, the present study entitled ‘Skill gap analysis among rural youth in rice farming’ was undertaken with the following objectives:

1. To identify the various occupational preferences of rural youth
2. To assess the skill gap among rural youth in rice farming
3. To find out the factors influencing rural youth in acquiring skills in rice farming
4. To suggest strategies to bridge the skill gap among rural youth in rice farming

Scope of the study

Skill gap studies have been conducted in many of the universities under ICAR. This study would help in formulation of suitable policies, provide incentives and opportunities and also aid in designing appropriate training programmes that help in attracting the youth towards rice farming. There is an immense need to analyse the prevailing skill gap among rural youth involved in rice farming, so that the production and quality can be enhanced. This study examines how rural youth can take advantage of the strategies to enhance their skill level in rice farming for sustainable agricultural development.

Limitations of the study

The present study had inherent limitations such as inadequacy of time, finance, extensive distance and other facilities usually encountered by a student researcher. The particular data about rural youth involved in rice farming had not been maintained. The generalizations made based on the findings of the present study may not be completely accurate since the research was confined to only 120 respondents, representing the entire community of rural youth involved in rice farming in Palakkad district of Kerala. The findings of this study were based on the responses indicated by the rural youth, so the study could suffer from prejudices and inadequacy of information. However, data was cross-checked to reduce the errors and misconceptions to the possible extent. Despite all these constraints, earnest efforts had been taken to make the study as objective and systematic as possible.

Presentation of the study

The thesis is organized and presented in five chapters. The first chapter outlines a brief introduction, objectives, scope and limitations of the study. The second chapter intends to provide theoretical and empirical background for the study by reviewing the relevant published literature. The methodology of research includes selection of study area, sampling procedure and measurement of variables along with statistical tools used and had been described in the third chapter. The results and the discussion based on the obtained results were explained in the fourth chapter. Finally, the fifth chapter deals with summary and conclusion of the thesis. The references, appendices and abstract of the study are given at the end.

Review of literature

2. REVIEW OF LITERATURE

The review of literature is a comprehensive summary of the prior research on a topic. This chapter is devoted to a retrospective analysis of the available literature relevant to the present study. It is expected to serve as a background and to provide a theoretical framework of the various concepts related to this study. Various sources such as accessible journals, reports, magazines, e-resources and proceedings of seminars were utilized to gather the most important review on different aspects of the current study. The review has been organized under the sub-heads as follows:

2.1 Profile characteristics of the rural youth

2.2 Occupational preferences of the rural youth

2.3 Existing skill level of rural youth in rice farming

2.4 Skill gap among rural youth in rice farming

2.5 Factors affecting rural youth in acquiring skills in rice farming

2.6 Strategies to bridge the skill gap among rural youth in rice farming

2.1 Profile characteristics of the rural youth

2.1.1 Age

Shireesha (2016) in her study on youth in farming documented that majority of the youth were aged above 30 years followed by more than one-fourth (29.58%) were aged 26 to 30 years and the remaining (13.34%) were below 25 years of age.

Naresh (2018) indicated that around two-third (65%) of the rural youth in ChamaraJanagara were under the age group of 26 to 35 years and the remaining one-third (35%) were between 18 to 25 years.

Sharath (2018) documented that more than three-fourth (78.33%) of the rural youth were in the middle age (25 to 35 years) followed by more than one-fifth (21.67%) were in young category (15 to 25 years).

Das (2019) reported that around half (49.70%) of the trained youth in Assam were between 22 to 32 years of age while more than one-fourth (25.83%) were between 19 to 21 years of age and the remaining one-fourth were between 33 to 35 years.

Kumar *et al.* (2019) reported that more than half (62.50%) of the youth were above 29 years of age followed by one-fifth were between 27 to 28 years and the remaining (17.50%) were under the age of 26 years.

Sahu (2019) found that around half of the rural youth in Cooch Behar were found in the age group above 31 years followed by more than two-third (40.50%) were under 24 to 30 years and only a few were below 23 years of age.

Chandrashekar and Shivanna (2020) revealed that more than half of the rural youth in Karnataka were under the age category of 20 years followed by more than one-third were between 21 to 25 years.

Mubeena *et al.* (2020) noted that more than one-third (37.50%) of the rural youth in Andhra Pradesh were above 31 years followed by nearly one-third (36.25%) were between 26 to 30 years and the remaining one-fourth (26.25%) were below 25 years.

Singh (2020) found that more than three-fifth of the rural youth (62.22%) in Banda district were between the age group of 25 to 33 years followed by more than a fifth (21.11%) were above 33 years while 16.67 per cent were found to be below 25 years of age.

Effendy and Haryanto (2020) revealed that nearly one-third of the rural youth in Majalengka district of Indonesia were between the age group of 27 and 29 years.

2.1.2 Gender

Dash and Kumar (2017) revealed that more than three-fourth (80%) of the youth were males and the remaining one-fifth were females.

Kumar and Barman (2018) studied profile characters of out-migrant rural youth of Assam and observed that majority (92.67%) of the out-migrant youth were males.

Martal (2018) delineated that more than two-third of the rural youth in Sindhudurg district of Maharashtra were males and the remaining were females.

Patidar (2018) found that more than three-fourth (76.67%) of the youth in Bundelkhand region of Madhya Pradesh were males while less than one-fourth (23.33%) were female respondents.

Chaudhary *et al.* (2019) identified that nearly three-fourth (74%) of the rural youth involved in agriculture and allied activities of Karsog were males and the remaining one-fourth (26%) were females.

Chandrashekar and Shivanna (2020) indicated that more than half (52.17%) of the rural youth in Karnataka were females.

Rawat *et al.* (2020) pointed out that more than half of the rural youth aged 26 to 30 years were males.

Tsitsi *et al.* (2020) found that more than half of the rural youth in Malawi were males.

2.1.3 Educational status

Devi *et al.* (2017) observed that majority of rural youth in Manipur had completed their under-graduate program followed by more than one-fourth were post-graduates and only a few had completed higher secondary education.

Chouchan (2018) indicated that around one-fifth (20.83%) of the rural youth in Tikamgarh district of Madhya Pradesh had obtained high school education and above followed by 18.33 per cent had middle school education and a few had completed primary education.

Patidar (2018) stated that more than two-third of the youth in Bundelkhand region of Madhya Pradesh had obtained middle school education followed by more than one-fifth had completed high school education and above and only a few were illiterates.

Tripathi *et al.* (2018) studied the attitude of rural youth towards farming in Haryana and observed that nearly two-third of the rural youth had intermediate level education followed by more than one-fifth (22.60%) were graduates and only a very few (11.85%) were post-graduates.

Chaudhary *et al.* (2019) indicated that nearly one-third of the rural youth in Karsog region of Himachal Pradesh were graduates followed by diploma holders (30.40%), higher secondary education (22.40%), primary education (6.80%).

Chinchmalatpure and Tekale (2019) noted that 43.33 per cent of the rural youth had completed higher secondary education followed by more than one-third had high school education and only a few had primary school education.

Das (2019) reported that more than one-third (39.17%) of rural youth in Assam had obtained higher secondary education followed by more than one-fourth (29.17%) had high school education while only a few (15.83%) were graduates.

Shivaji (2019) revealed that majority (45.83%) of the rural youth in Akola had completed higher secondary education followed by more than one-fourth (26.67%) were graduates and the remaining had high school education.

2.1.4 Land holding

Gedam *et al.* (2017) found that more than two-third (69.17%) of the youth in Nagpur were holding less than one hectare of land followed by nearly one-fourth

(24.17%) were holding one to two hectares and a very few had more than two hectares of land.

Chouchan (2018) reported that majority of the rural youth in Tikamgarh were holding two hectares of cultivable land followed by one-fifth were holding less than a hectare of land.

According to Naresh (2018), more than half of the rural youth practicing integrated farming in Chamarajanagara were holding one to two hectares of land followed by more than one-fourth (31.25%) were holding above two hectares and the remaining (18.12%) were holding less than a hectare of land.

Tripathi *et al.* (2018) pointed out that more than one-fourth (29.26%) of rural youth in Hisar district had small land holding followed by more than one-fourth (25.93%) had medium land holding and the remaining (22.22%) had a large size of operational land holding.

Vihari (2018) revealed that half of the rural youth in Srikakulam district had small land holdings followed by more than one-fourth (31.66%) had medium land holding and the remaining (12.50%) had a large size of operational land holding.

Chaudhary *et al.* (2019) studied factors determining rural youth participation in agriculture-based livelihood activities in Himachal Pradesh and observed that more than three-fourth of rural youth were holding less than one hectare of land.

Chinchmalatpure and Tekale (2019) observed that more than two-third of the rural youth in Akola and Amravati districts were holding one to two hectares of land whereas less than one-fourth were holding less than one hectare and the remaining few were holding two to four hectares of land.

Das (2019) concluded that one-fourth of the rural youth in Assam were holding less than a hectare of land followed by more than one-third had one to two hectares of land and the remaining had more than two hectares of land.

2.1.5 Farming experience

Jayapuria (2015) opined that nearly half of the rural youth in Patan block of Jabalpur had medium level of experience in farming followed by more than one-fourth had low level of experience in farming and the remaining had high experience in farming.

Shashidhara and Maraddi (2016) delineated that more than half of rural youth in Yadgir district of Karnataka had less than five years of experience in farming followed by more than one-fourth had five to ten years of farming experience and only a few had more than ten years of experience in farming.

Shireesha (2016) opined that more than half (54.17%) of the rural youth in Guntur had medium farming experience followed by more than one-fourth (28.75%) with low experience and the remaining had high level of experience in farming.

Chouchan (2018) revealed that majority (44.17%) of the rural youth in the Tikamgarh had medium level of experience in farming followed by more than one-fourth (30.83%) had low level of experience and the remaining had high level of experience in farming.

Sharath (2018) observed that nearly half (48.33%) of rural youth had five to ten years of experience in farming followed by more than one-fourth (34.17%) had more than ten years of experience in farming and the remaining had less than five years of farming experience.

Prajapati (2018) concluded that half of the rural youth in Satna district of Madhya Pradesh had medium level of experience in farming.

Shivaji (2019) found that more than half (60.83%) of the rural youth had medium level of experience in farming followed by one-fifth with high level of experience in farming.

Bharat (2020) studied the occupational aspirations of rural youth in Parbhani and concluded that more than three-fourth (81.66%) of the rural youth had medium level of experience in farming.

Ali *et al.* (2021) documented that more than half of the rural youth in Pakistan had less than 15 years of experience in farming.

2.1.6 Farm power possession

Trevor and Kwenye (2018) identified that majority of rural youth in Zambia purchased farming tools such as sprayer, cutter *etc.* through the revenue generated from farming activities.

Saha (2019) observed that more than three-fourth (81.50%) of the rural youth in Cooch Behar of West Bengal had low possession of agricultural implements such as sprayer, tractor, electric motor *etc.*

Kavyashree *et al.* (2021) found that implements such as sprayer/duster (63.33%), cage wheels (36.67%), cutter (35%), bullock-drawn puddler (31.67%) and power tiller (30%) were possessed by the respondents in Shivamogga district for paddy cultivation.

2.1.7 Occupation

Rani and Rampal (2016) in their study on the involvement of rural youth in agricultural activities in Ludhiana district of Punjab reported that majority of the rural youth were engaged only in agriculture and allied activities.

Tripathi *et al.* (2018) reported that more than one-third (41.48%) of rural youth in Hisar district were students followed by one-fifth (21.85%) were engaged in farming and allied activities and a few were engaged in business.

Vihari (2018) found that one-fourth of the rural youth in Srikakulam district were engaged in agriculture and allied sector followed by more than one-fifth (22.50%) were

engaged only in farming and nearly one-third (32.51%) of them were found to be laborers while a few were employed in service sector.

Kumar *et al.* (2019) concluded that agriculture was the main occupation of majority of the rural youth in the study area. A few of them were engaged in agro-based enterprise and dairy farming while only one respondent was engaged in each of the activities such as fisheries, business and landscaping.

Bharat (2020) reported that half of the rural youth in Marathwada region were students followed by nearly one-third were engaged in farming and allied activities while less than a fifth were engaged in business and a few were self-employed.

Singh (2020) reported that one-third of rural youth in Banda district of Uttar Pradesh were engaged in farming followed by nearly one-fourth (24.44%) were employed in service sector, less than a fifth (18.89%) were laborers and the remaining were engaged in business.

Tsitsi *et al.* (2020) indicated that nearly half of the rural youth in Malawi were engaged in farming as their main occupation.

2.1.8 Annual income

Devi *et al.* (2017) stated that nearly two-third (64.17%) of the rural youth in Manipur had received an income in the range between Rs. 85000 to Rs. 4.5 lakhs per annum.

Patidar (2018) delineated that nearly half (44.16%) of the rural youth in Bundelkhand region belonged to the category of medium annual income followed by more than one-fourth (32.50%) belonged to the category of high annual income and only a few belonged to the category of low income.

Sonyabapu (2018) concluded that more than half of the rural youth in Parbhani had an annual income of more than Rs. 1 lakh and only a few had income below Rs. 1 lakh per annum.

Sharath (2018) found that two-third of rural youth in Raichur had an annual income of less than Rs.1 lakh followed by more than one-fourth (30.83%) had income between Rs. 1 to 2 lakhs while only a few had income above Rs. 2 lakhs.

Chaudhary *et al.* (2019) reported that nearly one-third (36.4%) of rural youth in Karsog region of Himachal Pradesh had an annual income between Rs. 50000 to Rs. 100000 followed by nearly one-fourth (24%) had income above Rs. 2 lakhs and only a few (15.60%) had income below Rs. 50000 and the remaining had income between Rs. 1 to 2 lakhs.

Chinchmalatpure and Tekale (2019) noticed that around half of the rural youth in Akola had an income of Rs. 1 to 2 lakhs followed by more than one-fourth (27.50%) had income below Rs. 1 lakh and the remaining had an income of more than Rs. 2 lakhs.

Saha (2019) reported that majority (91.50%) of the rural youth in Cooch Behar belonged to low annual income category and the remaining belonged to the category of medium to high annual income.

Mubeena *et al.* (2020) found that more than two-third (69.58%) of the rural youth in Andhra Pradesh belonged to the category of medium annual income.

Singh (2020) indicated that more than half (58.78%) of the rural youth in Banda district had income less than Rs. 3 lakhs per annum followed by more than one-fourth had Rs. 3 to 5 lakhs per annum and the remaining had an income of more than Rs. 5 lakhs per annum.

2.1.9 Social participation

Devi *et al.* (2017) observed that three-fourth of rural youth (75.83%) in Manipur had medium level of social participation followed by less than a fifth (14.10%) had low level of social participation and only a few had high level of social participation.

Chouchan (2018) noticed that more than one-third (39.17%) of rural youth in Tikamgarh district had medium social participation accompanied by 35 per cent had low social participation and the remaining belonged to high category of social participation.

Patidar (2018) stated that nearly half (45%) of the rural youth in Bundelkhand region had medium social participation followed by more than one-fourth (31.67%) had high social participation and the remaining (23.33%) had low social participation.

Saha (2019) reported that more than three-fourth (87%) of the rural youth had low level of social participation and only a few had medium to high level of social participation.

Shivaji (2019) revealed that more than three-fourth (82.50%) of the rural youth had low to medium level of social participation while the remaining had high social participation.

Bharat (2020) observed that majority of the rural youth in Marathwada region had medium level of social participation followed by a fifth had high social participation and less than a fifth (17.50%) of the respondents had low level of social participation.

Singh (2020) delineated that more than half (63.33%) of skilled youth in Banda district had no membership in any organization followed by nearly one-third (34.33%) had membership in one or more organizations while only a few were found to be office bearers.

2.1.10 Trainings received

Preethi *et al.* (2014) revealed that more than half (60%) of the farm youth in Tumakuru district of Karnataka had undergone trainings in agriculture and allied activities.

Shivacharan (2014) found that more than three-fourth (78.33%) of rural youth in Nizamabad and Karimnagar districts had not undergone any training while only a few (21.67%) had received trainings.

Naresh (2018) indicated that more than three-fourth (83.13%) of the rural youth in Chamarajanagara district had received trainings on agriculture and related disciplines.

Sharath (2018) reported that only one-fifth of the rural youth in Raichur had received trainings in agriculture and allied activities.

Mubeena *et al.* (2020) revealed that majority (72.91%) of the respondents in Andhra had not undergone any training while more than one-fourth (27.08%) had received trainings.

Chakma *et al.* (2021) documented that majority of the rural women in Bangladesh had not received trainings in rice farming.

2.1.11 Possession of ICT tools:

Syiem and Raj (2015) documented that smartphone was owned by all the 120 respondents in Meghalaya state followed by television (61.66%), radio (45%) and computer (5.83%).

Shashidhara and Maraddi (2016) indicated that more than three-fourth (90%) of the rural youth in Yadgir district of Karnataka possessed smartphones followed by less than a fifth had personal computer.

Dash *et al.* (2017) concluded that television was owned by all the respondents in Udham Singhnagar district of Uttarakhand followed by mobile phones (99.20%), computer with internet (46.70%), landline (20%) and radio (25%). He further added that mobile phone (91.70%) and computer with internet (55.80%) were considered important in the process of information dissemination.

Devi *et al.* (2017) documented that more than three-fourth (84.16%) of the rural youth in Manipur had internet access and almost all the respondents owned a smartphone followed by more than one-third (37.50%) possessed a laptop. Majority of the rural youth accessed social media tools such as Whatsapp (82.50%), Facebook (77.49%) and YouTube (77.49%).

Kumar and Philip (2019c) delineated that majority (93.12%) of the rural youth in Kanyakumari district had medium to high possession of modern electronic gadgets such as smartphone, laptop, desktop and other accessories such as webcam, printer, scanner, digital camera *etc.* He also found that smartphone was owned by almost all the respondents and they regular accessed social networking tools such as Facebook and WhatsApp.

2.1.12 Extension agency contact

Rani and Rampal (2016) indicated that one-third of the rural youth in Ludhiana district regularly contacted the scientists in Punjab Agricultural University. Nearly half (44.17%) of the youth contacted bank officials for sanctioning the agricultural loans followed by one-third had contacted the Agricultural Development Officer occasionally and none of them contacted the scientists in Krishi Vigyan Kendra (KVK).

Chouchan (2018) reported that around half of the rural youth in Tikamgarh district had medium contact with extension personnel whereas one-fourth had low contact with extension personnel and the remaining had high contact with extension personnel.

Naresh (2018) indicated that majority (48.13%) of the youth in Chamarajanagara district had medium contact with extension agencies followed by one-third had low level of contact with extension agencies(33.75%) and less than a fifth (18.12%) had high extension agency contact.

Vihari (2018) noticed that more than half (57%) of the rural youth in Srikakulam district had medium extension contact followed by more than one-fourth (26.64%) had low extension contact and only a few (15.86%) had high level of extension contact.

Chinchmalatpure and Tekale (2019) revealed that majority of the rural youth (45%) in Akola were found to have medium level of contact with extension agencies followed by more than one-third (42.50%) had low level of contact with extension agencies and only a few (12.50%) had high level of contact with extension agencies.

Sahu (2019) revealed that half of the rural youth in Cooch Behar had low level of contact with extension agencies and the remaining half had medium to high level of contact with extension agencies.

Bharat (2020) found that more than two-third (68.33%) of the respondents in Marathwada region had medium contact with extension agencies.

Mubeena *et al.* (2020) observed that more than half of the rural youth (57.50%) in Andhra Pradesh had medium contact with extension agencies followed by nearly one-third (31.25%) had high level of contact with extension agencies and only a few had low level of contact with extension agencies.

2.1.13 Economic motivation

Tripathi *et al.* (2018) opined that nearly three-fourth of the rural youth (75.56%) in Haryana had high level of economic motivation.

Chinchmalatpure and Tekale (2019) reported that more than half of the rural youth in Akola belonged to medium category of economic motivation while around one-fourth belonged to low category of economic motivation and only one-fifth of them had high level of economic motivation.

Chouchan (2018) revealed that more than two-third (68.33%) of the rural youth in Tikamgarh district had medium to high level of economic motivation and the remaining had low level of economic motivation.

Sharath (2018) in his diagnostic study on retaining rural youth in agriculture observed that more than three-fourth (86.67%) of the rural youth had medium economic motivation.

Das (2019) revealed that majority (44.17%) of the rural youth in Assam belonged to high level of economic motivation followed by more than one-third (35%) had medium level of economic motivation and the remaining one-fifth (20.83%) had low level of economic motivation.

Sahu (2019) found that nearly half (42.50%) of the rural youth in Cooch Behar had medium economic motivation followed by more than one-third (40.50%) had high economic motivation while only a few (17%) had low level of economic motivation.

Mubeena *et al.* (2020) found that nearly two-third (65%) of the respondents in Andhra Pradesh belonged to medium category of economic motivation while 22.50 per cent had high economic motivation and 12.50 per cent had low level of economic motivation.

Parmar (2020) observed that more than one-third (37.50%) of the rural youth in Yavatmal and Ahmednagar districts of Maharashtra had medium economic motivation followed by more than one-fourth (33.75%) had high economic motivation and the remaining (28.75%) had low economic motivation.

2.1.14 Scientific orientation

Jayapuria (2015) found that majority (46.67%) of rural youth in Patan block of Jabalpur had medium level scientific orientation whereas more than one-fourth (27.50%) had high level of scientific orientation and the remaining one-fourth (25.83%) had low level of orientation towards scientific cultivation practices.

Shireesha *et al.* (2016) reported that nearly half of the rural youth in Guntur belonged to the category of medium scientific orientation.

Chouchan (2018) observed that nearly half (46.67%) of the rural youth in Tikamgarh district had medium scientific orientation followed by more than one-fourth (27.33%) had low scientific orientation and the remaining one-fourth had high scientific orientation.

Naresh (2018) revealed that more than one-third of rural youth in Chamarajanagara district had medium orientation towards scientific farming practices followed by nearly one-third (33.75%) had high level of scientific orientation and more than one-fourth (31.87%) had low level of scientific orientation.

Vihari (2018) studied the perception of rural youth towards agriculture as an occupation in Srikakulam district and reported that more than half of the youth had medium scientific orientation.

Shivaji (2019) found that more than half of the rural youth (59.17%) had medium level of scientific orientation followed by one-fifth (22.50%) had low scientific orientation and only a few (8.33%) had high level of scientific orientation.

2.1.15 Knowledge level of rural youth in rice farming

Subash (2009) studied participation of rural youth in paddy farming and revealed that more than three-fourth (77.50%) of the rural youth in Anand district of Gujarat had medium level of knowledge about rice cultivation followed by less than a fifth (15%) had high level of knowledge in rice cultivation. Only a few (7.50%) of the respondents had low level of knowledge about rice cultivation.

Borua and Brahma (2012) reported that more than half of the trained rural youth (58.75%) in Assam had medium level of knowledge about paddy cultivation while less than one-fourth (23.75%) had high knowledge about paddy cultivation. Only less than a fifth (17.5%) had low level of knowledge on paddy cultivation.

Chouchan (2018) indicated that slightly more than half of the rural youth (51.67%) in Tikamgarh district had medium knowledge about crop production followed by more than one-fourth (31.67%) had high knowledge about crop production. Only less than a fifth (16.66%) had low level of knowledge about crop production.

Chakma *et al.* (2021) revealed that more than half of the rural women in Bangladesh had medium level of knowledge in rice farming.

2.1.16 Information seeking behavior

Shivacharan (2014) revealed that around half of the rural youth had medium information seeking behavior followed by less than a fifth (16.87%) had high information seeking behavior whereas only a few (13.33%) had low information seeking behavior.

Rani and Rampal (2016) observed that more than two-third (68.33%) of rural youth in Ludhiana district participated regularly in Kisan mela followed by more than one-third (40.83%) had occasionally participated in activities such as demonstrations and campaigns organized at the block panchayat level.

Shashidhara and Maraddi (2016) observed that Raita Samparka Kendra (67.50%) and extension agents (56%) constitute the major sources of information for rural youth in Yadgir district of Karnataka followed by agricultural colleges (51%), neighbors (49%), television (12.50%), radio (15.50%), newspaper (6%) and Non-Governmental Organisations (5.50%). Majority of the rural population were willing to seek information on land holding certificates followed by crop cultivation (44.50%), input sources (40.50%), income-generating activities (26%), credit facilities (19.50%), new technologies in agriculture (17.50%) and market information (14.50%).

Dash *et al.* (2017) documented that half of the rural youth in Udham Singhnagar district had medium exposure to mass media sources whereas more than one-third (44.17%) had high level of exposure and only a few (5.83%) had low level of exposure to mass media sources. He also found that the perceived credibility of the information presented through television was high (62.50%) followed by newspaper (48.10%) and a very low credibility was exhibited towards radio.

Dutta *et al.* (2017) observed that more than three-fourth (80%) of the rural youth in Lakhimpur district of Assam had medium level of information seeking behavior.

Naresh (2018) revealed that half of the rural youth in Chamarajanagara district had medium information seeking ability followed by more than one-fourth had high information seeking ability and less than a fifth had low level of information seeking ability.

Tripathi *et al.* (2018) reported that major informal sources of agricultural information were fellow farmers and neighbors while the major formal source was found to be village extension workers. Majority of the rural youth in Hisar district were found to

seek information regularly from various mass media sources such as television followed by newspaper, internet, exhibition and radio.

Singh (2020) found that nearly two-third (62.22%) of rural youth in Banda district belonged to the category of medium level of information seeking behavior followed by less than one-fifth (21.11%) belonged to the category of high information seeking behavior and the remaining (16.67%) belonged to the category of low information seeking behavior.

2.1.17 Achievement motivation

Gangwar and Kameswari (2016) revealed that more than two-third (70%) of the rural youth in Udham Singhnagar district of Uttarakhand were under the category of medium achievement motivation.

Devi *et al.* (2017) reported that more than two-third of the rural youth in Manipur were observed to have medium achievement motivation.

Tripathi *et al.* (2018) stated that more than half of the rural youth (52.59%) in Hisar district had high achievement motivation and the rest (47.41%) had low to medium level of achievement motivation.

Chinchmalatpure and Tekale (2019) reported that more than two-third of the rural youth in Akola had medium achievement motivation while one-fifth had high achievement motivation and only a few of the youth had low level of achievement motivation.

Das (2019) indicated that more than half (62.50%) of the rural youth in Assam were under the category of medium achievement motivation followed by slightly less than a fifth (19.17%) were under low category of achievement motivation and the remaining (18.33%) were under high category of achievement motivation.

Kumar and Philip (2019b) reported that three-fourth of the rural youth in Kanyakumari belonged to the category of medium to high level of achievement motivation.

Singh (2020) indicated that majority (53.33%) of the rural youth in Banda district of Uttar Pradesh had medium achievement motivation followed by nearly one-third (35.56%) had high achievement motivation and the remaining (11.11%) had low level of achievement motivation.

2.1.18 Innovativeness

Sharath (2018) reported that more than one-third (43.33%) of the rural youth had high level of innovativeness followed by more than one-fourth (30.83%) had medium innovativeness and the remaining one-fourth had low level of innovativeness.

Tripathi *et al.* (2018) revealed that majority (60.74%) of youth in Hisar district fell under the category of medium innovativeness followed by high (24.07%) and low level (15.19%) of innovativeness.

Chinchmalatpure and Tekale (2019) delineated that nearly two-third (65.83%) of the respondents in Akola belonged to medium category of innovativeness whereas one-fourth (21.83%) had high innovativeness and only a few (12.50%) had low level of innovativeness.

Sahu (2019) revealed that nearly half (48.50%) of the rural youth in Cooch Behar had medium level of innovativeness while one-third (36%) had high level of innovativeness and the remaining (15.50%) had low level of innovativeness.

Shivaji (2019) reported that more than half (59.17%) of the rural youth in Akola had medium innovativeness followed by less than one-fourth (23.33%) had high innovativeness and only a few (17.50%) had low innovativeness.

Bharat (2020) found that more than half of the rural youth (60%) in Marathwada region had medium level of innovativeness followed by one-fifth (20.83%) with low level of innovativeness and the remaining (19.17%) had high innovativeness.

Mubeena *et al.* (2020) documented that more than two-third (72.08%) of the rural youth in Andhra Pradesh belonged to medium category of innovativeness followed by one-fifth (20.84%) belonged to high category of innovativeness. Only a few (7.08%) of the rural youth had low level of innovativeness.

2.1.19 Market orientation

Sreeram (2013) revealed that nearly two-third of the respondents in Palakkad district had medium level of market orientation followed by one-fourth with low market orientation and the remaining (10.83%) with high market orientation.

Janani *et al.* (2016) revealed that more than two-third (66.19%) of the respondents in Krishnagiri district had medium market orientation followed by less than a fifth (15.24%) had high market orientation.

Tripathi *et al.* (2018) found that more than three-fourth of rural youth were highly market-oriented followed by less than a fifth (18.15%) with medium market orientation.

2.2 Occupational preferences of rural youth

Hari *et al.* (2013) observed that majority of the youth in Kerala showed a lower aspiration for agriculture.

Kudare (2013) observed that majority of the rural youth in Dhar district preferred vegetable production followed by crop production, cattle farming and lac production as their occupation.

Harra (2015) found that most of the rural youth in Mandsaur district had highly aspired towards crop production followed by business, poultry farming, fish farming, vegetable production and animal husbandry.

Vishwanatha *et al.* (2014) revealed that majority (70%) of rural youth in Bellary and Koppal districts of Karnataka had medium to high level of aspiration towards agriculture which implies that they prefer to excel in farming.

Dash and Kumar (2017) mentioned that rural youth in Udham Singhnagar of Uttarkhand preferring agriculture as an occupational choice were more inclined towards crop production followed by poultry farming, vegetable production and dairy farming.

Elias *et al.* (2018) found that majority of young rural men and women from India, Mali, Morocco, Mexico, Nigeria and Philippines predominantly aspired for formal white and blue-collar jobs.

Tripathi *et al.* (2018) inferred that around one-fourth of the rural youth in Hisar district preferred government service to be their primary occupation followed by business (20.74%) and agriculture (18.52%) while private sector (4.8%) was the least preferred choice by the respondents.

Chinchmalatpure and Tekale (2019) found that more than half (52.27%) of the rural youth in Akola preferred vegetable cultivation followed by more than one-fourth (31.82%) aspired for floriculture and only a few (15.91) preferred to cultivate fruits and plantation crops. Nearly half of the rural youth had medium level of aspiration towards agriculture (49.17%), horticulture (47.73%) and dairy (57.69%) farming.

Bharat (2020) delineated that more than half (53.09%) of the rural youth in Marathwada region were most interested to take up agriculture and allied activities as their primary occupation. The sales and business had higher aspiration by nearly one-third (35.91%) of the respondents followed by aspiration towards professional occupation (34.88%), skilled occupation (26.21%) and the remaining (17.53%) were most interested in unskilled occupation. In agriculture, majority of rural youth were most interested in crop production (85.83%) followed by dairy farming (66.67%), vegetable production (38.33%) and poultry farming (23.33%).

Ghimiray and Mohapatra (2020) observed more than half (62.50%) of the rural youth in Sikkim preferred government service followed by business (15.8%), private service (6.9%) and only a few of the respondents preferred farming.

Parmar (2020) found that more than one-fourth (30%) of the rural youth in Yavatmal and Ahmednagar districts of Maharashtra aspired to study science and agriculture for higher studies and around half of them aspired to start their own business.

Veetil *et al.* (2020) reported that majority of rural youth in India preferred government service (29.5%) as their career followed by more than one-fourth (27.75%) preferred rice farming and very few preferred to cultivate other crops. More than one-fifth (21%) of rural youth preferred either business or self-employment while slightly less than a fifth (19.5%) opted for other occupations.

2.3 Skill level of rural youth

2.3.1 General skills

2.3.1.1 Positive attitude

Uddin *et al.* (2008) found that more than two-third (71.43%) of the rural youth in coastal areas of Patuakhali district in Bangladesh showed a favorable attitude towards selected modern agricultural technologies *i.e.*, High Yielding Variety (HYV) in rice.

Kavyashre *et al.* (2021) revealed that more than half (53.34%) of the respondents in Shivamogga district had a favorable attitude towards paddy cultivation practices.

Maurya *et al.* (2021) studied the relationship between the profile of rural youth and their attitude towards agriculture and reported that more than two-third (67.19%) of the rural youth in Hisar and Bhiwani districts of Haryana exhibited a favorable attitude towards farming and allied activities.

2.3.1.2 Self-esteem

Krahn and Chow (2016) found that unemployment of rural youth contributed to a low level of self-esteem in Alberta province.

Sharath (2018) revealed that one-third of rural youth had medium level of self-esteem followed by more than one-fourth (30.83%) had low level of self-esteem and only a few (32.50%) had high level of self-esteem.

Das (2019) observed that nearly two-third of the rural youth in Assam had medium level of self-efficacy followed by 18.33 per cent and 15.83 per cent belonged to high and low category of self-efficacy respectively.

2.3.1.3 Self-confidence

Anamica (2013) observed that around three-fourth (80%) of the rural youth in Coimbatore district possessed moderate to high level of self-confidence followed by less than a fifth with low level of self-confidence.

Dutta *et al.* (2017) reported that more than one-third (43.33%) of the rural youth in Lakhimpur district of Assam had medium level of self-confidence followed by more than one-fourth (35%) with high level of self-confidence and less than a fifth (21.67%) had low level of self-confidence.

Naresh (2018) reported that majority (45%) of the rural youth in Chamarajanagara district had high level of self-confidence.

Das (2019) documented that nearly two-third (65.83%) of rural youth in Assam had medium level of self-efficacy followed by less than a fifth (18.33%) with high level of self-confidence and only few (15.83%) with low level of self-efficacy.

Singh (2020) found that a large proportion (88.89%) of the rural youth in Banda district of Uttar Pradesh had medium level of self-confidence and the remaining (11.11%) had low level of self-confidence.

2.3.1.4 Learning skills

Colquitt *et al.* (2000) in his study on theory of training motivation concluded that learning motivation of trainee was significantly related to their skill acquisition.

Manjunath *et al.* (2016) reported that half of the rural youth in Navsari district of Gujarat had high cognitive ability about agricultural development activities.

Das (2019) reported that more than half of the rural youth in Assam had medium level of learning motivation.

Magagula and Tsvakirai (2019) indicated that majority of the participants in Mpumalanga province of South Africa possessed low learning skills in agricultural business promotions and had no knowledge about government initiatives that promote agripreneurship.

2.3.2 Managerial skills

2.3.2.1 Problem solving skills

Allen *et al.* (2013) reported that there was a positive impact on problem solving skills of the respondents in Britain by practicing extra-curricular activities.

Nagendra (2018) found that the problem solving skills was found above average among the respondents in Kerala with an index value of 62.50.

Manjunath *et al.* (2019) indicated that the prevailing skill gap among the employers of Navsari district in problem solving was found to be low with a mean score of 0.52.

2.3.2.2 Decision making skills

Tripathi *et al.* (2018) documented that three-fourth (70.36%) of the rural youth in Hisar had high decision making ability followed by a fourth (27.04%) had low to medium level of decision making ability.

Naresh (2018) observed that majority (46.25%) of the rural youth in Marathwada region had medium decision making ability followed by more than a fourth belonged to low category and the remaining one-fourth of them had high level of decision making ability.

Sahu (2019) revealed that majority of the youth in Cooch Behar (44%) had medium decision making ability whereas nearly one-third (35.50%) had high level of decision making ability. Only a fifth (20.50%) had low decision making ability.

Singh (2020) reported that slightly more than two-third (67.78 %) of the skilled youth in Banda district had medium decision making ability.

Thakor and Pandya (2021) observed that more than two-third (68.74%) of the rural youth in Banaskantha district of Gujarat made decisions independently on their own in activities such as adoption of a new variety, subscribe to farm publications, shifting to a new cropping pattern and trying out new practices.

2.3.2.3 Entrepreneurial skills

Shivacharan (2014) observed that around half of the rural youth had high entrepreneurial behavior followed by more than one-fourth (29.17%) with medium entrepreneurial behavior whereas one-fifth had low level of entrepreneurial behavior.

Dutta *et al.* (2017) reported that around two-third (63.34%) of the rural youth in Lakhimpur district of Assam had medium level of entrepreneurial behavior.

Naresh (2018) reported that more than two-third (70%) of rural youth in Chamarajanagara district had medium to high level of entrepreneurial behavior followed by more than one-fourth (30%) with low entrepreneurial behavior.

Nurlaela *et al.* (2020) found that rural youth in Yogyakarta region of Indonesia had moderate entrepreneurial behavior to identify business opportunities with a mean of 3.48 followed by utilizing those business opportunities (3.05) and to develop the business (3.02).

2.3.2.4 Marketing skills

Nwofe and Ituma (2016) opined that youth in Ebonyi state of Nigeria lack skills in treating the rice seeds with storage insecticide and pesticides (2.85), maintaining

records such as production (2.75), labor (2.73), sales (2.97), expenses (2.61) and inventory records (2.75) which would hinder their marketing activity.

Naik (2017) reported that majority of the respondents in Kerala had high level of marketing ability and had good knowledge about current market trends and market information.

2.3.2.5 Time management skills

Laidler (2000) reported that improving the time management skills and entrepreneurship of the participants in Western Australia would make their farming related business better and sustainable in a long run.

Koka (2015) found that almost all the respondents in Andhra Pradesh require effective time management skills at higher level.

Tanwar (2018) indicated that nearly one-fourth of the respondents in Jobner lack skill to make effective use of their time and schedule their activities.

Ekezie (2019) documented that majority of the graduate youth in Rivers state require time management skills for farming enterprises.

2.3.2.6 Risk taking skills

Tripathi *et al.* (2018) reported that more than half of the respondents in Hisar district had high risk taking ability followed by more than one-third (40.37%) had low to medium level of risk taking ability.

Chouchan (2018) stated that half of the rural youth in Tikamgarh district were medium risk bearers followed by more than one-fourth (25.83%) were low risk bearers and the remaining were high risk bearers.

Vihari (2018) reported that more than half (57.50%) of the rural youth in Srikakulam district had medium level of risk orientation.

Sahu (2019) found that majority of the rural youth in Cooch Behar had medium to high risk bearing capacity and only a few had low level of risk bearing capacity.

Bharat (2020) revealed that majority of the rural youth in Marathwada region had medium orientation towards risk followed by 11.16 per cent with low orientation towards risk and 9.17 per cent with high orientation towards risk.

Singh (2020) reported that more than two-third of the rural youth in Banda district were medium risk takers followed by 16.67 per cent were high risk takers and the remaining 13.33 per cent were low risk takers.

2.3.3 Communication skills

2.3.3.1 Information management skills

Aparna *et al.* (2014) reported that more than three-fourth of the respondent (76.67%) in Karnataka belonged to medium category of information management behavior.

Saha and Devi (2014) revealed that more than two-third (71.25%) of the respondents in Assam had medium level of information management skill followed by less than a fifth (15%) had low information management skill and the remaining had high information management skill.

Anwar (2016) found that majority of respondents (76.67%) involved in paddy farming in Kannur district had medium level of information management behavior.

2.3.3.2 Listening skills

Goudappa *et al.* (2017) conducted a study in radio listening behavior and concluded that majority of the rural youth in Kalabugi district of Karnataka preferred to regularly listen to the programs, contributed their maximum time and paid full attention to the farm programs, live telecasts and interviews given by progressive farmers and experts.

Kumbhare *et al.* (2015) revealed that more than half of the respondents (52.67%) from Haryana, Uttar Pradesh and Maharashtra were regular listeners of community radio programmes.

Khadri *et al.* (2017) found that the respondents in Raichur were regular listeners of farm programmes such as live programmes (45.83%), progressive farmer interviews (41.67%), discussion on important agriculture related topics (37.50%), expert interviews (40%) and special talks (35%).

2.3.3.3 Interpersonal skills

Bala *et al.* (2019) observed that more than two-third of the respondents from Haryana and Delhi possessed an average level of interpersonal skills whereas one-fifth had low level of interpersonal skill.

Prasteyo *et al.* (2017) revealed that the leader of Sidodadi farmer group in Indonesia had an above average level of interpersonal communication with his group members.

Nagendra (2018) reported that majority of the respondents in the study had high level of interpersonal skills.

2.3.3.4 ICT skills

Syiem and Raj (2015) reported that majority of the respondents in Meghalaya accessed smartphone with internet for social communication, marketing their produce and for information services.

Radhakrishnan *et al.* (2020) documented that one-third of rural youth in Coimbatore had internet access of which one-third were using social media tools such as Whatsapp followed by Facebook (24.16%) and Twitter (10.84%).

Devi *et al.* (2017) stated that majority of the rural youth in Manipur accessed smartphone followed by Whatsapp (68.17%), Facebook (59%), Youtube (47.42%) and e-mail (30.17%). The information kiosk (13.2%) was the least accessed by the rural youth.

Kumar *et al.* (2019) found that majority of farm youth agreed that they accessed social media tools such as Whatsapp, Facebook and Youtube to receive new information related to farming and allied activities.

Tsitsi *et al.* (2020) indicated that ICTs like radio and internet were responsible for increased access to agricultural information by rural youth in Malawi.

Junissa *et al.* (2021) revealed that the utilization of ICTs had a positive influence on interest, involvement and participation of the youth from Indonesia in agricultural activities.

2.3.4 Technical skills

Shanjeevika *et al.* (2019) reported that the highest participation of rural youth was observed in harvesting (68.90%), irrigation management (52.20%), manure and fertilizer application (47.80%) followed by medium participation in the collection of harvested crops (20.00%), preparation of land (15.60%) and application of manure and fertilizers (15.60%). The least participation was observed in marketing (93.30%) and seed processing (92.20%).

Nwofe and Ituma (2016) reported that rural youth in Ebonyi state need skills to identify equipment for land preparation (3.31), land clearing with tractor (3.10), use plough for tilling the land (3.94), flooding the rice field (2.55), harrowing and puddling the land (2.85), construction of water control structures (2.66) and leveling (2.78) the rice field. They also lack skills in nursery establishment (3.87), transplanting (3.73), NPK basement application (3.95), urea application (3.75), manual weeding (3.77), management of pest (2.85) and disease (3.15), harvesting (3.95), winnowing (3.76) and use of threshing machine (2.83).

Rani and Rampal (2016) concluded that majority of rural youth in paddy cultivation were fully involved in variety selection, harvesting, nursery raising and irrigation management whereas partially involved in activities such as harvesting (75%), pest/ disease management (60%), weeding (56.67%) and around two-third were not involved in transplanting.

Kumar *et al.* (2019) found that majority of the rural youth were found to lack skills in nursery management followed by calculation of fertilizer dosage, seed treatment with chemicals, fertilizer application, pest/ disease identification and management, irrigation, seed selection and weed management.

Shivaji (2019) reported that majority of the rural youth from Akola lack skills in the operation of farm machineries, purchase of farm implements, post-harvest operations, soil conservation practices, tillage operation and fertilizer application.

2.4 Skill gap among rural youth

Yusuf *et al.* (2014) documented that majority of poultry farmers in Nkonkobe municipality of Eastern Cope province were not competent in feeding stuff skills, record keeping and marketing skills followed by less competency were observed in the management of flocks and chicks, housing and equipment skills and pest and disease management skills.

Ighoro *et al.* (2017) found that there was a significant skill gap among cassava farmers of Niger delta region in production activities such as packaging of cassava products, soil management strategies, making of pellets, chips and cassava flour, record keeping, chemical application techniques, pest identification/control, marketing of cassava and products, disease identification/control, processing techniques and preparation/handling of cuttings.

Aftroz *et al.* (2018) reported that the sericulture farmers of Eastern India lack prerequisite skills in record keeping and marketing (3.31), disinfection management (2.79), incubation management (2.57), hygiene management (2.54), young age rearing

management (2.52), rearing house management (2.42) followed by late age rearing management (1.89), mounting and harvesting management (1.68).

Ahmad *et al.* (2018a) indicated that the highest skill gap was observed among the farmers of Pakistan in grading (3.06) whereas packing scored the lowest skill gap (2.50) among the commission agents regarding the management and marketing costs involved in cotton farming.

Ahmad *et al.* (2018b) observed that the highest skill gap among the cotton farmers in Pakistan was found regarding production practices in biological (3.87) and physical (3.78) control of insect pests followed by plant population (3.63), use of pesticides (3.62), variety selection (3.52), irrigation (3.41), intercultural operations (3.41) and seed rate (3.39). whereas in the case of production and quality aspects, management factors such as cause of the disease (3.21), cultivation of unapproved varieties (3.13) and lack of appropriate harvesting tools (3.11) exhibited the maximum skill gap.

Nagendra (2018) reported that the overall skill gap was found to be low (14.54%) among the agricultural graduates of Kerala. The self-presentation skills, information skills, interpersonal skills, ICT skills and critical thinking skills had the highest skill gap whereas customer service skills, empathy, adaptability, responsibility and management of people exhibited least skill gap among graduates.

Rohit *et al.* (2020) stated that highest level of skill gap among the extension personnel in Krishi Vigyan Kendras was found in designing and conducting farmers' training, assessing training needs of the farmers, ability to access the internet, knowledge about adult education, ability to prepare visual aids, evaluating the extension program and ability to effectively convey the messages.

2.5 Factors affecting rural youth in acquiring skills in rice farming

Premavathi (2002) noted that age, education, occupation, income, social participation, innovativeness and scientific orientation of the respondents had non-significant association with skill acquisition. Land holding, farming experience and

contact with extension agencies had a significant influence with their acquisition of skills in farming.

Ighoro *et al.* (2017) reported that age and farming experience had significant influence on cassava farmers to receive trainings for enhancing their skill level.

Ray *et al.* (2020) observed that factors such as education, income and trainings received by the farm youth in Odhisha had significant association with their perceived skill level in agripreneurship whereas age, land holding and social media exposure had non-significant association with their skill level in agripreneurship.

2.5.1 General skills

Uddin *et al.* (2008) revealed that education, innovativeness and knowledge level were the factors which had a positive and significant association with the attitude of rural youth from Bangladesh towards HYV rice cultivation. The variables such as age, annual income and extension agency contact had a non-significant relationship with their attitude towards the cultivation of High Yielding Varieties in rice.

Borua and Brahma (2012) found that age, social participation and achievement motivation were found to influence the knowledge level of respondents.

Manjunath *et al.* (2016) delineated that age, education, extension participation and achievement motivation had a positive and non-significant relationship with the knowledge level of rural youth whereas annual income, extension contact, land holding, economic motivation, innovation and social participation had a negative and non-significant association with their knowledge level.

Sharath (2018) reported that factors namely education, extension contact and achievement motivation of rural youth had a positive and significant association with self-esteem whereas annual income and economic motivation had no significant association with their self-esteem. Age, innovativeness, farming experience had negatively significant association with self-esteem. Farming commitment and

achievement motivation had a significant influence over the self-esteem level of rural youth.

Kumar and Philip (2019a) stated that the major contributing variables towards knowledge gain of the rural youth were found to be gender, educational status, farm size, extension agency contact, training undergone, occupation and information seeking behavior.

Maurya *et al.* (2021) found that factors such as occupation and income expectancy showed positive and significant effect on the attitude of youth in farming whereas age, education, farming experience, economic motivation and self-reliance exhibited negative and significant effect. Only achievement motivation and farm skill had a non-significant effect on the attitude of youth in farming.

2.5.2 Managerial skills

Buragohain *et al.* (2018) observed that age, land holding, annual income, training and mass media exposure had a positive and significant relationship with the extent of participation of rural youth in management activities.

Moromi *et al.* (2018) reported that age, education, land holding, occupation and annual income of rural youth were positively significant and highly correlated with their decision making ability in paddy farming whereas training exposure had a non-significant relation with their decision making ability.

Naresh (2018) found that education, land, occupation, income, material possession and source of information utilization had a positive and significant relationship with the entrepreneurial behavior of rural youth. Age had negative and non-significant relation whereas social participation had non-significant association with their entrepreneurial behavior.

Thakor and Pandya (2021) revealed that innovativeness and sources of information had positive and significant association with decision making ability of the respondents in farming whereas age and family size had non-significant relationship.

2.5.3 Communication skills

Anwar (2016) reported that education, annual income, social participation, extension contact, training received, economic motivation, scientific orientation and market orientation had positive and significant association with the information management behavior of the respondents involved in rice farming.

Dash and Kumar (2017) observed that education, innovativeness and achievement motivation of rural youth had positive and significant association with their usage of mass media sources in agriculture.

Devi *et al.* (2017) reported that age, educational level, gender, annual income, achievement motivation and social participation of rural youth had positive and significant relationship with the extent and utilization of ICTs.

Kumar and Philip (2019c) delineated that farming experience (62.50%) was the most positively contributing factor towards skill gain among the rural youth followed by employability and compatible nature of new skills.

Rahman *et al.* (2016) indicated that age, education, farm size, annual income, extension contact, awareness and access to ICT facilities and training received on ICTs were significantly related to the knowledge level of the respondents in farming.

2.5.4 Technical skills

Jayapuria (2015) observed that education, farming experience, annual income, social participation, extension contact, economic motivation, scientific orientation had a significant influence on the participation of rural youth in agricultural activities.

Shivaji (2019) noted that annual income, land holding, mass media exposure and information source had a significant influence on the participation of youth in farming.

Dayat *et al.* (2020) found that age, cosmopolitaness, capacity and interest of rural youth in West Java of Indonesia would greatly influence their participation in farming activities whereas education and training had no significant influence.

2.6 Strategies to bridge the skill gap among rural youth

Ali (2008) recommended that capacity building would be an effective long-term strategy for integrated crop management in Punjab and Pakistan. The production of quality seeds at farm level, proper training in the selection of pest and disease resistant variety, soil health management practices, development of proper market information system and information sharing among small farmers would help in improving their skill level in cotton cultivation.

Yusuf *et al.* (2014) suggested that the development of a practical training curriculum and training manual for capacity building of the indigenous poultry farmers to bridge the skill gap in Nkonkobe municipality of Eastern Cope province.

Ighoro *et al.* (2017) recommended intensive training and re-training of farmers with advances in modern farming techniques especially in cassava production would be an effective strategy to bridge the existing gap.

Ahmad *et al.* (2018) suggested that the extension department in Pakistan should make arrangements for capacity building of farmers, create awareness about causes of diseases, improving the marketing system and literacy rate would ultimately bridge over the existing skill gap among the respondents for enhancing the cotton production.

Niranjan and Krishnakumare (2020) recommended field visits to provide practical exposure, hands-on training, internships, workshops *etc.* would help the respondents in improving their entrepreneurial qualities.

Rohit *et al.* (2020) suggested the use of ICT aided tools like expert systems, web-based training portals and competency-based programs by the respondents can develop the skills demanded for a particular work while introduction of new technology in their work place and conducting an effective in-service training programme would effectively bridge their prevailing skill gap.

Research methodology

3. RESEARCH METHODOLOGY

Research methodology is a way to systematically solve the research problem (Kothari, and Gaurav, 2017). This chapter briefly describes the methods and procedures adopted in the current study to achieve the set objectives. The various aspects comprised in this chapter to conduct the study are systematically presented under the following sub-headings as follows:

3.1 Research design

3.2 Locale of the study

3.3 Sampling procedure

3.4 Operationalization of variables and their empirical measurement

3.5 Data collection procedure

3.6 Statistical tools employed

3.1 Research design

Ex-post facto research design was considered appropriate for the present study. *Ex-post facto* research is a systematic empirical enquiry in which the researcher does not have direct control over the independent variables because their manifestations have already occurred or because they are inherently not manipulated (Kerlinger, 1973).

3.2 Locale of the study

The present study was carried out in Palakkad district of Kerala. The district was purposively selected since it has the highest area (76,942 hectares) under rice which constitutes 38.85 per cent of the total area under rice in the state. The district also occupied the first position in rice production with 215285 tonnes (GOK, 2020).

3.2.1 Description of the study area

Palakkad is the largest district in the Kerala state located between 10°20' to 11°14' N latitude and 76°02' to 76°54' E longitude. The topographic division of the district

includes low land and high land. The district has tropical climate and receives an average rainfall of 2362 mm annually. The unique characteristic of this region is Palakkad gap which has a great influence on agro-climatic conditions of the district. Laterite soil, virgin forest soil, black cotton soil and alluvial soil are the major soil types found in the district.

Table 3.1 Land utilization pattern of Palakkad district (2018-19)

Particulars	Area (Hectares)
Forest area	136257
Land put to non-agricultural use	48460.39
Barren and uncultivable land	1498
Land under miscellaneous tree crops	531.91
Cultivable waste	19199.89
Fallow other than current fallow	10918.3
Current fallow	8838.38
Still water	15337
Social forestry	403.79
Net area sown	206139.42
Area sown more than once	66055.49
Total cropped area	272194.91
Total geographical area	447584

Source: Agricultural Statistics 2018-19, Department of Economics and Statistics (GOK, 2020)

3.2.2 Crops cultivated

Palakkad is known as ‘Granary of Kerala’. The major cultivated crops in the district include paddy, coconut, banana, mango, pepper, plantain, jack fruit, coffee, rubber, tapioca, cotton etc. Mundakan and Virippu crops were prominent in the district. Majority of the rural population in the district are engaged in agriculture and allied sectors. The major irrigation projects include Malampuzha, Chittorpuzha, Kuriar kutty, Karapara, Kanjirapuzha and Attapady valley irrigation projects.



Fig. 1 Map showing location of Kerala state in India

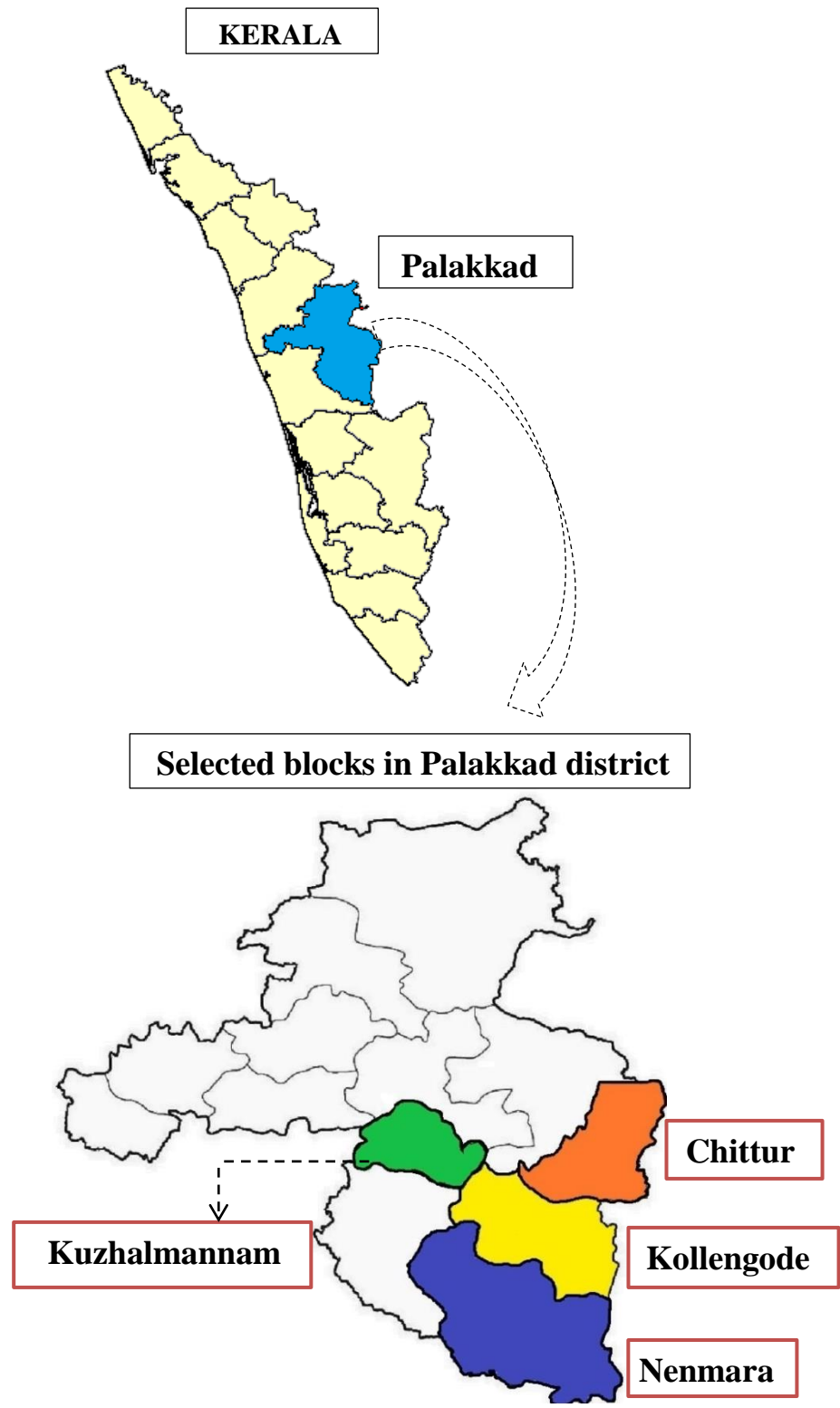


Fig. 2 Map showing location of the study area

Table 3.2 District wise area and production of rice in Kerala (2018-19)

Sl. No.	District	Area (Hectares)	Production (Tonnes)
1	Thiruvananthapuram	1968.91	5167
2	Kollam	1974.59	4514
3	Pathanamthitta	3168.77	11676
4	Alappuzha	38623.08	128560
5	Kottayam	22172.05	61917
6	Idukki	676.13	1562
7	Ernakulam	5001.60	11191
8	Thrissur	21981.58	69454
9	Palakkad	76942.68	215285
10	Malappuram	8205.69	26984
11	Kozhikode	2174.80	3439
12	Wayanad	7761.51	22340
13	Kannur	5140.40	11143
14	Kasargode	2234.42	5024
	State total	198026.21	578256

Source: Agricultural Statistics 2018-19, Department of Economics and Statistics (GOK, 2020)

3.3 Sampling procedure

3.3.1 Selection of blocks

Palakkad district comprises thirteen block panchayats. Considering the area and production of rice in the district, four blocks namely Kuzhalmannam, Kollengode, Nenmara and Chittur were purposively selected for the study. Alathur block was selected for pilot study.

Table 3.3 Block-wise area under rice in Palakkad district (2018-19)

Sl. No.	Block	Area in Hectares			
		Autumn	Winter	Summer	Total
1	Alathur	5617.8	5830.87	0	11448.67
2	Attapady	0	1.05	0	1.05
3	Chittur	4586	4034.89	1394.31	10015.2
4	Kollengode	5522.15	4592.36	614.15	10728.66
5	Kuzhalmannam	7566.64	7443.42	0	15010.06
6	Malampuzha	2415.98	2215.89	4.43	4636.3
7	Manarkkad	4.05	165.38	2.45	171.88
8	Nenmara	5440.67	5050.66	268.91	10760.24
9	Ottapalam	773.44	2016.99	0.2	2790.63
10	Palakkad	1520.4	1946.8	60.76	3527.96
11	Pattambi	367.82	1504.38	17.89	1890.09
12	Sreekrishnapuram	143.06	796.27	4.47	943.8
13	Thrithala	235.48	2292	157.63	2685.11
	Municipalities	909.94	1406.41	16.68	2333.03
	District total	35103.43	39297.37	2541.88	76942.68

Source: Agricultural Statistics 2018-19, Department of Economics and Statistics (GOK, 2020)

Table 3.4 Block-wise production of rice in Palakkad district (2018-19)

Sl. No.	Block	Production in Tonnes			
		Autumn	Winter	Summer	Total
1	Alathur	11637.391	18081.761	0	29719.152
2	Attapady	0	2.894	0	2.894
3	Chittur	11141.053	302.332	4886.273	29048.658
4	Kollengode	14967.754	15441.93	1616.264	32025.948
5	Kuzhalmannam	17643.082	25767.133	0	43410.215

6	Malampuzha	5607.927	6637.173	9.977	12255.077
7	Manarkkad	9.263	486.798	1.835	497.896
8	Nenmara	13940.629	16359.138	969.41	31269.177
9	Ottapalam	1227.996	5244.256	0	6472.252
10	Palakkad	3093.462	5464.374	205.824	8763.66
11	Pattambi	504.19	4874.172	52.245	5430.607
12	Sreekrishnapuram	240.072	1979.695	7.671	2227.438
13	Thrithala	354.159	7444.317	583.715	8382.191
	Municipalities	1321.116	4397.458	61.065	5779.639
	District total	81688.094	125202.431	8394.279	215284.804

Source: Agricultural Statistics 2018-19, Department of Economics and Statistics (GOK, 2020)

3.3.2 Selection of panchayats

From the selected blocks *viz.* Kuzhalmannam, Kollengode, Nenmara and Chittur, three panchayats from each of the blocks were randomly selected as follows:

Sl. No.	Selected blocks	Selected panchayats
1	Kuzhalmannam	Kottayi Kannadi Mathur
2	Kollengode	Muthalamada Vadavannur Pattanchery
3	Nenmara	Ayilur Vandazhi Plassana
4	Chittur	Nallepilly Thathamangalam Kozhijampara

3.3.3 Selection of the respondents

Simple random sampling technique was used for the selection of respondents in the current study. A list of rural youth involved in rice farming from the selected panchayats were collected from the respective office of Assistant Director of Agriculture through Krishi Bhavans and Padasekarams. Ten rural youth involved in rice farming from each of the panchayats were randomly selected. Therefore, thirty rural youth involved in rice farming were selected from each of the blocks that constituted a total sample size of 120 respondents for the study.

3.4 Selection, operationalization of variables and their empirical measurement

3.4.1 Selection of independent and dependent variables

Based on review of relevant literature and consultation with the experts, a list of variables was prepared (Appendix I). To know the relevancy of each variable, they were subjected to judges rating. The identified variables were sent to 60 judges and their responses were obtained on a five point continuum ranging from most relevant to least relevant. The judges were extension specialists from Kerala Agricultural University, Tamil Nadu Agricultural University, Kerala Veterinary and Animal Sciences University and other ICAR institutes. The relevancy index for each item was calculated with the responses of 30 judges. The scores were as follows:

Sl. No.	Response	Score
1	Most relevant	5
2	More relevant	4
3	Relevant	3
4	Less relevant	2
5	Least relevant	1

The relevancy index was worked out using the formula:

$$\text{Relevancy Index} = \frac{\text{Total score obtained by the variable}}{\text{Maximum possible score that variable could secure}} \times 100$$

The variables with a relevancy index of more than 85 were drawn for constructing the questionnaire. The list of selected variables has been enclosed in Appendix II.

3.4.2 Measurement of independent variables

Sl. No.	Variables	Empirical measurement
1	Age	CSO (2017)
2	Gender	Male/ Female
3	Educational status	Scale developed by Trivedi (1963) followed by Naik (2017)
4	Land holding	Classification based on FIB (2021)
5	Farming experience	Scale developed by Sharath (2018)
6	Farm power possession	Procedure followed by Sahu (2019) *
7	Occupation	Scale developed by Vihari (2018)*
8	Annual income	Procedure followed by Preethi (2015)*
9	Social participation	Scale followed by Sahu (2019)
10	Training received	Scoring procedure followed by Adhina (2020)
11	Possession of ICT tools	Procedure developed by Naik (2014)*
12	Extension agency contact	Scale developed by Chouhan (2018)*
13	Economic motivation	Scale followed by Anamica (2013)
14	Scientific orientation	Scale developed by Supe (1969) followed by Shivaji (2019)
15	Knowledge level of rural youth in rice farming	Test developed by Seema (1986) and Subash (2009) followed by Hareesh (2018)*
16	Information seeking behavior	Scale developed by Verma (2016)*
17	Achievement motivation	Scale developed by Alexander (1996)*
18	Innovativeness	Scale developed by Archana (2013)*
19	Market orientation	Scale developed by Samantha (1977)*

* Suitable modifications were made according to the present study

3.4.2.1 Age

Age refers to the chronological age of the respondent. It was measured in terms of number of calendar years completed by the rural youth at the time of investigation. The respondents were classified into three categories based on the report by CSO (2017).

Sl. No.	Age (years)	Score
1	18 - 23	1
2	24 - 29	2
3	30 - 35	3

3.4.2.2 Gender

This variable is operationalised as the sex category of the rural youth i.e., male and female. A score of 1 and 2 were assigned for male and female respectively.

3.4.2.3 Educational status

Educational status was conceptualized as number of years of formal education acquired by rural youth at the time of survey. It was measured using the scale developed by Trivedi (1963) followed by Naik (2017) with the following scoring pattern as follows:

Sl. No.	Educational status	Score
1	Primary school (1 st to 5 th)	1
2	High school (6 th to 10 th)	2
3	Higher secondary (11 th and 12 th)	3
4	Diploma	4
5	Graduation	5
6	Post-graduation and above	6

3.4.2.4 Land holding

The total number of acres of land owned and leased in for cultivation by rural youth at the time of data collection was considered as the land holding of the rural youth. The standard classification made by Farm Information Bureau (GOK, 2021) was followed for the current study.

Sl. No.	Category	Land holding (Hectares)
1	Marginal	< 1
2	Small	1 – 1.99
3	Semi-medium	2 – 3.99
4	Medium	4 – 9.99
5	Large	10 and above

3.4.2.5 Farming experience

Farming experience was considered as the number of years of experience in rice farming by the rural youth at the time of conducting the study. The scale developed by Sharath (2018) was adopted for the study.

Sl. No.	Category	Farming experience (years)
1	Low	< 5
2	Moderate	5 - 10
3	High	> 10

3.4.2.6 Farm power possession

Farm power possession refers to the number of farm implements possessed by rural youth for performing various agricultural operations. The procedure followed by Sahu (2019) with necessary modifications was adopted for the present study.

The following items were included to measure the possession of farm implements by the rural youth.

1. Sprayer
2. Tractor
3. Power tiller
4. Cono-weeder
5. Others

3.4.2.7 Occupational status

Occupational status is operationally defined as the primary and subsidiary occupation of rural youth from which they obtain a major portion of income for his/ her livelihood. The method developed by Vihari (2018) with necessary modifications was used for this study.

Sl. No.	Occupation
1	Farming
2	Farming + Allied activities
3	Farming + Laborer
4	Farming + Self-employed
5	Farming + Service in private sector
6	Farming + Service in government sector
7	Farming + Business
8	Others

3.4.2.8 Annual income

Annual income was considered as total income earned by rural youth from primary and subsidiary occupational components in a year and is expressed in monetary terms. The procedure followed by Preethi (2015) with slight modifications was used.

Sl. No.	Category	Range of income (Rs./Annum)
1	Low	Less than 1 lakh
2	Medium	1 - 3 lakhs
3	High	More than 3 lakhs

3.4.2.9 Social participation

Social participation was operationally considered as the degree of involvement of rural youth either as a member or as an office bearer in various social organisations such as gram panchayat, youth club, padasekaram samities and co-operative society and their frequency of participation in various organisational activities. The variable was measured by utilizing the scale followed by Sahu (2019) with suitable modifications. The scores were allotted as given below:

Sl. No.	Category	Score
1	Membership position	
	a. Office bearer in an organization	2
	b. Member of an organization	1
	c. Non-member	0
2	Extent of participation	
	a. Regular	2
	b. Occasional	1
	c. Never	0

Further, social participation levels were categorized based on mean and standard deviation.

3.4.2.10 Training received

This was operationalised as the number of training programmes attended by the rural youth related to farming and allied activities. The scoring procedure followed by Adhina (2020) was used for the current study. The scores were assigned as given below:

Sl. No.	Training received	Score
1	Received training	1
2	Not received training	0

3.4.2.11 Possession of ICT tools

It was operationalized as the availability of gadgets such as radio, mobile phone, smartphone, computer, laptop, tablet, modem etc. with the rural youth at the time of interview. Weightage of one and zero were given in case of possession and non-possession of each item respectively. The scoring procedure followed by Naik (2014) with due modifications was adopted for this study.

3.4.2.12 Extension agency contact

Extension agency contact refers to the extent of contact made by the rural youth with different extension workers such as Agricultural Officers, Scientists and private consultancies for seeking information about rice farming. This variable was quantified by using the scale developed by Chouhan (2018) with slight modifications. The respondents were asked to indicate their frequency of participation in terms of regular, occasional and never with scores of 2, 1 and 0 respectively. Further, extension agency contact levels were categorized based on mean and standard deviation.

Sl. No.	Frequency of contact	Score
1	Regular	2
2	Occasional	1
3	Never	0

3.4.2.13 Economic motivation

Economic motivation is defined as the orientation of rural youth towards achievement of maximum economic ends such as profit maximization in rice farming. The variable was quantified by using the scale followed by Anamica (2013).

Responses	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Positive statements	5	4	3	2	1
Negative statements	1	2	3	4	5

The scale consists of five statements out of which last statement alone is negative. The economic motivation score for each rural youth was obtained by summation of responses of all the five statements. Based on mean and standard deviation, rural youth were classified into three categories *viz.* low, medium and high.

3.4.2.14 Scientific orientation

Scientific orientation was conceptualized as degree to which rural youth is oriented towards use of scientific management practices in rice farming. Scale developed by Supe (1969) followed by Shivaji (2019) with due modifications was used for measuring the scientific orientation of the rural youth. The statements were five in number out of which second one alone is a negative statement.

Responses	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Positive statements	5	4	3	2	1
Negative statements	1	2	3	4	5

The response scores of all the statements were added to obtain the scientific orientation score and the rural youth were categorized into low, medium and high based on mean and standard deviation.

3.4.2.15 Knowledge level of rural youth in rice farming

Knowledge is operationalised as the extent of understanding of rural youth at the time of interview as evident from his/her response to the set of questions prepared on different aspects of rice farming.

A teacher made knowledge test developed by Seema (1986) and Subash (2009) followed by Hareesh (2018) was adopted for the present study. The scale consists of ten questions. A score of one was given for every correct response and the total knowledge score was arrived by summing up all the correct responses. Based on mean and standard deviation, rural youth were categorised into low, medium and high.

3.4.2.16 Information seeking behavior

Information seeking behavior was operationally defined as the exposure of rural youth to formal, informal, mass media and others sources such as Krishi Bhavans, family, friends, progressive farmers, radio, newspaper, magazine, television, exhibition, group meetings, seminar and farm tour to seek information in rice farming, their frequency of usage and the perceived credibility accorded to the source by the rural youth. The scale developed by Verma (2016) was followed in the study with slight modifications.

Sl. No.	Category	Score
1	Frequency of use	
	a. Regular	2
	b. Occasional	1
	c. Never	0
2	Perceived credibility	
	a. Low	1
	b. Medium	2
	c. High	3

The scores obtained by rural youth across each item were added to form the total score for information seeking behavior. The rural youth were categorized into three groups *viz.* low, medium and high based on mean and standard deviation.

3.4.2.17 Achievement motivation

It is operationally defined as the inner driving force that urges the rural youth towards attainment of excellence in rice farming. The scale developed by Alexander (1996) with slight modifications was adopted for the study. The scale consists of six statements in which four were positive and two were negative.

Responses	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Positive statements	5	4	3	2	1
Negative statements	1	2	3	4	5

The total score was obtained by summing the individual scores of all the statements and the respondents were classified into three categories i.e., low, medium and high on the basis of mean and standard deviation.

3.4.2.18 Innovativeness

Innovativeness is operationally defined as the degree to which a rural youth is relatively earlier in adopting a new idea or a practice in rice farming than others members in his social system. The innovativeness among the rural youth was measured by using the scale developed by Archana (2013) with due alterations. The scale consists of six statements in which three were negative.

Responses	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Positive statements	5	4	3	2	1
Negative statements	1	2	3	4	5

The total score was obtained by adding the individual scores obtained for each statement and the respondents were categorized into low, medium and high based on mean and standard deviation.

3.4.2.19 Market orientation

The market orientation among rural youth was measured by using the scale developed by Samantha (1977). The scale comprised of six statements out of which 3rd, 4th and 6th were negative statements.

Responses	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Positive statements	5	4	3	2	1
Negative statements	1	2	3	4	5

The total score was computed by summing up the scores obtained for each individual item. The respondents were categorized into low, medium and high on the basis of mean and standard deviation.

3.4.3 Measurement of dependent variables

3.4.3.1 Occupational preference of rural youth

Occupational preference refers to the choice made by the rural youth to select a particular vocation as their occupation. The scale developed by Bharat (2020) with slight modification was adopted for this study. A list of 17 different possible occupations was prepared for measuring the occupational preference of rural youth which includes crop production, dairy unit, poultry farming, fisheries, duckery, apiculture, sericulture, mushroom enterprise, vermiculture, government service, private service, business, banking sector, sales and marketing service, plant nursery, value-addition enterprise and small scale industry. The rural youth were asked to indicate their preference on a five point continuum ranging from most preferred, more preferred, preferred, less preferred to not preferred with scores assigned as four, three, two, one and zero respectively.

The weighted mean score was calculated by using the formula:

$$\text{Weighted mean} = \frac{(\text{Most preferred} \times 4) + (\text{More preferred} \times 3) + (\text{Preferred} \times 2) + (\text{Less preferred} \times 1) + (\text{Not preferred} \times 0)}{\text{Total number of respondents}}$$

Thus, weighted mean score was calculated for each of the occupation and the occupational preferences of rural youth were ranked on the basis of obtained mean rank.

3.4.3.2 Skill gap among rural youth in rice farming

Sl. No.	Variables	Empirical measurement
1	General skills	
1.1	Positive attitude	Developed by Tanwar (2018)*
1.2	Self-motivation	Followed by Anantarao (2018) *
1.3	Self-confidence	Developed by Heatherton and Polivy (1991) followed by Bhongle (2018)*
1.4	Learning skills	Followed by Das (2019)*
2	Managerial skills	
2.1	Problem solving skills	Followed by Mohammadi (2020)*
2.2	Decision making skills	Developed by Supe (1969) followed by Nagendra (2018)*
2.3	Entrepreneurial skills	Developed by Sridevi (2013)*
2.4	Marketing skills	Followed by Kumar (2017)*
2.5	Time management skills	Developed by Britton and Tesser (1991)*
2.6	Risk taking skills	Followed by Vishwanatha (2013)*
3	Communication skills	
3.1	Information management skills	Developed by Naresh (2016) followed by Prasad (2019)*
3.2	Listening skills	Followed by Thakur (2014) and Ajit (2018)*
3.3	Interpersonal skills	Followed by Nagendra (2018)*
3.4	ICT skills	Developed for the study
4	Technical skills	
4.1	Crop production skills	Developed for the study

* Suitable modifications were made according to the present study

3.4.3.2.1 General skills

The general skills include positive attitude, self-motivation, self-confidence and learning skills. This dimension was measured on a five point continuum ranging from strongly agree, agree, undecided, disagree to strongly disagree by assigning weightage of 5, 4, 3, 2 and 1 respectively for positive statements and reverse scoring is followed for negative statements.

3.4.3.2.1.1 Positive attitude: It was operationalized as the favorable disposition of rural youth towards acquiring skills in rice farming.

3.4.3.2.1.2 Self-motivation: It refers to the skills related to the internal urge of rural youth to accomplish their goals and objectives in rice farming.

3.4.3.2.1.3 Self-confidence: It refers to the belief or trust of rural youth in his/her own capabilities in achieving their pre-determined goals in rice farming.

3.4.3.2.1.4 Learning skills: It refers to the ability of rural youth to acquire and share information and technologies in rice farming.

3.4.3.2.2 Managerial skills

The responses were recorded on a five point continuum viz. strongly agree, agree, undecided, disagree and strongly disagree appraised with scores of 5, 4, 3, 2 and 1 respectively for positive statements and the order is reversed for negative statements.

3.4.3.2.2.1 Problem solving skills: It refers to the ability of rural youth to solve problems and concerns effectively and efficiently at the right time in rice farming.

3.4.3.2.2.2 Decision making skills: It was operationalized as the ability of rural youth to select the best alternative from the available options for achieving maximum economic profit on his farm.

3.4.3.2.2.3 Entrepreneurial skills: It refers to the ability of rural youth to exploit opportunities in agriculture and allied sectors and establish a business enterprise with necessary resources for rewarding outcome.

3.4.3.2.2.4 Marketing skills: It refers to the skills related to identifying the customers, their demands and making use of marketing strategies to earn profitable returns.

3.4.3.2.2.5 Time management skills: It is operationalized as planning and scheduling appropriate time to perform farm-related activities more efficiently.

3.4.3.2.2.6 Risk taking skills: It was operationalized as ability of rural youth to bear risk and uncertainty in adopting new ideas, practices or technologies in rice farming.

3.4.3.2.3 Communication skills

Each scale item had five response categories namely strongly agree, agree, undecided, disagree, strongly disagree assigned with scores of 5, 4, 3, 2 and 1 respectively except ICT skills which had two response categories where the rural youth were asked to state their agreement or disagreement to each of the statements and scores of one and zero were assigned for agree and disagree respectively. The responses of a rural youth were summed up to attain mean percent score for each variable and then mean was calculated.

3.4.3.2.3.1 Information management skills: It is operationalized as the capability of rural youth to identify the credible sources in order to collect relevant information in rice farming and make several interpretations for dissemination.

3.4.3.2.3.2 Listening skills: It was operationalized as ability of rural youth to receive, interpret and comprehend the information.

3.4.3.2.3.3 Interpersonal skills: It refers to the ability of rural youth to communicate or interact effectively with fellow farmers, extension agents *etc.*

3.4.3.2.3.4 ICTs skills: It refers to the ability of rural youth to access various Information and Communication Technology related tools and initiatives in rice farming.

3.4.3.2.4 Technical skills

Technical skills in rice farming include skills required for land preparation, operation of machineries, selection of varieties for the appropriate season, selection of seeds and sowing, nursery management, transplanting, time of sowing/ transplanting, judicious use of inputs, water management practices, integrated nutrient management, integrated pest and disease management, intercultural operations, harvesting techniques, post-harvest technology, value-addition in rice and crop rotation. The scale consists of sixteen cultivable practices and the responses of rural youth were evaluated on a three point continuum viz. fully skilled, partially skilled and not skilled with a weightage of 2, 1 and 0 respectively. The mean percent score was arrived for by summing up the scores for each practice and mean was calculated.

3.4.3.3 Measurement of skill gap

The skill gap in the present study was operationally defined as the difference between the current capabilities of the rural youth and the skills required by them to perform well in rice farming. The skill gap was measured using the formula given by Tanwar (2018) which is as follows:

$$\text{Mean Per cent Score} = \frac{\text{Total score for each skill}}{\text{Maximum score for each skill}} \times 100$$

Based on the above formula, mean per cent score for each of the skills in all the four components were calculated. Thereafter mean was calculated for each dimension viz. general skills, managerial skills, communication skills and technical skills. Then, the overall skill level of rural youth in rice farming was measured.

$$\text{Skill gap} = \text{Required skills} - \text{Existing skills}$$

Based on the above formula, the skill gap was worked out for all the respondents in the respective four blocks of Palakkad. Thereafter mean was calculated for each dimension and the overall skill gap was measured.

3.5 Data collection procedure

3.5.1 Instruments used for the study

In view of objectives of the study, interview schedule was prepared incorporating all the items on which information was required. The pilot study was conducted in a non-sampling area to evaluate the interview schedule. Based on the responses and experience gained during pre-testing of the interview schedule from the selected respondents, suitable modifications were made wherever necessary.

The interview schedule utilized for the study consists of three parts as given in Appendix III. The first section comprised of primary information i. e., respondent name, address and contact number. The second unit consists of socio-economic and psychological characteristics of the respondents. The third part would assess the skill gap among rural youth in rice farming.

3.5.2 Method of data collection

The primary data were collected using the pre-tested structured interview schedule to the selected rural youth in each block by direct survey. The secondary data were gathered from research articles, reports and publications from government sources, statistical documents, theses and dissertations of similar study.

3.6 Statistical tools employed

The data collected from the rural youth were assigned scores, tabulated and analyzed by means of appropriate statistical measures such as frequency, percentage, arithmetic mean, standard deviation *etc.*

3.6.1 Kendall's coefficient of concordance

Kendall's coefficient of concordance (W) was used to measure the level of agreement among rural youth from four blocks of Palakkad district in preferring their occupation.

3.6.2 Kruskal-Wallis one way analysis of variance by ranks

The H test was used to determine the significant difference of the skill gap prevailing among rural youth from the respective four blocks of Palakkad district.

3.6.3 Spearman's rank correlation coefficient

It was used to determine the relationship that exists between each of the profile characteristics with the skill level of rural youth in rice farming.

3.6.4 Binomial logistics regression

The logit model was used to assess the factors influencing rural youth in acquiring skills in rice farming. The model predicts the probability of i^{th} respondent to acquire skills in rice farming. The logistic co-efficient can be interpreted as change in odds ratio associated with a unit change in the profile characteristics of the youth.

3.6.5 Software used for statistical analysis

The data collected were coded and analysed using the SPSS version 22 available in the College of Horticulture, Vellanikkara.

Results and discussion

4. RESULTS AND DISCUSSION

Based on the objectives of the present study, the collected data were analysed by subjecting to appropriate statistical tools. The results of the study, interpretations, findings and discussion are presented under the following sub-heads:

4.1 Profile characteristics of rural youth

4.2 Occupational preferences of the rural youth

4.3 Existing skill level of rural youth in rice farming

4.4 Skill gap among rural youth in rice farming

4.5 Factors affecting rural youth in acquiring skills in rice farming

4.6 Strategies to bridge the skill gap among rural youth in rice farming

4.1 Profile characteristics of rural youth

4.1.1 Age

Table 4.1 Distribution of rural youth according to their age

Sl. No.	Age (years)	Frequency	Per cent
1	18-23	4	3.33
2	24-29	37	30.84
3	30-35	79	65.83
Total		120	100.00

It could be observed from Table 4.1 that nearly two-third (65.83%) of rural youth were in the age group of 30 to 35 years followed by less than one-third (30.84%) were between 24 to 29 years and the remaining (3.33%) were between 18 to 23 years.

It is clearly apparent that youth below 23 years of age were less involved in farming activities as they were pursuing their higher secondary and graduation. The findings were in line with results of Kumar *et al.* (2019) and Mubeena *et al.* (2020).

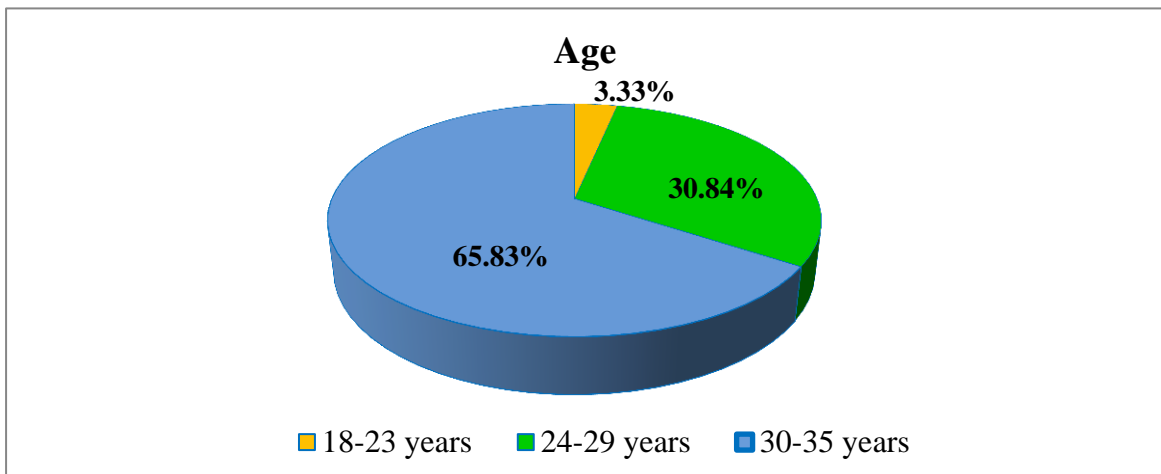


Fig. 3 Distribution of rural youth according to their age

4.1.2 Gender

Table 4.2 Distribution of rural youth according to their gender

Sl. No.	Category	Frequency	Per cent
1	Male	116	96.67
2	Female	4	3.33
Total		120	100.00

It could be viewed from the Table 4.2 that the majority (96.67%) of the rural youth in the study area were found to be male and the rest 3.33 per cent were female. Majority of the male respondents were more engaged in farming and the finding is in conformity with that of Kumar and Barman (2018), Martal (2018) and Chaudhary *et al.* (2019).

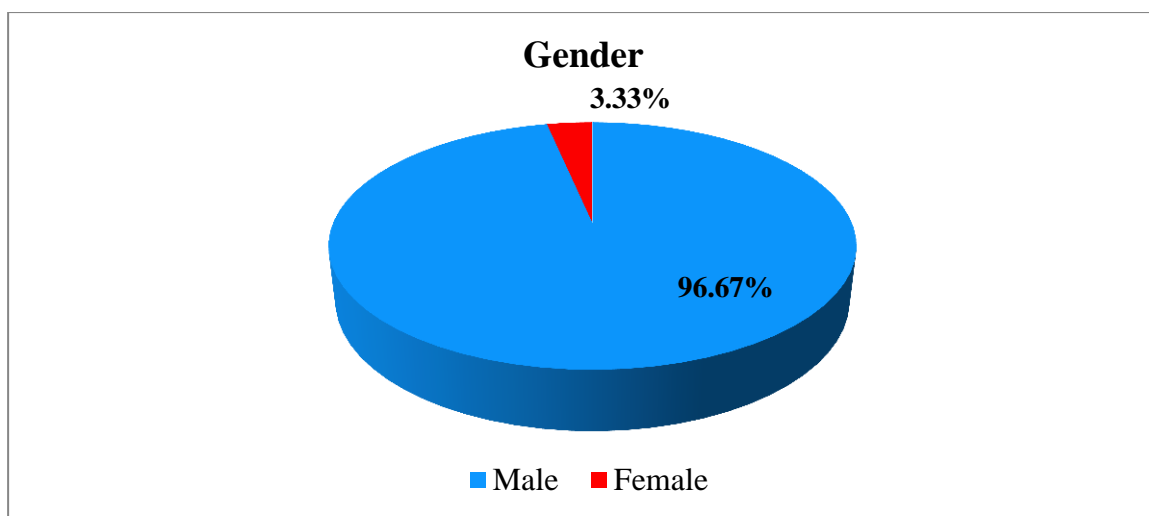


Fig. 4 Distribution of rural youth according to their gender

4.1.3 Educational status

Table 4.3 Distribution of rural youth according to their educational status

Sl. No.	Category	Frequency	Per cent
1	Primary school	1	0.83
2	High school	35	29.17
3	Higher secondary	13	10.83
4	Diploma	10	8.33
5	Graduate	47	39.16
6	Post-graduate	14	11.67
Total		120	100.00

The data presented in the Table 4.3 indicated that more than one-third (39.16%) of rural youth were graduates followed by more than one-fourth (29.17%) had completed high school education. Only a very few were post-graduates (11.67%), diploma holders (8.33%) and had completed higher secondary education (10.83%) while only one respondent (0.83%) had completed primary education.

There were no illiterates among the rural youth and the finding reflects the higher literacy rate in Kerala. The availability of educational institutions in their vicinity and importance of education for overall development has been realized by the youth in rural areas which had led to their higher educational status. The finding is on par with Devi *et al.* (2017).

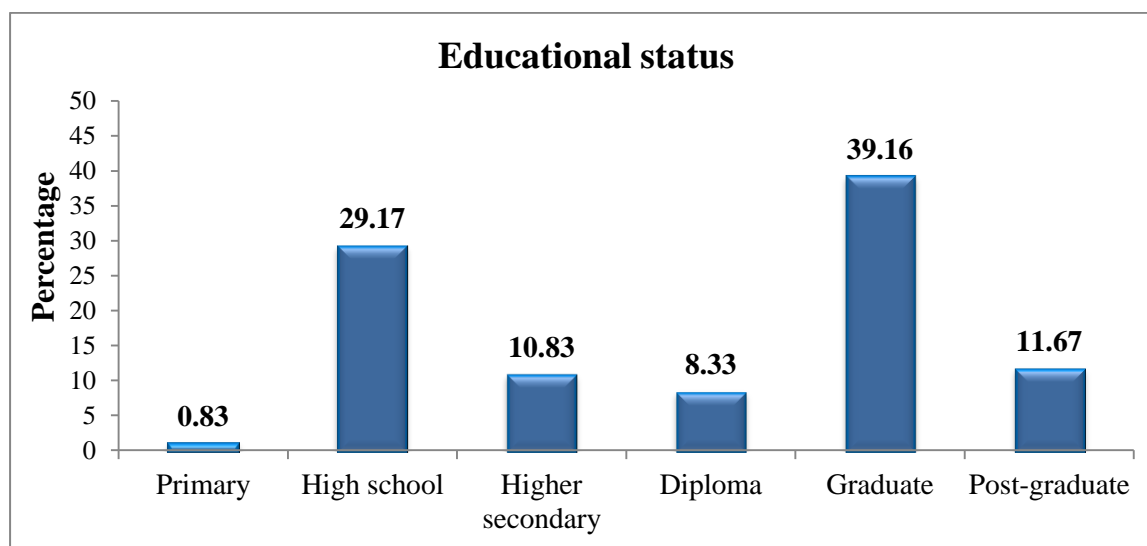


Fig. 5 Distribution of rural youth according to their educational status

4.1.4 Land holding

Table 4.4 Distribution of rural youth according to their land holding

Sl. No.	Category	Land area (hectares)	Frequency	Per cent
1	Marginal	Below 1	44	36.67
2	Small	1 – 1.99	31	25.83
3	Semi-medium	2 – 3.99	29	24.17
4	Medium	4 – 9.99	16	13.33
Total			120	100.00

It is clear from the Table 4.4 that one-third (36.67%) of rural youth were holding less than one hectare of land followed by more than one-fourth (25.83%) were holding one to two hectares of land while less than one-fourth (24.17%) were holding two to four hectares and only less than one-fifth (13.33%) were holding four to ten hectares of land.

More than half of the youth belonged to the category of marginal and small land holding while none of them had large size land holding. The land holdings in Kerala are very small because of high density of population as well as fragmentation of their ancestral property might be the probable reasons for marginal land holdings. The similar result was observed by Gedam *et al.* (2017) and Das (2019).

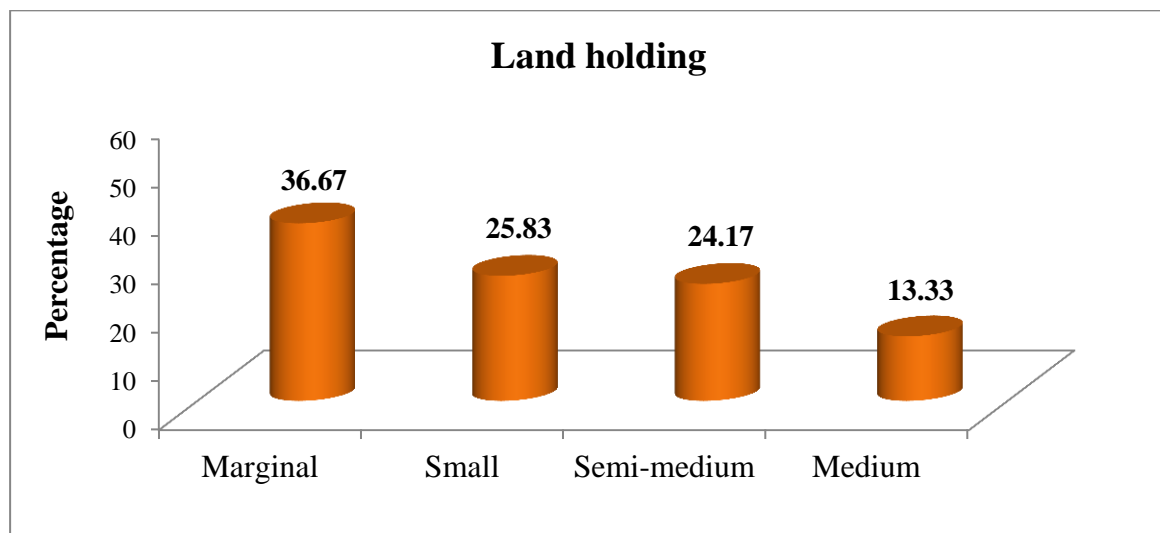


Fig. 6 Distribution of rural youth according to their land holding

4.1.5 Farming experience

Table 4.5 Distribution of rural youth according to their farming experience

Sl. No.	Category (years)	Frequency	Per cent
1	Less than 5	39	32.50
2	5 - 10	49	40.83
3	More than 10	32	26.67
Total		120	100.00

The result presented in the Table 4.5 indicated that more than one-third (40.83%) of the rural youth had an experience of five to ten years in farming followed by less than one-third (32.50%) had less than five years of experience whereas more than one-fourth (26.67%) had experience of more than ten years in farming.

Majority of the rural youth started farming as a subsidiary occupation only after the age of 24 years which led to their medium experience in farming. Nearly one-third had low experience as they were pursuing their higher studies. A similar finding was reported by Jayapuria (2015), Chouchan (2018) and Prajapati (2018).

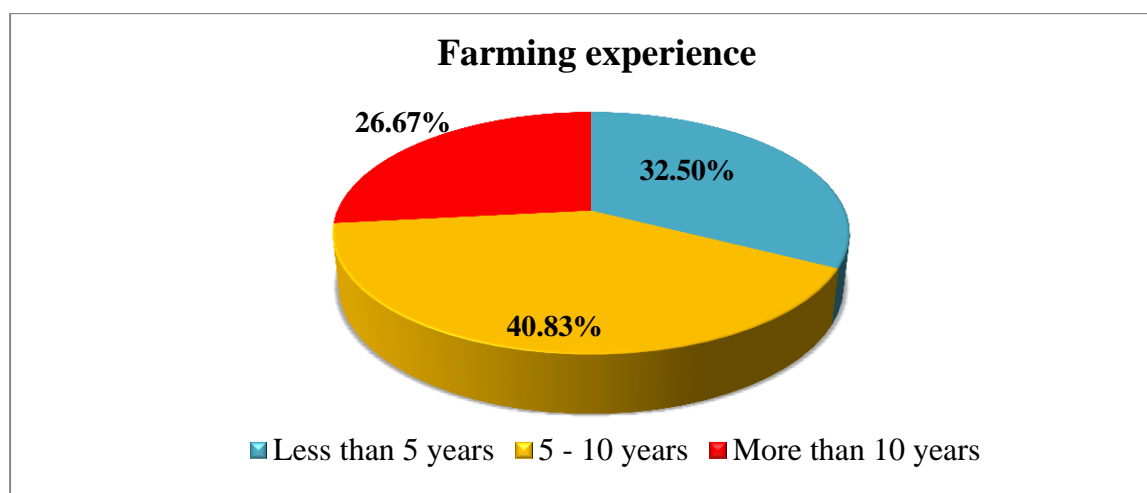


Fig. 7 Distribution of rural youth according to their farming experience

4.1.6 Farm power possession

Table 4.6 Distribution of rural youth according to their farm power possession

(n=120)

Sl. No.	Implements	Frequency	Per cent
1	Sprayer	87	72.50
2	Cono-weeder	3	2.50
3	Tractor	26	21.67
4	Power tiller	17	14.17
5	Rice transplantor	2	1.67

*Multiple responses

It could be observed from the Table 4.6 that nearly three-fourth (72.50%) of the rural youth possessed sprayer followed by around one-fifth (21.67%) owned a tractor and a few (14.17%) owned power tiller. A very less number of respondents possessed cono-weeder (2.50%) and rice transplanter (1.67%). The reason might be availability of hand/ power sprayer at affordable cost whereas tractor and power tiller were found to be very expensive. Hence, majority of them hired those machineries and some of them expressed their willingness to purchase it at a subsidised rate inorder to promote farm mechanization to deal with labor issues.

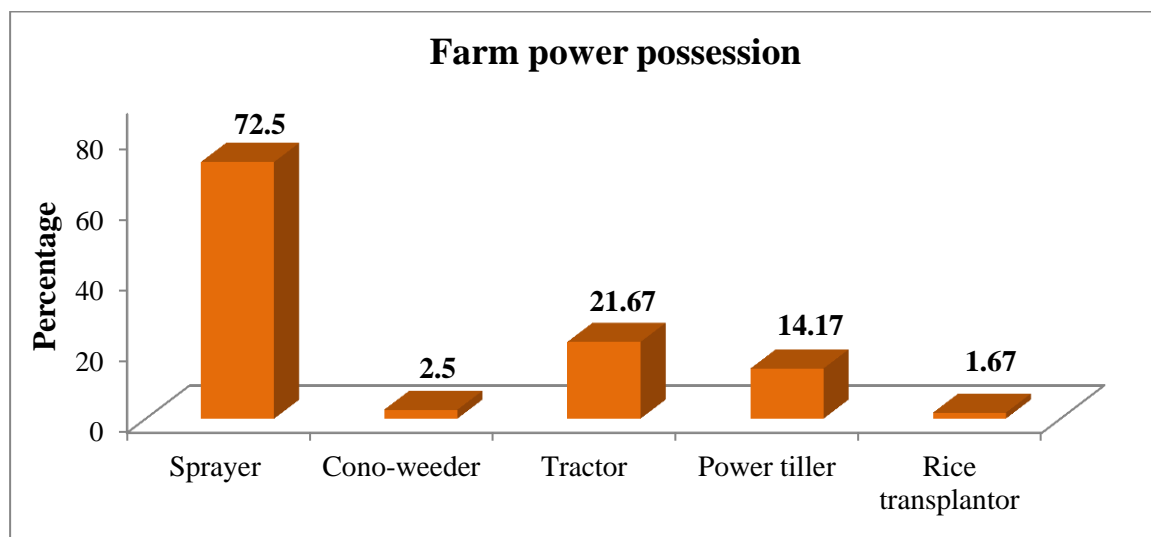


Fig. 8 Distribution of rural youth according to their farm power possession

4.1.7 Occupational status

From the Table 4.7, it could be comprehended that more than one-third (39.17%) of the rural youth were engaged in farming as well as employed in private sector followed by those involved in agriculture and allied activities (12.50%), agriculture + self-employment (10.83%), agriculture + business (10%), agriculture alone (17.50%) and agriculture + service in government sector (9.17%). Only one respondent (0.83%) was engaged as agricultural laborer.

Table 4.7 Distribution of rural youth according to their occupational status

Sl. No.	Category	Frequency	Per cent
1	Farming	21	17.50
2	Farming + Allied activities	1	0.83
3	Farming + Laborer	15	12.50
4	Farming + Self-employed	13	10.83
5	Farming + Service in private sector	47	39.17
6	Farming + Service in government sector	11	9.17
7	Farming + Business	12	10.00
Total		120	100.00

Majority of the youth in the study area were practicing agriculture as a secondary occupation. The reasons might be their educational status, to earn additional income and the urge to improve their socio-economic status. Around one-fifth alone practiced farming and allied activities as their primary occupation. The results are in contrary with Singh (2020).

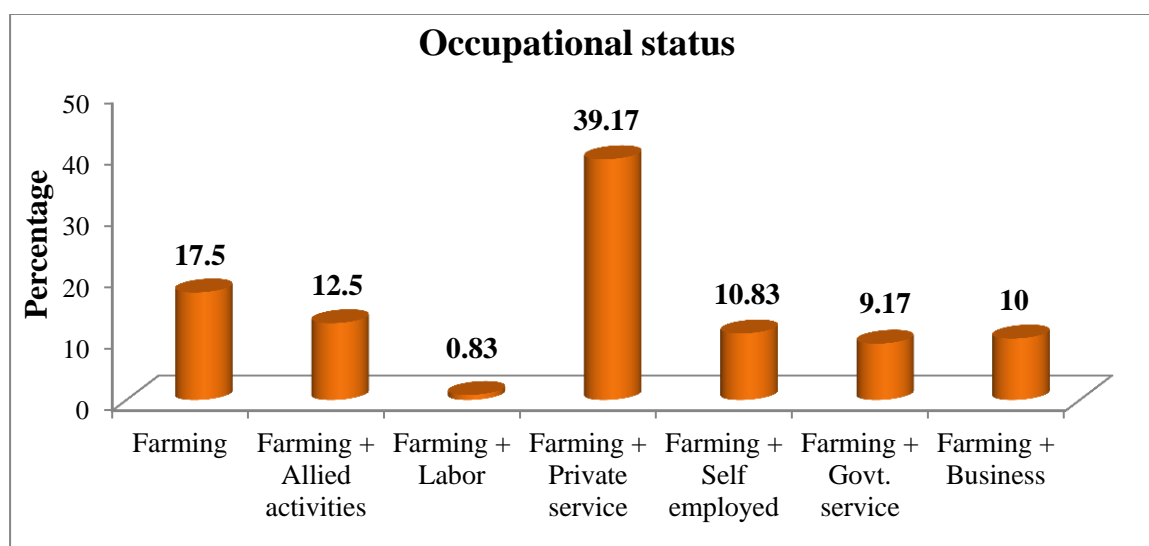


Fig. 9 Distribution of rural youth according to their occupational status

4.1.8 Annual income

Table 4.8 Distribution of rural youth according to their annual income

Sl. No.	Annual income (Rs.)	Frequency	Per cent
1	Less than 1 lakh	28	23.33
2	1 – 3 lakhs	71	59.17
3	More than 3 lakhs	21	17.50
Total		120	100.00

The data furnished in the Table 4.8 indicated that more than half (59.17%) of the rural youth had an income of Rs. 1 to 3 lakhs per annum followed by nearly one-fourth (23.33%) had income less than Rs. 1 lakh and the remaining (17.50%) had income of more than Rs. 3 lakhs per annum from farming and allied activities.

Majority of the youth had income between Rs. 1 to 3 lakhs per annum due to small size of land holding as well as less involvement in agricultural operations. The observations are in line with findings of Sonyabapu (2018) and Mubeena *et al.* (2020).

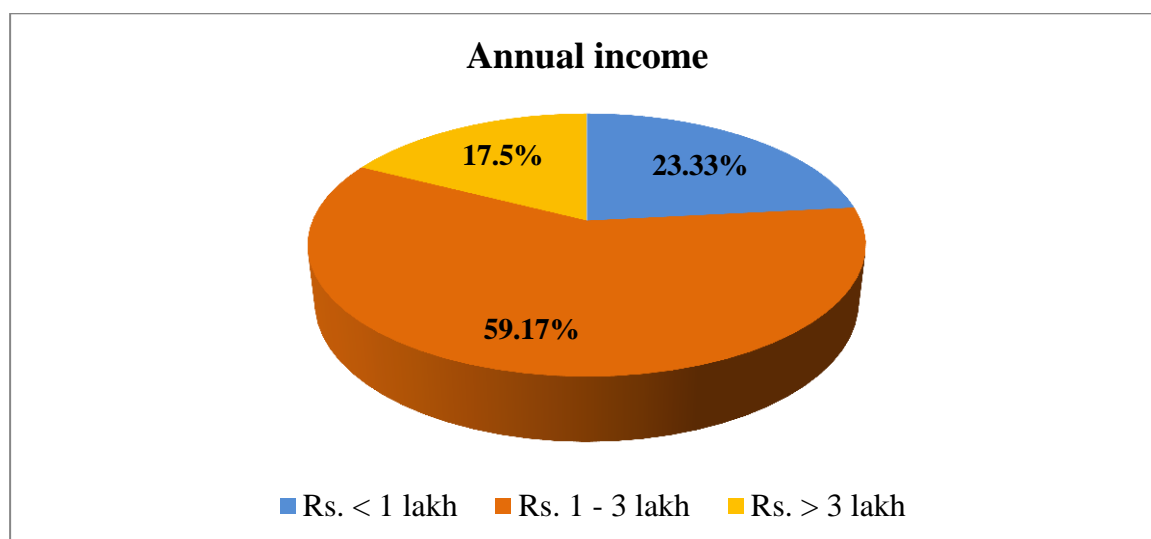


Fig. 10 Distribution of rural youth according to their annual income

4.1.9 Social participation

Table 4.9 Distribution of rural youth according to their social participation

(n=120)

Sl. No.	Category	Range of scores	Frequency	Per cent
1	Low	<1.50	44	36.67
2	Medium	1.51-5.05	59	49.17
3	High	>5.06	17	14.17
Mean: 3.28				S. D: 1.78

It could be inferred from the Table 4.9 that nearly half (49.17%) of the rural youth had medium social participation followed by one-third (36.67%) had low social participation and only a few (16.38%) had high social participation.

More than two-third of the youth were found to be members in Padasekharam committees and only a few were found to be office bearers in Padasekharam and only one respondent was found to be an office bearer in Farmer Producer Company (FPC). The occupational status, lack of interest and leisure time to participate in the organizational activities might have contributed for low to medium social participation. The findings are in accordance with the results reported by Prajapati (2018).

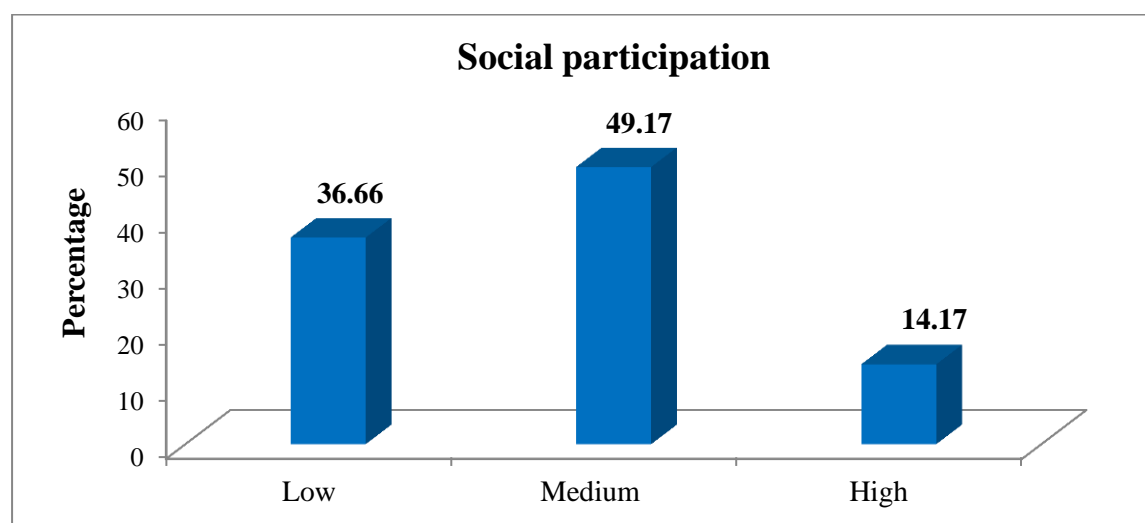


Fig. 11 Distribution of rural youth according to their social participation

4.1.10 Trainings received

It could be observed from the Table 4.10 that more than one-third (37.50%) of the rural youth had received training on farming and allied activities whereas more than half (62.50%) of the rural youth had not undergone any training. Nearly one-fourth of the rural youth had received more number of trainings.

Table 4.10 Distribution of rural youth according to the trainings received by them

Sl. No.	Category	Frequency	Per cent
1	Received training	45	37.50
2	Not received training	75	62.50
Total		120	100.00

More than one-third of the youth had attended the training programmes organized by respective Krishi Bhavans on paddy cultivation and farm mechanisation, Krishi Vigyan Kendra (KVK), Palakkad on weed management in rice, Regional Agricultural Technology Training Centre (RATTC), Malampuzha on Integrated Pest and disease control in rice.

Only a few had attended trainings on rubber tapping, crop cutting, precision farming and integrated farming. A very less number of respondents had attended training on allied sectors such as bee-keeping, fish farming, vermicomposting, livestock management and food processing organized by various institutions. Even though many extension agencies are offering training to the stakeholders, majority of the rural youth were found as non-participants in training programs.

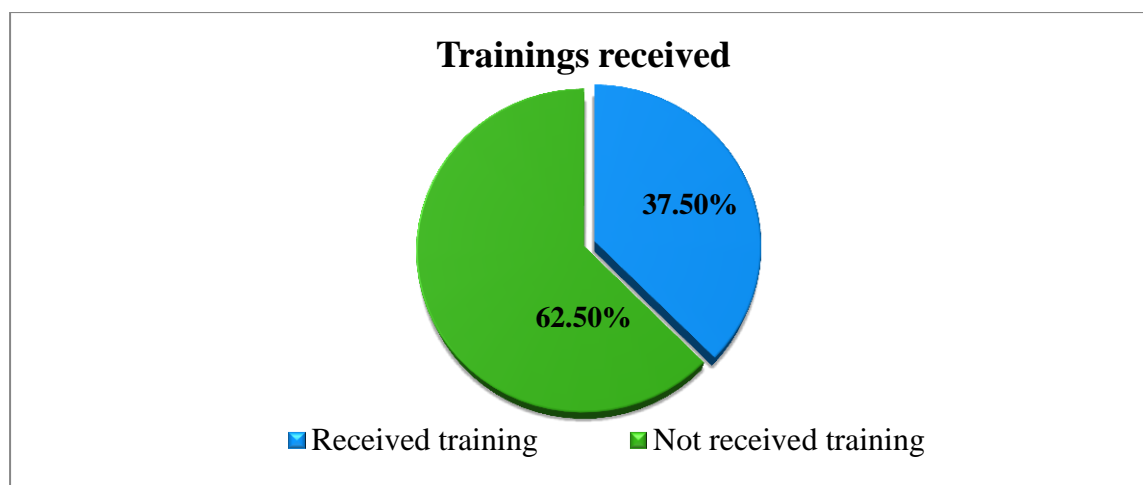


Fig. 12 Distribution of rural youth according to the trainings received by them

4.1.11 Possession of ICT tools:

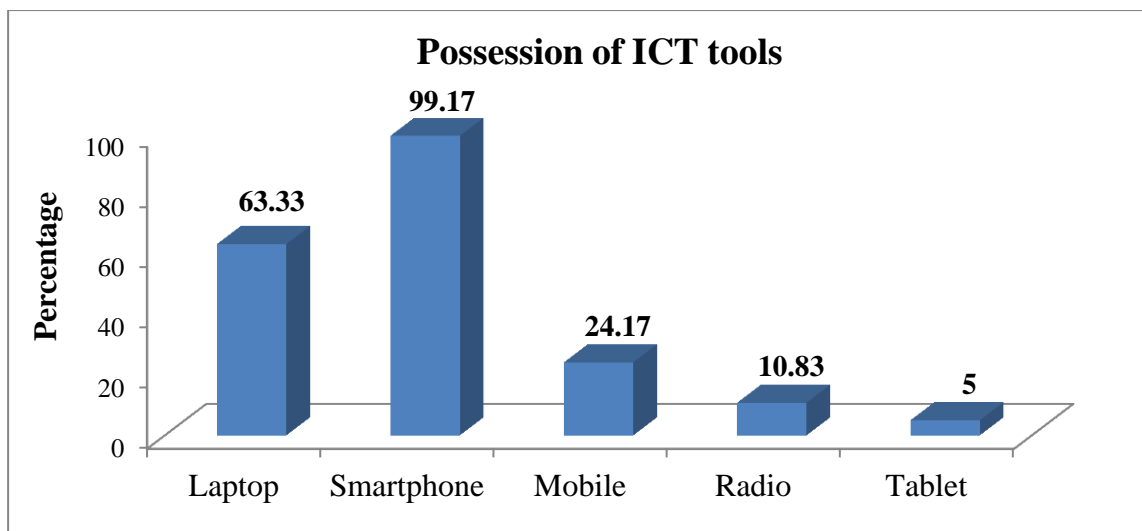
Table 4.11 Distribution of rural youth according to their possession of ICT tools

(n=120)

Sl. No.	Category	Frequency	Per cent
1	Computer/ Laptop	76	63.33
2	Smartphone	119	99.17
3	Mobile	29	24.17
4	Radio	13	10.83
5	Tablet	6	5.00

Table 4.11 depicts that almost all the respondents owned a smart phone followed by more than three-fifth (63.33%) owned either computer or laptop and nearly one-fourth (24.17%) owned a mobile. Only a few respondents had possessed radio and tablet.

Almost all the respondents in the study area had internet access and owned a smartphone as it is available in affordable price in the market. Majority of them were found to be regular users of at least one of the social media tools such as WhatsApp or Facebook.



*Multiple responses

Fig. 13 Distribution of rural youth according to their possession of ICT tools

4.1.12 Extension agency contact

4.1.12.1 Extension contact

Table 4.12 Distribution of rural youth according to their extension agency contact

(n=120)

Sl. No.	Category	Range of scores	Frequency	Per cent
1	Low	<1.35	26	21.67
2	Medium	1.36 – 3.80	70	58.33
3	High	>3.81	24	20.00
Mean : 2.58			S. D: 1.23	

It could be concluded from the Table 4.12 that more than half (58.33%) of the rural youth had medium level of extension agency contact while one-fifth had high level of extension agency contact and more than one-fifth (21.67%) had low level of extension agency contact.

4.1.12.2 Purpose

Sl. No.	Purpose of contact	Frequency	Per cent
1	To get technical guidance	86	71.67
2	To avail subsidy and agricultural implements	68	56.67
3	Assistance for purchasing inputs	61	50.83

*Multiple responses

Majority of the youth occasionally contacted Agricultural Officers, scientists, private consultancies and locally available input dealers for technical guidance followed by to avail subsidy and agricultural implements (56.67%) and input assistance (50.83%). The findings are in agreement with the results of Vihari (2018) and Bharat (2020).

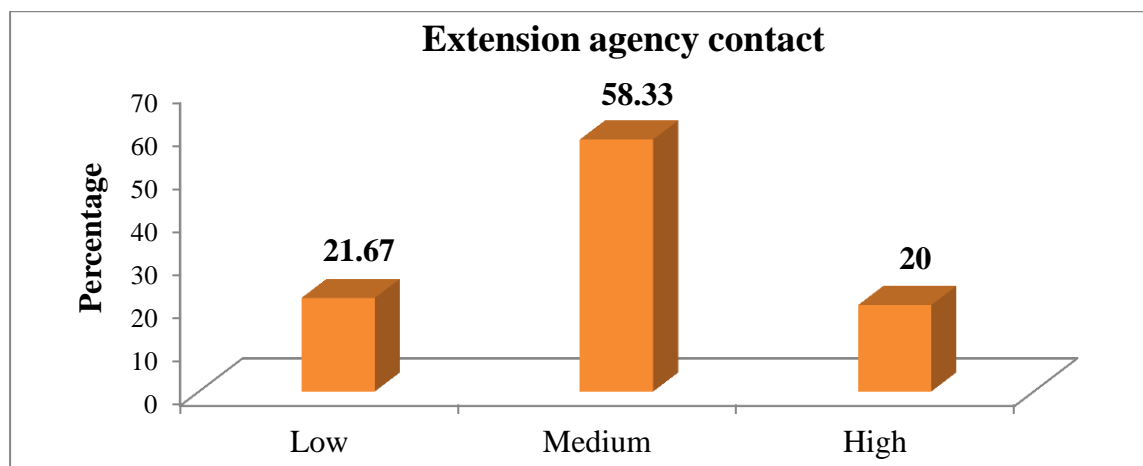


Fig. 14 Distribution of rural youth according to their extension agency contact

4.1.13 Economic motivation

Table 4.13 Distribution of rural youth according to their economic motivation

(n=120)

Sl. No.	Category	Range of scores	Frequency	Per cent
1	Low	<16.94	14	11.67
2	Medium	16.95-21.22	85	71.66
3	High	>21.23	19	16.67
Mean : 19.08			S. D : 2.14	

It is evident from the Table 4.13 that more than two-third (71.66%) of the rural youth had medium economic motivation followed by less than a fifth (16.67%) had high economic motivation and only a few (11.67%) had low economic motivation.

Majority of the youth with medium level of economic motivation should effectively utilize financial resources to make profit and increase their income. The findings are in accordance with the results of Sharath (2018), Mubeena *et al.* (2020) and Parmar (2020).

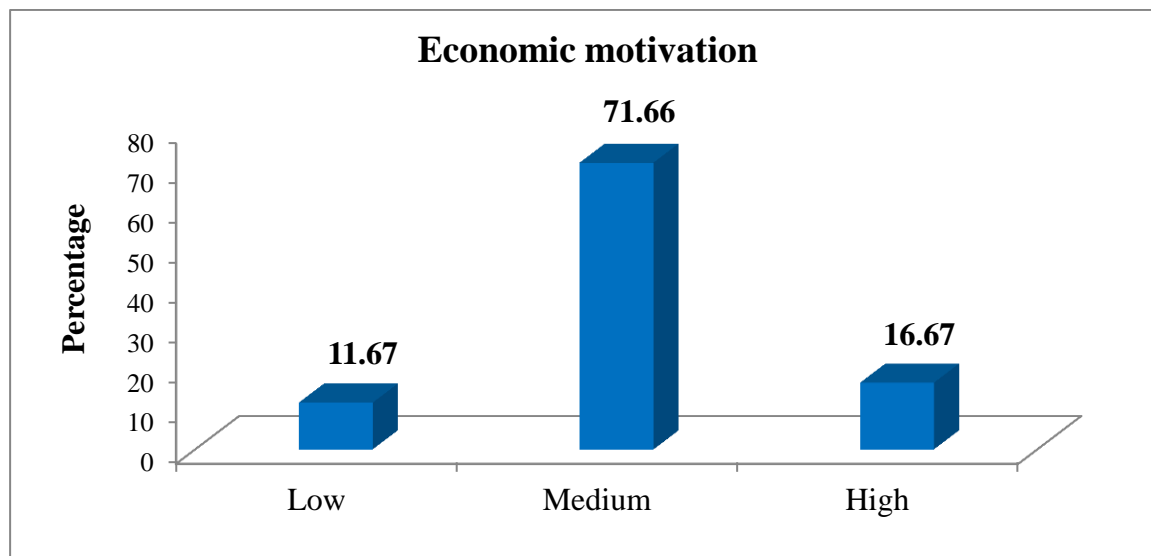


Fig. 15 Distribution of rural youth according to their economic motivation

4.1.14 Scientific orientation

Table 4.14 Distribution of rural youth according to their scientific orientation

(n=120)

Sl. No.	Category	Range of scores	Frequency	Per cent
1	Low	<15.17	27	22.50
2	Medium	15.18-20.38	74	61.67
3	High	>20.39	19	15.83
Mean : 17.78				S. D : 2.61

The data presented in the Table 4.14 revealed that more than three-fifth (61.67%) of the youth had medium scientific orientation followed by more than a fifth (22.50%) had low scientific orientation and the remaining (15.83%) had high orientation towards scientific farming practices.

Majority of the youth had medium orientation towards scientific practices in farming since they perceived that those practices involved high cost of cultivation and uncertain returns. The findings are in conformity with the results observed by Vihari (2018) and Shivaji (2019).

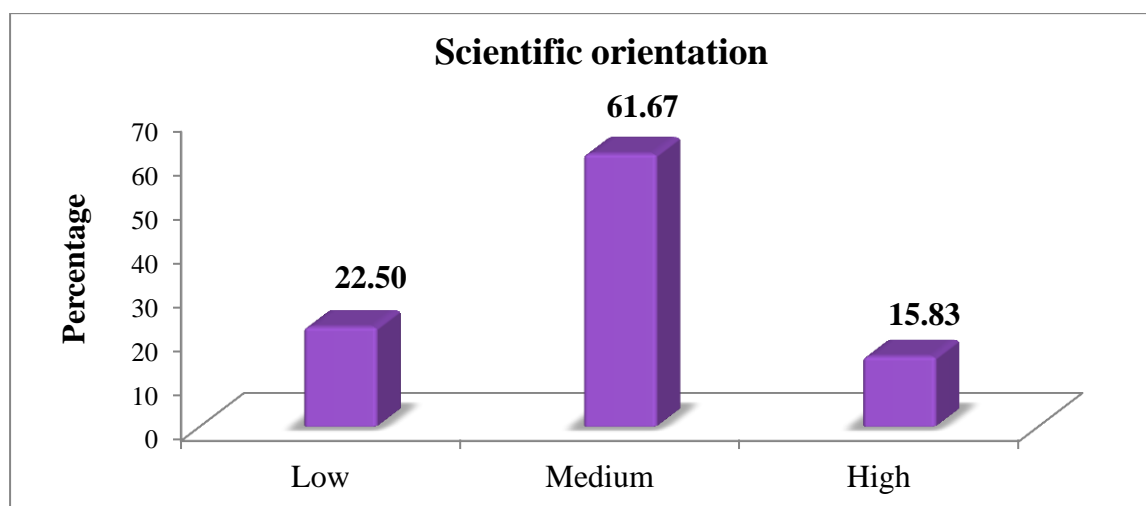


Fig. 16 Distribution of rural youth according to their scientific orientation

4.1.15 Knowledge level of rural youth in rice farming

Table 4.15 Distribution of rural youth according to their knowledge level in rice farming

(n=120)

Sl. No.	Category	Range of scores	Frequency	Per cent
1	Low	<4.34	24	20.00
2	Medium	4.35-8.25	82	68.33
3	High	>8.26	14	11.67
Mean : 6.3				S. D : 1.96

The data given in the Table 4.15 delineated that more than two-third (68.33%) of the rural youth had medium level of knowledge in rice farming followed by one-fifth (20%) possessed low level of knowledge and only a few (11.67%) had high level of knowledge in rice farming.

Majority of the youth possessed medium level of knowledge about use of High Yielding Varieties, recommended fertilizer dosage and seed rate in rice farming. The reasons might be their educational status, occasional contact with extension agencies, medium scientific orientation and a few years of experience in farming. The findings are in accordance with that of Borua and Brahma (2012).

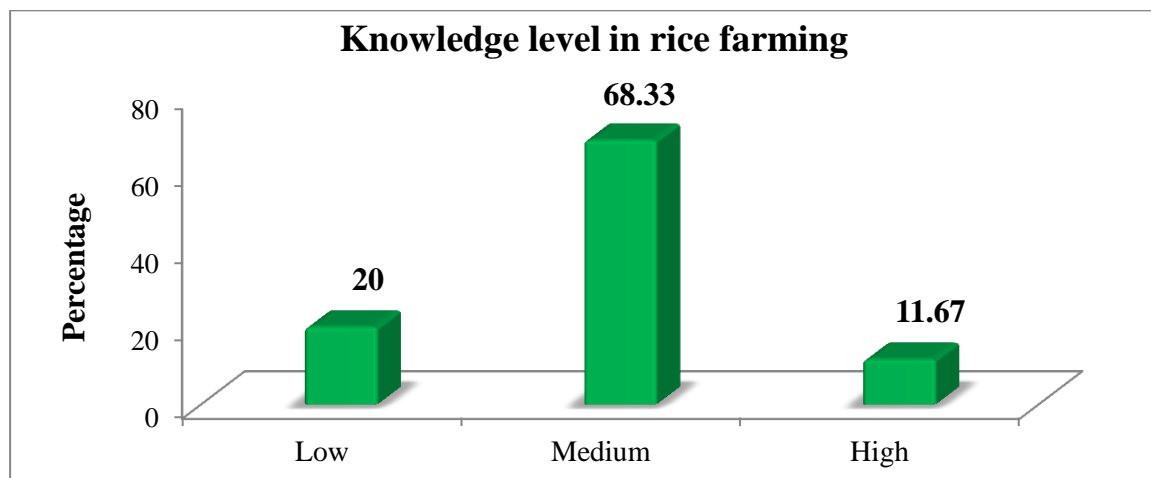


Fig. 17 Distribution of rural youth according to their knowledge level in rice farming

4.1.16 Information seeking behavior

Table 4.16 Distribution of youth according to their information seeking behavior

(n=120)

Sl. No.	Category	Range of scores	Frequency	Per cent
1	Low	<35.24	23	19.17
2	Medium	35.25-46.67	77	64.16
3	High	>46.68	20	16.67
Mean : 40.96				S. D : 5.72

The findings from the Table 4.16 documented that nearly two-third (64.16%) of the youth had medium information seeking behavior followed by less than one-fifth (19.17%) had low information seeking behavior and the remaining (16.67%) had high information seeking behavior.

Majority of the youth seek information from informal sources such as friends, family members and progressive farmers. Though formal sources are perceived to be more credible than informal sources but had shown less influence on rural youth. They also should effectively utilize social media tools to update themselves about the latest information. The findings are in agreement with that of Naresh (2018) and Singh (2020).

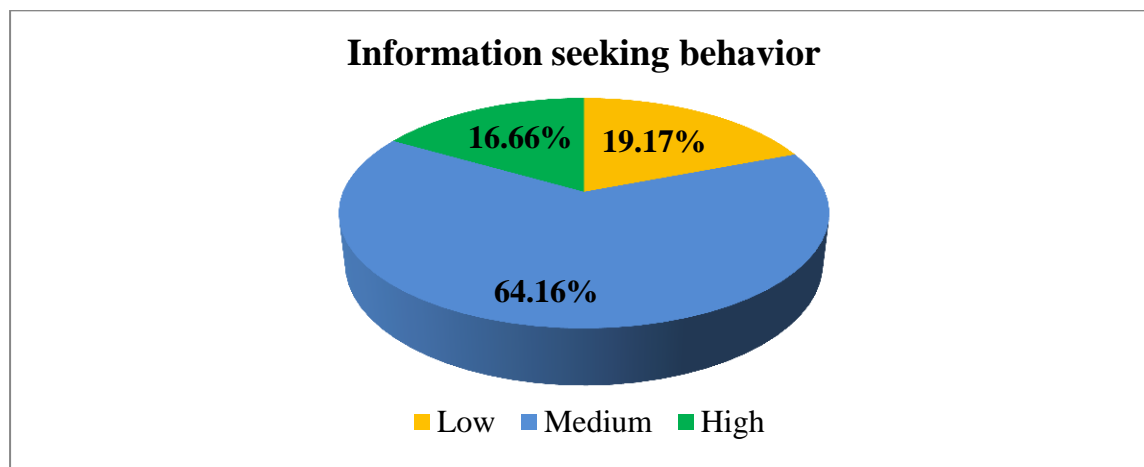


Fig. 18 Distribution of rural youth according to their information seeking behavior

4.1.17 Achievement motivation

Table 4.17 Distribution of rural youth according to their achievement motivation

(n=120)

Sl. No.	Category	Range of scores	Frequency	Per cent
1	Low	<22.63	19	15.83
2	Medium	22.64-26.64	84	70.00
3	High	>26.65	17	14.17
Mean : 24.64				S. D : 2.01

Table 4.17 depicted that more than two-third (70%) of the youth had medium achievement motivation followed by less than a fifth (15.83%) had low achievement motivation and the remaining (14.17%) had high level of achievement motivation.

Majority of the youth had medium level of achievement motivation due to their medium annual income. In the present competitive world, only half of the youth had inculcated new ideas and strategies in their own farming situation learned through exposure as well as experience and were willing to achieve still more in farming. The results are on par with the findings of Sonyabapu (2018), Das (2019) and Singh (2020).

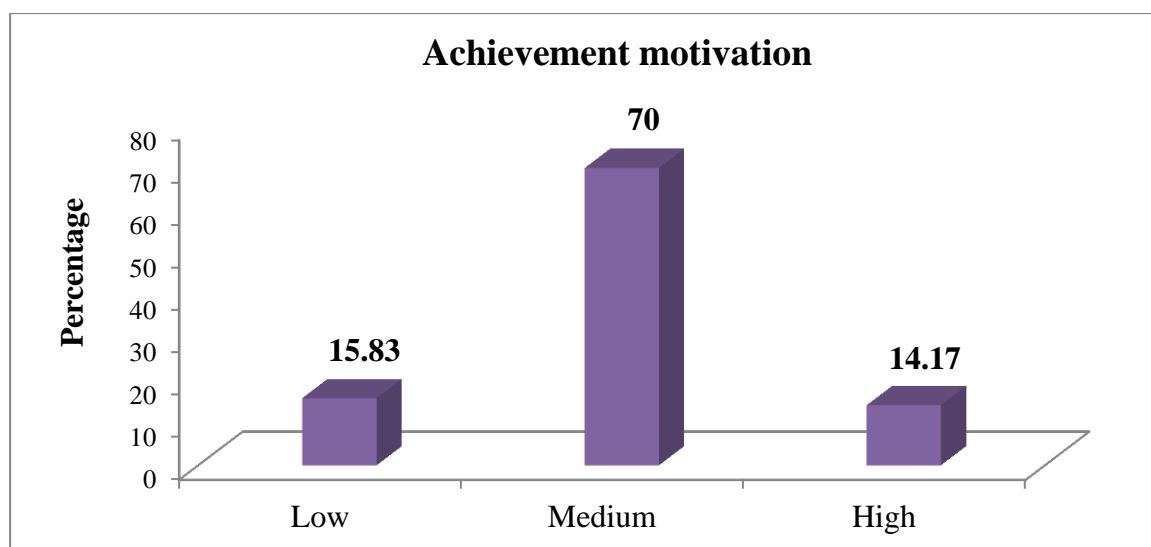


Fig. 19 Distribution of rural youth according to their achievement motivation

4.1.18 Innovativeness

Table 4.18 Distribution of rural youth according to their innovativeness

(n=120)

Sl. No.	Category	Range of scores	Frequency	Per cent
1	Low	<17.12	27	22.50
2	Medium	17.13-24.73	72	60.00
3	High	>24.74	21	17.50
Mean : 20.93				S. D : 3.81

It could be explained from the Table 4.18 that three-fifth (60%) of the youth had medium innovativeness followed by more than one-fifth (22.50%) had low innovativeness and the remaining (17.50%) had high innovativeness.

It could be inferred that the youth had moderately favorable attitude towards innovations. Hence, they must be motivated to adopt new practices and technologies rather than continuing with traditional practices. Educational status, knowledge level, scientific orientation, investment support, trainings and risk orientation were considered as crucial factors in enhancing the innovativeness among rural youth. The results are in conformity with the findings of Saha (2019), Shivaji (2019) and Mubeena *et al.* (2020).

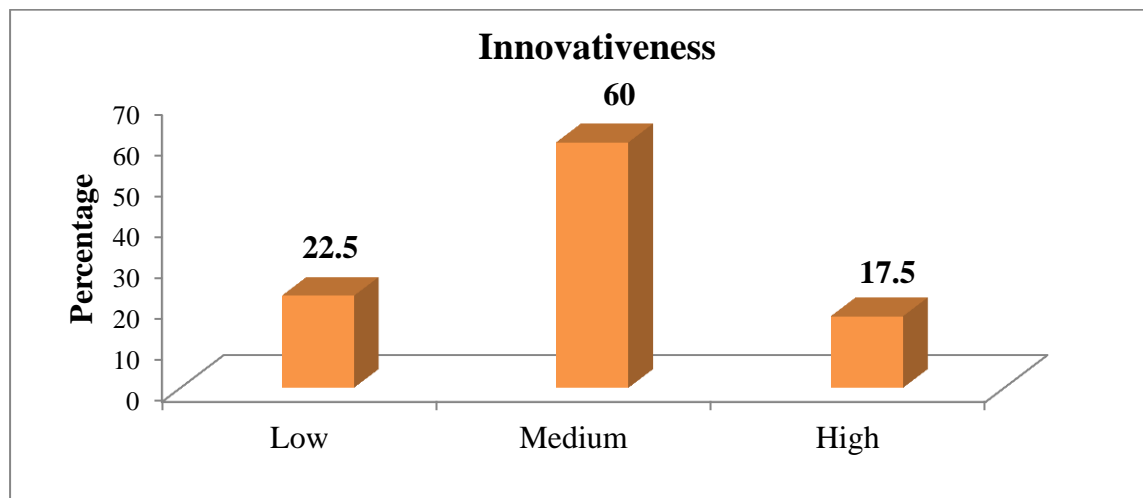


Fig. 20 Distribution of rural youth according to their innovativeness

4.1.19 Market orientation

Table 4.19 Distribution of rural youth according to their market orientation

(n=120)

Sl. No.	Category	Range of scores	Frequency	Per cent
1	Low	<19.68	18	15.00
2	Medium	19.69-24.25	80	66.67
3	High	>24.26	22	18.33
Mean : 21.97			S. D : 2.29	

Table 4.19 showed that two-third (66.67%) of the rural youth had medium market orientation followed by less than a fifth (18.33%) had high market orientation and only a few (15%) had low market orientation.

Majority of the rural youth had medium level of market orientation. Most of the youth were selling their produce through Supplyco and they faced difficulties especially during rainy season when their produce did not comply with the stipulations insisted by Supplyco like maintaining the moisture level between 12 to 17 per cent without pest and disease infestation. The results were in conformity with the findings of Tripathi *et al.* (2018).

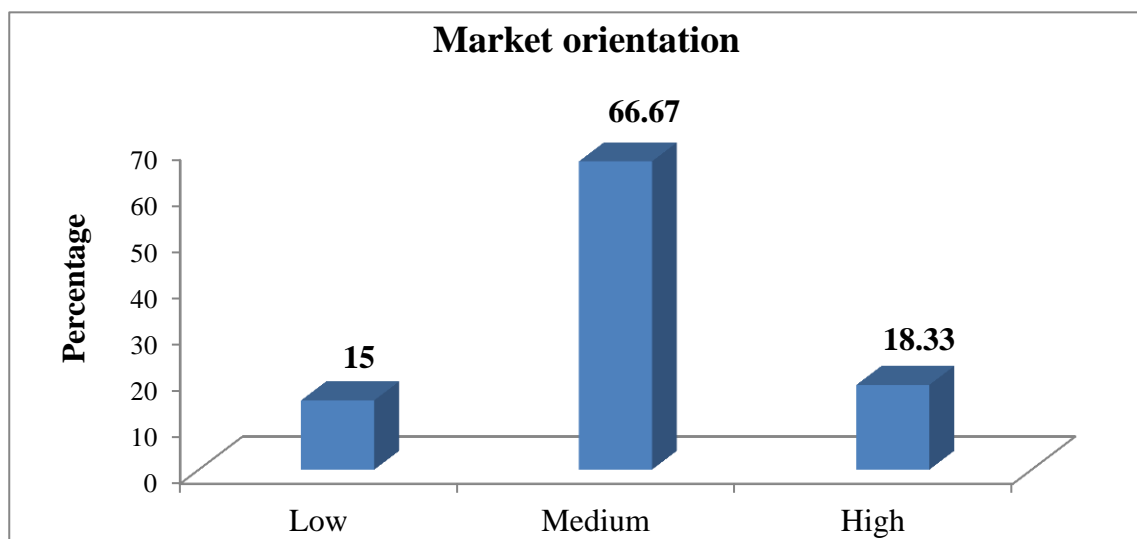


Fig. 21 Distribution of rural youth according to their market orientation

4.2 Occupational preference of rural youth

The rural youth were asked to indicate their occupational preference and the results were depicted in Table 4.20. It could be inferred from the results that majority of the youth in Kuzhalmannam block preferred Government service as their occupational choice followed by business and private service. The most preferred occupation by majority of the rural youth in Kollengode block was farming followed by government

Table 4.20 Block-wise occupational preference of rural youth from Palakkad district

(n=120)

Sl. No.	Occupation	Weighted mean score				Mean score
		Kuzhalmannam	Kollengode	Nenmara	Chittur	
1	Government service	3.13	2.70	2.47	2.70	2.75
2	Business	2.99	2.67	2.87	2.37	2.73
3	Farming	2.70	2.90	2.66	2.63	2.72
4	Private service	2.80	2.37	2.40	2.83	2.60
5	Small-scale industry	2.23	2.47	2.83	2.30	2.46
6	Poultry farming	2.47	2.33	2.43	2.57	2.45
7	Dairy unit	2.63	2.50	2.57	2.03	2.43
8	Vermi-culture	2.20	2.10	2.37	2.30	2.23
9	Fisheries	2.00	2.27	2.00	1.57	1.96
10	Duckery	1.93	1.73	2.03	1.97	1.92
11	Sales and marketing service	1.73	1.83	1.77	1.77	1.78
12	Apiculture	1.80	1.53	2.23	1.50	1.77
13	Value-addition enterprise	1.70	1.80	1.87	1.60	1.74
14	Plant nursery	1.77	1.63	1.53	1.93	1.72
15	Banking sector	1.67	1.20	0.80	1.20	1.22
16	Mushroom enterprise	1.00	0.97	1.17	0.90	1.01
17	Sericulture	1.20	0.80	1.27	0.73	1.00

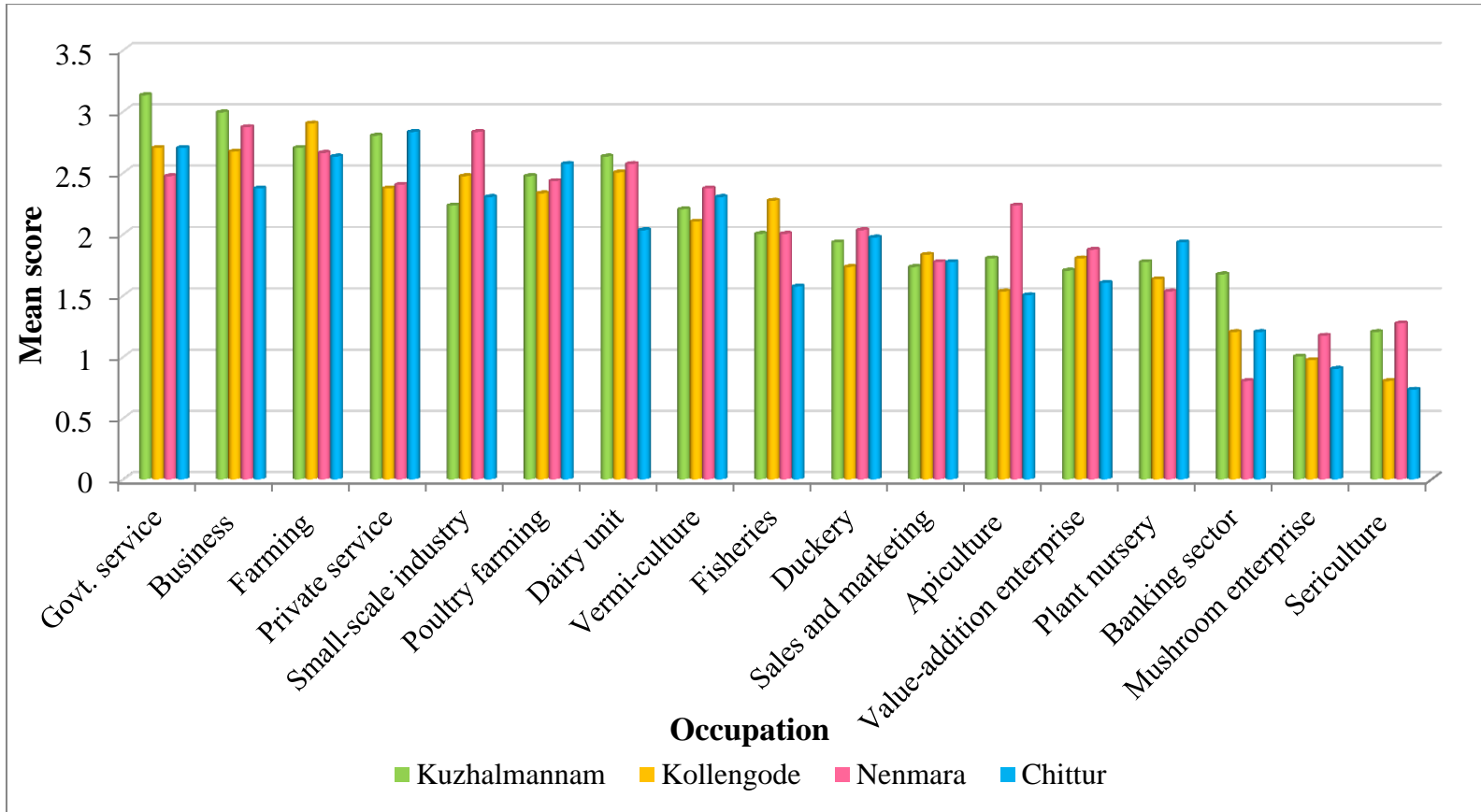


Fig. 22 Block-wise occupational preference of rural youth from Palakkad district

service and business. Most of the rural youth in Nenmara block opted for business followed by small scale industry and farming. Majority of the youth residing in Chittur block preferred private service followed by government service and farming to be their occupation. The least preferred occupation by the majority of the youth was taking up sericulture sector and mushroom enterprise.

Table 4.21 Overall occupational preferences of rural youth from Palakkad district
(n=120)

Sl. No.	Occupation	Mean rank	Rank
1	Government service	15.50	1
2	Business	15.25	2.5
3	Farming	15.25	2.5
4	Private service	13.75	4
5	Small-scale Industry	13.00	5
6	Dairy Unit	12.75	6
7	Poultry farming	12.25	7
8	Vermi-culture	10.00	8
9	Fisheries	7.75	9
10	Duckery	7.75	9
11	Sales and Marketing service	6.25	11
12	Apiculture	6.00	12
13	Value-addition enterprise	5.75	13
14	Banking sector	5.25	14
15	Plant nursery	2.50	15
16	Mushroom enterprise	1.75	16
17	Sericulture sector	1.50	17

It could be observed from the Table 4.21 that based on the mean rank, the most preferred occupation by majority of the rural youth in Palakkad district was government service followed by an equal preference for starting a business and engaging in agricultural activities. The next preferred occupations were private service, to start a small-scale industry and dairy unit. The least preferred occupation was taking up sericulture sector followed by comparatively less preference for mushroom enterprise and plant nursery.

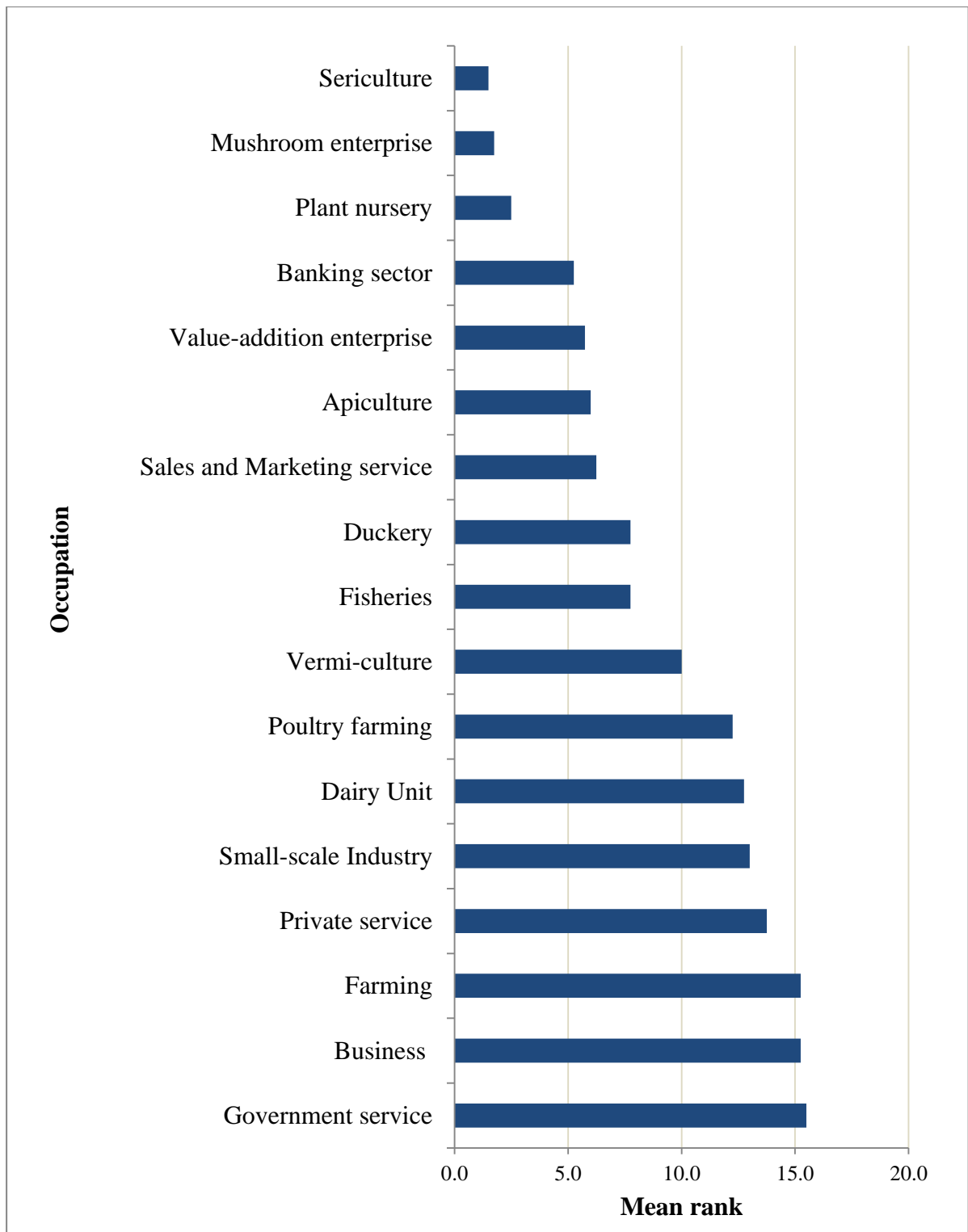


Fig. 23 Overall occupational preferences of rural youth from Palakkad district

Majority of the rural youth in the study area opted for government service since they perceived it as a secured job, receive regular income and improve their social status and prestige in the society. It is clear that youth are cautious about their career and hence they were highly enticed towards white collar jobs. The second preferred choice was business and farming as they are desired for self-employment and to get year around employment from farm enterprises respectively. Sericulture sector and mushroom enterprise were the least preferred option since it requires high initial investment as well as most of the youth lack training and expertise in this area.

The findings are in accordance with Elias *et al.* (2018), Tripathi *et al.* (2018) Ghimiray and Mohapatra (2020) and Veetil *et al.* (2020).

Table 4.22 Agreement among rural youth from four blocks of Palakkad district in ranking their occupational preference

Category	Kendall's co-efficient of concordance	χ^2 value
Rural youth from four blocks of Palakkad (N=4)	0.914**	58.471

(n=120)

** Significant at 1% level

It could be inferred from the Table 4.22 that there is a high degree of concordance among the rural youth from four blocks of Palakkad district to select their preferred occupation as government service followed by farming, business, private service, small scale industry, poultry farming, dairy unit, vermi-culture, fisheries, duckery, sales and marketing service, apiculture, value-addition enterprise, nursery, banking sector, mushroom enterprise and sericulture at one per cent level of significance.

4.3 Existing skill level of rural youth in rice farming

From the Table 4.23, it can be inferred that the overall skill level of rural youth in rice farming was found above average with a mean value of 69.73. Among the four blocks, rural youth from Nenmara block possessed the high skill level (73.47) than the rural youth from Kuzhalmannam (71.50), Chittur (68.38) and Kollengode (65.58) blocks. It could be concluded that there is a significant difference in skill level among rural youth from four blocks of Palakkad district.

Overall general skill of rural youth was found above average with a mean value of 73.99. The learning skill was the least acquired skill by the rural youth among general skills with a score of 71.37. The youth from Nenmara block (76.97) ranked first for the general skill level followed by Kuzhalmannam (75.87), Chittur (72.50) and Kollengode (70.63).

Overall managerial skill of rural youth was found above average with a mean value of 71.97. The rural youth had high risk taking ability (73.87) whereas time management was the least acquired skill (69.03). The youth from Nenmara block (75.67) had high level of managerial skills whereas youth from Kollengode (68.29) had the least skill level.

Overall communication skill of rural youth was found above average with a mean value of 68.18. Among communication skills, rural youth had low level of ICT skills with a score of 51.67. The youth from Kuzhalmannam block had high level of communication skill (71.67) whereas the youth from Chittur block (65.17) had the least acquired skill level.

Overall technical skill level of rural youth was found above average with a mean value of 64.79. The youth from Nenmara block (71.15) had high technical skills whereas youth from Kollengode (57.71) possessed low level of technical skills.

Table 4.23 Existing skills of rural youth involved in rice farming from four blocks of Palakkad district

Sl. No.	Skill	Kuzhalmannam (n=30)	Kollengode (n=30)	Nenmara (n=30)	Chittor (n=30)	Overall (N=120)
	General skills	Mean Per cent Score				
1	Positive attitude	76.00	73.73	78.13	75.60	75.87
2	Self-motivation	76.53	70.93	76.67	72.27	74.10
3	Self-confidence	77.07	70.67	77.33	73.46	74.63
4	Cognitive skills	73.87	67.20	75.73	68.67	71.37
	Mean	75.87	70.63	76.97	72.50	73.99
	Managerial skills					
1	Problem solving skills	73.67	67.33	77.00	69.22	71.81
2	Decision making skills	71.89	67.67	75.22	72.33	71.78
3	Entrepreneurial skills	79.67	67.78	75.44	69.89	73.19
4	Marketing skills	71.67	68.33	77.67	70.89	72.14
5	Time management skills	68.00	66.11	72.00	70.00	69.03
6	Risk taking skills	70.93	72.53	76.67	75.33	73.87
	Mean	72.64	68.29	75.67	71.28	71.97
	Communication skills					
1	Information management skills	74.00	72.27	75.73	70.13	73.03
2	Listening skills	79.07	73.07	75.60	73.07	75.20
3	Interpersonal skills	78.67	66.67	75.73	70.13	72.80
4	ICT skills	55.33	50.67	53.33	47.33	51.67
	Mean	71.67	65.67	70.10	65.17	68.18
	Technical skills					
1	Crop production skills	65.73	57.71	71.15	64.17	64.79
	Overall mean	71.50	65.58	73.47	68.38	69.73

4.4 Skill gap among rural youth in rice farming

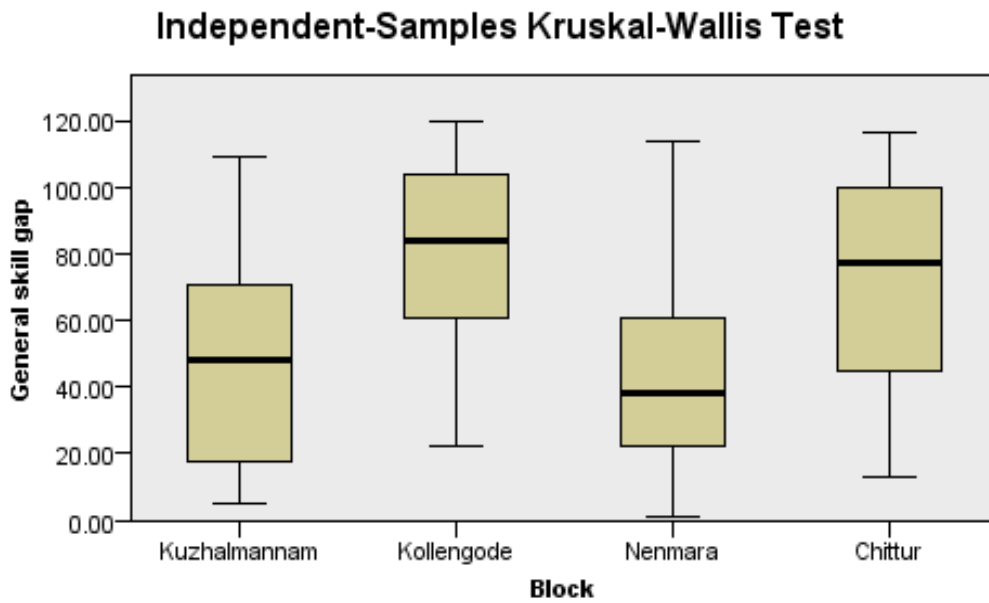
4.4.1 General skills

Table 4.24 Overall gap in general skills among rural youth in rice farming (n=120)

Sl. No.	General skills	Mean Per cent Score				Mean
		Kuzhalmannam (n=30)	Kollengode (n=30)	Nenmara (n=30)	Chittor (n=30)	
1	Positive attitude	24.00	26.27	21.87	24.40	24.13
2	Self-motivation	23.47	29.07	23.33	27.73	25.90
3	Self-confidence	22.93	29.33	22.67	26.53	25.37
4	Learning skills	26.13	32.80	24.27	31.33	28.63
	Mean	24.13	29.37	23.03	27.50	26.01

From the data presented in the Table 4.24 it could be inferred that the mean of overall gap in general skills among rural youth was found to be 26.01. Among the general skills, learning skills had the highest gap with a score of 28.63 followed by self-motivation, self-confidence and positive attitude with index values of 25.90, 25.37 and 24.13 respectively. The reasons might be lack of interest, awareness and understanding about recommended practices in rice farming. Only a few respondents were found to regularly subscribe and read farm magazines such as *karshaka shree etc.* to update themselves about new information and latest technologies.

Fig. 24 shows the comparison of gap in general skills among rural youth involved in rice farming from four blocks of Palakkad district. Analysing block-wise revealed that the rural youth in Kollengode block had the highest skill gap with mean of 29.37 whereas rural youth in Nenmara block had the lowest skill gap with a mean of 23.03. There is a significant difference in the level of skill gap among rural youth from four blocks.



Total N	120
Test Statistic	26.831
Degrees of Freedom	3
Asymptotic Sig. (2-sided test)	.000

1. The test statistic is adjusted for ties.

Fig. 24 Comparison of gap in general skills among rural youth involved in rice farming from four blocks of Palakkad district

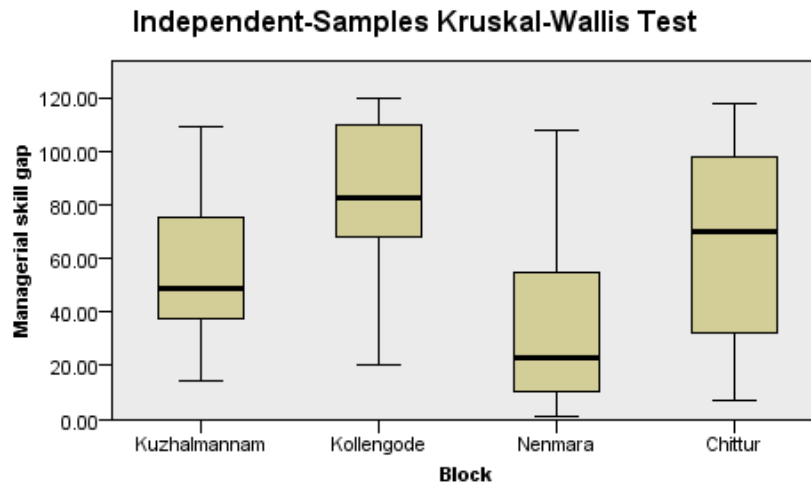
4.4.2 Managerial skills

Table 4.25 Overall gap in managerial skills among rural youth in rice farming
(n=120)

Sl. No.	Managerial skills	Mean Per cent Score				Mean
		Kuzhalmannam (n=30)	Kollengode (n=30)	Nenmara (n=30)	Chittor (n=30)	
1	Problem solving skills	26.33	32.66	23.00	30.78	28.19
2	Decision making skills	28.11	32.33	24.78	27.67	28.22
3	Entrepreneurial skills	20.33	32.22	24.56	30.11	26.81
4	Marketing skills	28.33	31.67	22.33	29.11	27.86
5	Time management skills	32.00	33.89	28.00	30.00	30.97
6	Risk taking skills	29.07	27.46	23.33	24.67	26.13
	Mean	27.36	31.71	24.33	28.72	28.03

Table 4.25 depicted that the overall gap in managerial skills among rural youth was found to be 28.03. Time management skill was found to have the highest skill gap among the managerial skills with a score of 30.97 followed by decision making skills, problem solving skills, marketing skills and entrepreneurial skills with a score of 28.22, 28.19, 27.86 and 26.81 respectively whereas skill gap was found to be low for risk taking ability with a score of 26.13. Even when majority of the youth schedule their activities in advance, they were not able to pursue those agricultural operations in accordance with crop calendar due to their occupational status and indulging in other works during leisure time. Hence, there is a need to improve the way in which they can manage their time more efficiently.

Block-wise analysis revealed that the rural youth in Kollengode block had the highest skill gap with a mean of 31.71 whereas rural youth in Nenmara block had the lowest skill gap with a mean of 24.33. There is a significant difference in the level of skill gap among rural youth from four blocks.



Total N	120
Test Statistic	30.978
Degrees of Freedom	3
Asymptotic Sig. (2-sided test)	.000

1. The test statistic is adjusted for ties.

Fig. 25 Comparison of gap in managerial skills among rural youth involved in rice farming from four blocks of Palakkad district

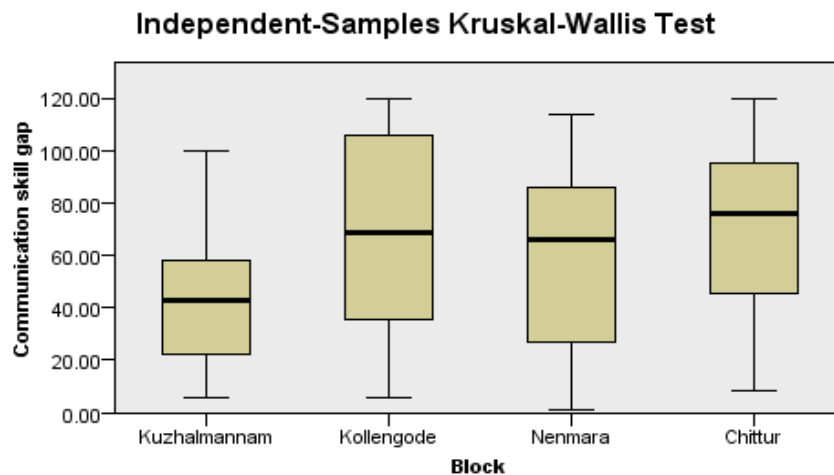
4.4.3 Communication skills

Table 4.26 Overall gap in communication skills among rural youth in rice farming (n=120)

Sl. No.	Communication skills	Mean Per cent Score				Mean
		Kuzhalmannam (n=30)	Kollengode (n=30)	Nenmara (n=30)	Chittur (n=30)	
1	Information management skills	26.00	27.73	24.27	29.87	26.97
2	Listening skills	20.93	26.93	24.40	26.93	24.80
3	Interpersonal skills	21.33	33.33	24.27	29.87	27.20
4	ICT skills	44.67	49.33	46.67	52.67	48.33
	Mean	28.23	34.33	29.90	34.84	31.82

From the Table 4.26 it could be concluded that the mean of overall gap in communication skills among rural youth was found to be 31.82. Among the communication skills, the ICT skills topped the list with a score of 48.33 followed by interpersonal skills, information management skills and listening skills with a score of 27.20, 26.97 and 24.80 respectively. So it could be inferred that the ICT access by rural youth had the highest skill gap whereas listening ability had the lowest skill gap.

Analysing block-wise data indicated that the rural youth in Chittur block had the highest skill gap with a mean index of 34.84 whereas rural youth in Kuzhalmannam block had the lowest skill gap with an index value of 28.23 with respect to communication skills.



Total N	120
Test Statistic	10.305
Degrees of Freedom	3
Asymptotic Sig. (2-sided test)	.016

1. The test statistic is adjusted for ties.

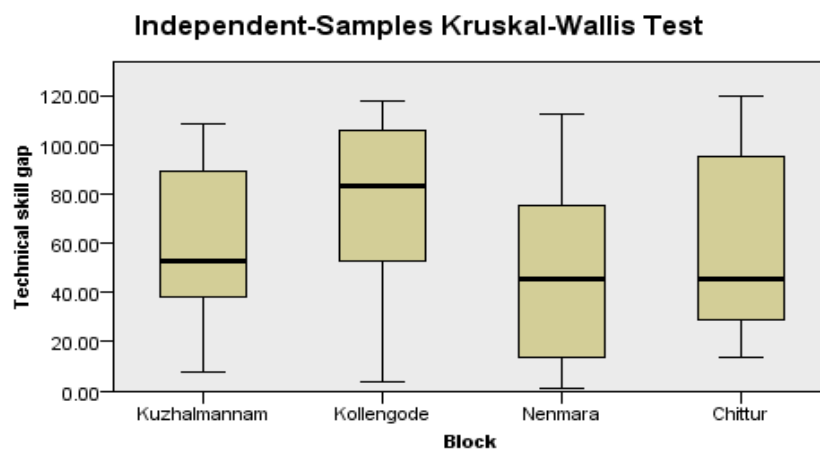
Fig. 26 Comparison of gap in communication skills among rural youth involved in rice farming from four blocks of Palakkad district

4.4.4 Technical skills

Table 4.27 Overall gap in technical skills among rural youth in rice farming

(n=120)

Sl. No.	Technical skills	Mean Per cent Score				Mean
		Kuzhalmannam (n=30)	Kollengode (n=30)	Nenmara (n=30)	Chittur (n=30)	
1	Crop production skills	34.27	42.29	28.85	35.42	35.21



Total N	120
Test Statistic	13.085
Degrees of Freedom	3
Asymptotic Sig. (2-sided test)	.004

1. The test statistic is adjusted for ties.

Fig. 27 Comparison of gap in technical skills among rural youth involved in rice farming from four blocks of Palakkad district

It could be observed from the Table 4.27 that the mean of overall gap in technical skills was found to be 35.21. Block-wise analysis indicated that rural youth from Kollengode block had the highest skill gap with a mean of 42.29 which is found to be higher than overall index value. The rural youth from Nenmara block had the lowest skill gap with a mean value of 28.85. Majority were found to lack skills in selection of suitable variety for appropriate season, nursery management and integrated pest and disease management.

4.4.5 Overall skill gap among rural youth in rice farming from Palakkad district

Table 4.28 Overall skill gap among rural youth involved in rice farming

(n=120)

Sl. No.	Skills	Mean Per cent Score				Overall skill gap
		Kuzhalmannam (n=30)	Kollengode (n=30)	Nenmara (n=30)	Chittur (n=30)	
1	General skills	24.13	29.37	23.03	27.50	26.01
2	Managerial skills	27.36	31.71	24.33	28.72	28.03
3	Communication skills	28.23	34.33	29.90	34.84	31.82
4	Technical skills	34.27	42.29	28.85	35.42	35.21
	Mean	28.50	34.42	26.53	31.62	30.27

The findings presented in the Table 4.28 revealed that the overall skill gap among rural youth in Palakkad was found to be 30.27. The highest gap was found among rural youth in technical skills followed by communication skills, managerial skills and general skills with the mean of 35.21, 31.82, 28.03 and 26.01 respectively. Majority lack technical skills as they had not undergone sufficient number of trainings in rice farming and lack expertise to operate farm machineries and also to carry out cultural practices.

Analyzing block-wise data, it could be inferred that rural youth from Kollengode block had the highest skill gap with a mean of 34.42 whereas rural youth from Nenmara block had the lowest skill gap with a mean of 26.53. The skill gap was found to be

highest among rural from Kollengode, Chittur and Kuzhalmannam blocks for technical skills except rural youth from Nenmara block who had the highest gap in communication skills.

Table 4.29 Comparison of overall skill gap among rural youth involved in rice farming from four blocks of Palakkad district

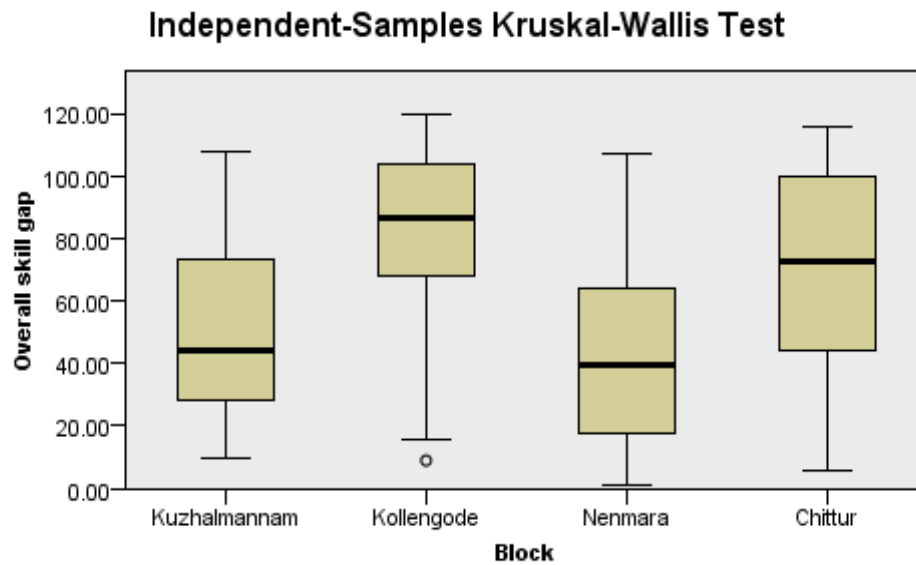
(n=120)

Sl. No	Skills	Mean Rank				Kruskal wallis H value
		Kuzhalmannam (n=30)	Kollengode (n=30)	Nenmara (n=30)	Chittor (n=30)	
1	General skills	48.75	81.23	40.68	71.33	26.831**
2	Managerial skills	56.07	84.22	35.35	66.37	30.978**
3	Communication skills	45.88	68.77	56.17	71.18	10.305*
4	Technical skills	59.63	78.13	46.10	58.13	13.085**
	Overall skill gap	49.93	81.90	42.25	67.92	23.744**

The Table 4.29 shows the comparison of overall skill gap among rural youth involved in rice farming from four blocks of Palakkad. The Kruskal-Wallis H value indicated that there is a significant difference in skill gap among rural youth involved in rice farming from all the four blocks of Palakkad district. The overall skill gap among rural youth involved in rice farming from Kollengode block was significantly higher than that of rural youth engaged in rice farming from Chittur, Kuzhalmannam and Nenmara blocks.

The mean rank was found to be highest for youth in Kollengode block whereas least for youth in Nenmara block. It could be inferred that the rural youth in Kollengode block had the highest skill gap. Majority of the respondents in this block practiced farming only as a subsidiary occupation and their farm were mostly looked after by their family members which led to their less involvement in agricultural activities. The rural youth from Nenmara block had the lowest skill gap as they were comparatively more

engaged in agricultural operations, made frequent contact with extension agencies and attended training programmes.



Total N	120
Test Statistic	23.744
Degrees of Freedom	3
Asymptotic Sig. (2-sided test)	.000

1. The test statistic is adjusted for ties.

Fig. 28 Box plot comparing overall skill gap among rural youth involved in rice farming from four blocks of Palakkad district

Table 4.30 Categorization of rural youth from Palakkad district based on their overall skill gap in rice farming

(n=120)

S. No.	Category	Criteria	Frequency	Percentage
1	Low	<24	12	10.00
2	Medium	25 - 36	91	75.83
3	High	>37	17	14.17
Mean : 30.27				S. D : 6.56

Table 4.30 indicated that around three-fourth of the rural youth belonged to the category of medium skill gap in rice farming followed by 14.17 per cent had high skill gap whereas only a few (10%) of the youth had low skill gap in rice farming. As majority of the rural youth were from agricultural background, they were found to be partially skilled in the areas of agricultural activities in rice farming.

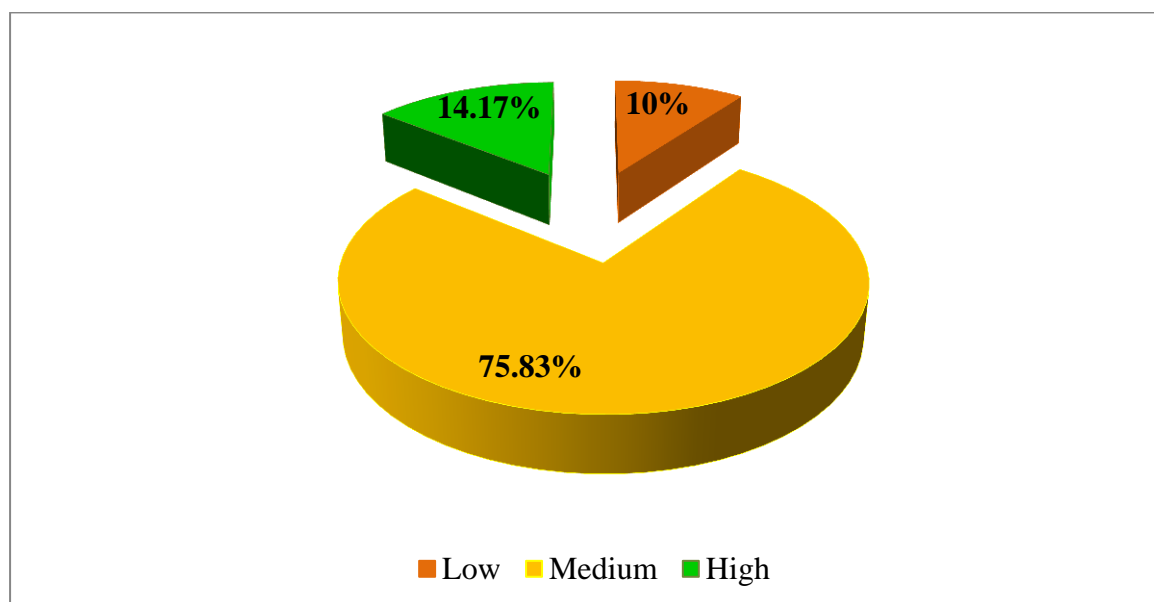


Fig. 29 Extent of skill gap among rural youth in rice farming

4.5 Factors affecting rural youth in acquiring skills in rice farming

Table 4.31 Relationship between independent variables and skill level of rural youth

Sl. No.	Variables	Spearman's rank correlation coefficient (rho)
1	Age	0.112 NS
2	Educational status	-0.029*
3	Land holding	0.122 NS
4	Farming experience	0.256 **
5	Annual income	0.125 NS
6	Social participation	0.259 **
7	Trainings received	0.286 **
8	Extension agency contact	0.400 **
9	Occupational status	0.028 NS
10	Economic motivation	0.313 **
11	Scientific orientation	0.312 **
12	Knowledge level in rice farming	0.350 **
13	Information seeking behavior	0.336 **
14	Achievement motivation	0.290 **
15	Innovativeness	0.248 **
16	Market orientation	0.223 *

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

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

NS – Non-significant

It could be inferred from the Table 4.31 that farming experience, social participation, trainings received, extension agency contact, economic motivation, scientific orientation, knowledge level, information seeking behavior, achievement motivation and innovativeness had positive and significant relationship with skill level of rural youth in rice farming at one per cent level of significance.

Market orientation was found to influence skill level of rural youth at five per cent level of significance. Thus, improvement of these factors would increase the skill level of rural youth in rice farming.

It could be substantiated that being engaged in farming over years had enhanced the skill level of rural youth in rice farming. The knowledge gained by attending various training programmes on farming and allied activities might have influenced the youth in adopting the recommended practices as well as new technologies. Developing contact with extension agencies would enable youth to get required information, technical support and financial assistance which ultimately aid in improving their skill level. The findings are in accordance with Ighoro *et al.* (2017) for farming experience and Ray *et al.* (2020) for occupation and with Premavathi (2002) for extension agency contact.

Educational status had negative relationship with the skill level of rural youth. Highly educated youth perceived farming as a less profitable venture and hence showed less interest towards acquiring knowledge and skills in farming and they had high aspirations towards white collar jobs. The findings are in contrary with the results of Ighoro *et al.* (2017).

Age, land holding, annual income and occupational status of rural youth showed non-significant relationship with the skill level of rural youth. It could be inferred that extent of utilization of available land for maximizing the output, investment and returns from farming activities and the primary occupation of rural youth had no significant association with their skill level. The findings are in conformity with the results of Ray *et al.* (2020) for land holding, trainings received and with Premavathi (2002) for occupation.

Table 4.32 Factors influencing youth in acquiring skills in rice farming

Sl. No.	Variables	Standard error	Wald Chi-square	P value	Odds ratio
1	Farming experience	0.1114	0.087	0.076	1.935
2	Social participation	0.1431	1.867	0.172	2.432
3	Trainings received	0.5381	0.408	0.523	2.820
4	Extension agency contact	0.2517	0.228	0.633	2.255
5	Economic motivation	0.1267	6.537	0.011**	2.765
6	Scientific orientation	0.1009	0.056	0.813	1.953
7	Knowledge level	0.1372	0.288	0.591	2.153
8	Information seeking behaviour	0.0969	4.607	0.032**	2.462
9	Achievement motivation	0.1182	5.491	0.019**	2.638
10	Innovativeness	0.0686	1.350	0.245	2.166
11	Market orientation	0.1083	0.040	0.842	1.957

** Significant at the 0.01 level (2-tailed)

From the Table 4.32 it could be inferred that variables such as economic motivation, knowledge level in rice farming and achievement motivation were found to be statistically significant with the perceived skill of rural youth in rice farming. It was observed that for a unit increase in the level of economic motivation, there was 2.765 times chance that rural youth would fall in the category of acquiring above average skills in rice farming. Urge towards profit maximization and to increase their income level might have influenced the youth in acquiring skills in rice farming. The probability to acquire above average skills in rice farming by rural youth increases by 2.462 times, when their information seeking behavior increases by one unit. Willingness to seek right information at right time from various formal, informal and mass media sources with perceived credibility might have influenced the interest of the youth in acquiring knowledge and skills in rice farming. With every one unit increase in the level of achievement motivation, the probability to acquire above average skills in rice farming increases by 2.638 units. Diversification of enterprises with an intention to excel in

farming might have positively influenced rural youth towards acquiring skills in rice farming.

4.6 Strategies to bridge the skill gap among rural youth in rice farming

Strengthening the capacity building programmes

The institutions such as Krishi Vigyan Kendras, Palakkad (KVK), Regional Agricultural Research Station (RARS), Pattambi, Regional Agriculture Technology Training Centre (RATTC), Malampuzha, Agricultural Technology Management Agency (ATMA), Rural Self-Employment Training Institute (RSETI), Central Training Institute (CTI), Mannuthy *etc.* can organize skill development training programmes at regular intervals on latest technologies to enhance the participation of rural youth in rice farming. Farm Field School (FFS), exposure visits and demonstrations may be conducted by involving rural youth locally to prove the economic viability of rice farming and also to improve their technical skills.

Training programmes on farm mechanization in paddy cultivation, seed treatment, nursery management, usage of LCC for Nitrogen management in rice, integrated pest and disease control in rice, use of bio-inputs, value-addition in rice *etc.* can be conducted for rural youth at regional level to enhance their participation in rice farming.

Strengthening institutional support and networking

Extension programs can be organized to find out how the participation of rural youth can be improved in rice farming apart from their main occupation. Leisure time of rural youth apart from their primary occupation can be utilized to maximize their participation in agricultural operations. They must be motivated to follow crop calendar and still there is a need to improve the way in which rural youth can manage their more effectively. For those rural youth who are completely dependent on agriculture, hand-holding support may be provided to retain their interest in rice farming. Formation of rice farming youth groups will create a sense of social security and sustain their interest in

rice farming. Conducting communicative skills enhancement program and motivational programs would strengthen the network of rural youth.

Institutional support and incentives for starting rice-based enterprises or value-addition enterprises may be provided to rural youth for enhancing the income-generating opportunities in rice farming. They must be facilitated with latest technical inputs and market linkages to earn maximum income out of rice-based products based on the market demand. Proper guidance should be provided for the youth at village level about direct marketing of their produce. Agricultural finance and insurance especially in crisis situation need to be improved and usage of it must be explained to the rural youth.

ICT initiatives

The rural youth must be made aware about ICT initiatives in the central level which includes mobile applications such as IFFCO iMandi, CHC-Farm Machinery (hire farm implements such as tractor and tiller) *etc.* Even rural youth can utilize digital platforms such as e-NAM, AgriMarket, AGMARKNET, e-RaKAM and mobile applications such as Kisan Rath, Kisan Suvidha *etc.* to sell their agricultural produce, get market price, information about dealers, weather advisory *etc.* Some of the state level ICT initiatives are CROP-9-DSS (expert system), KISSAN Kerala, Crop Health Decision Support System (CHDSS), KAU Fertulator (calculation of fertilizers), KAU e-Crop Doctor (Plant protection advisory), KAU Agri-Infotech portal and mobile applications such as Meghdoot (weather advisory), Mannu (fetch information about nutrient status of soil), Farm Extension Manager *etc.*

Effective usage of social media tools for improving the skill level of youth in rice farming may be explored further. WhatsApp groups can be created for those youth involved in rice farming in a particular panchayat to share and update information about new practices, weather forecast *etc.* Documentary videos about improved practices, success stories of progressive farmers and interview with experts *etc.* can be accessed by them through social media platforms such as Facebook, YouTube *etc.* Online journals, e-magazines and other available e-resources can be accessed for improving their

knowledge level in rice farming and allied activities. They also must be encouraged to attend the trainings through online platforms such as Zoom, Google Meet *etc.*

Effective utilization of government development programs

Consorted efforts may be initiated to attract youth in rice farming through effective utilization of skill development programs of the central and state government schemes. Some of the government initiatives include Training Rural Youth for Self-Employment in Agriculture (TRYSEM), Skill Training of Rural Youth (STRY), Pradhan Mantri Kisan Maan Dhan Yojana *etc.*

TRYSEM aimed at providing basic technical and entrepreneurial skills for the rural youth to enable them take up income generating activities. Pradhan Mantri Kisan Maan Dhan Yojana is a voluntary scheme for farmers in the age group of 18 to 40 years which is a monthly pension scheme of Rs. 3000 on attaining the age of 60 years. SBI in partnership with reputed NGOs like MSSRF, BAIF development research foundation initiated SBI Youth for India programme to provide financial assistance to the youth in rural areas.

Other strategies

The rural youth must be motivated to learn the latest technologies and innovations in rice farming to maximize their profit. There is a strong need for orientation of rural youth to develop a favourable attitude towards seeking agricultural information. Higher social participation, regularly participating in the training programmes organized by various agencies and improving the agricultural knowledge would enhance the information management behavior of rural youth. Promotion of Integrated Farming System (IFS) in rice farming among youth would strengthen the recycling of resources which will enhance the economic viability, stability and sustainability of rice farming. Consorted efforts are to be made by the concerned departments to encourage rural youth for adopting appropriate agricultural technologies to carry out timely farm operations and precise application of inputs would lead the rice farming sustainable and economically viable.

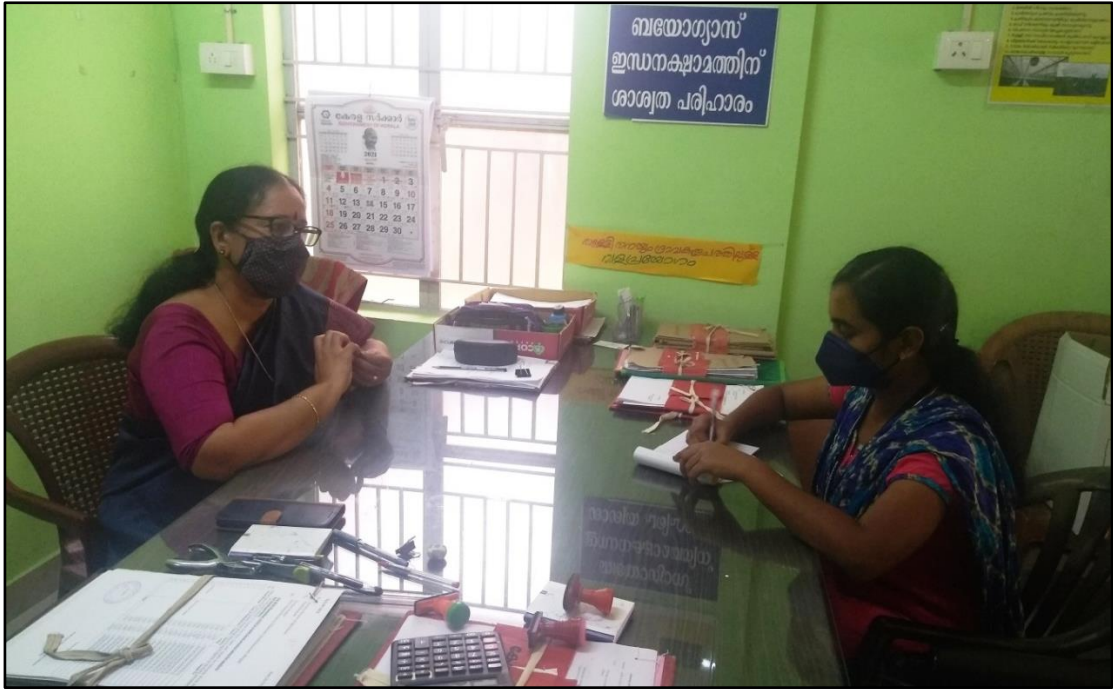


Plate 1. Interaction with Assistant Director of Agriculture, Kuzhalmannam



Plate 2. Interaction with Agricultural Officer, Ayilur



Plate 3. Interaction with rural youth in Kozhinjampara



Plate 4. Interaction with rural youth in Vandazhi

Summary and Conclusion

5. SUMMARY AND CONCLUSION

The objectives of the study were to identify the various occupational preferences of rural youth, to assess the skill gap among rural youth in rice farming, to find out the factors influencing rural youth in acquiring skills in rice farming and to suggest strategies to bridge the skill gap among rural youth in rice farming.

The present study was conducted among 120 rural youth in Palakkad district. The list of rural youth who are involved in rice farming were collected from the respective office of Assistant Director of Agriculture through Krishi Bhavans and Padasekharams from four blocks of Palakkad district *viz.* Kuzhalmannam, Kollengode, Nenmara and Chittur. Thirty rural youth engaged in rice farming from each block were randomly selected as respondents for the study.

The data were collected with the help of pre-tested structured interview schedule. The independent variables were selected for the study after judges rating which includes age, gender, education, land holding, farming experience, farm power possession, occupation, annual income, social participation, trainings received, possession of ICT tools, extension agency contact, economic motivation, scientific orientation, knowledge level in rice farming, information seeking behavior, achievement motivation, innovativeness and market orientation.

The collected data were tabulated and analysed using the appropriate statistical tools such as frequency, per cent, arithmetic mean, standard deviation, correlation analysis, logistics regression and Kruskal-Wallis test.

Salient findings of the study are as follows:

Profile characteristics of rural youth

- ❖ Nearly two-third of the rural youth were in the age group of 30 to 35 years.
- ❖ Majority of the rural youth were found to be male.

- ❖ More than one-third of rural youth were graduates followed by more than one-fourth had completed high school education. Only a very few were post-graduates, diploma holders and had completed higher secondary education while only one respondent had primary education.
- ❖ One-third of rural youth were holding less than one hectare of land followed by more than one-fourth were holding one to two hectares of land while less than one-fourth were holding two to four hectares and only less than one-fifth were holding four to ten hectares of land. None of them were holding land above ten hectares.
- ❖ More than one-third of the rural youth had an experience of five to ten years in farming followed by less than one-third had less than five years of experience whereas more than one-fourth had experience of more than 10 years in farming.
- ❖ Nearly three-fourth of the rural youth possessed sprayer followed by around one-fifth owned a tractor and a few owned power tiller. A very less number of respondents possessed cono-weeder and rice transplantor.
- ❖ More than one-third of the rural youth were engaged in farming as well as employed in private sector followed by those involved in agriculture and allied activities, agriculture + self-employment, agriculture + business, agriculture alone and agriculture + service in government sector. Only one respondent was engaged as agricultural laborer.
- ❖ More than half of the rural youth had an annual income of Rs. 1 to 3 lakhs followed by nearly one-fourth had income less than Rs. 1 lakh and the remaining had income more than Rs. 3 lakhs.
- ❖ Nearly half of the rural youth had medium social participation followed by one-third had low social participation and only a few had high social participation.
- ❖ More than one-third of the rural youth had received training on farming and allied activities.

- ❖ Almost all the respondents owned a smart phone followed by more than three-fifth owned either a computer or laptop and nearly one-fourth owned a mobile phone. Only few of them had radio and tablet.
- ❖ More than half of the rural youth had medium level of extension agency contact followed by more than one-fifth had low level of extension agency contact and only a fifth had high level of contact with extension agencies.
- ❖ More than two-third of the rural youth had medium economic motivation followed by less than a fifth had high economic motivation and only a few had low economic motivation.
- ❖ More than three-fifth of the youth had medium scientific orientation followed by more than a fifth had low scientific orientation and the remaining had high scientific orientation.
- ❖ More than two-third of the rural youth had medium level of knowledge in rice farming followed by one-fifth possessed low level of knowledge and only a few had high level of knowledge in rice farming.
- ❖ Nearly two-third of the youth had medium information seeking behavior followed by less than one-fifth had low information seeking behavior and the remaining had high information seeking behavior.
- ❖ More than two-third of the youth had medium achievement motivation followed by less than a fifth had low achievement motivation and the remaining had high level of achievement motivation.
- ❖ Three-fifth of the rural youth had medium innovativeness followed by more than one-fifth had low innovativeness and the remaining had high innovativeness.
- ❖ Two-third of the rural youth had medium market orientation followed by less than a fifth had high market orientation and only a few had low market orientation.

Occupational preference of rural youth

- ❖ The most preferred occupation by rural youth in Palakkad district was government service. The least preferred occupation by rural youth was sericulture sector.

- ❖ Majority of the youth in Kuzhalmannam block preferred Government service as their occupational choice followed by business and private service.
- ❖ The most preferred occupation by rural youth in Kollengode block was farming followed by government service and business.
- ❖ Most of the rural youth in Nenmara block opted for business followed by small scale industry and farming as their occupational choice.
- ❖ Majority of the youth residing in Chittur block preferred for private service followed by government service and farming to be their future occupation.

Existing skill level of rural youth in rice farming

- ❖ The overall skill level of rural youth in rice farming was found above average with a mean value of 69.73. The overall general skill of rural youth was found above average with a mean of 73.99. The overall managerial skill of rural youth was found above average with a mean value of 71.97. The overall communication skill of rural youth was found above average with a mean of 68.18. The overall technical skill level of rural youth was found above average with a mean value of 64.79.

Skill gap among rural youth in rice farming

- ❖ The overall skill gap among rural youth in Palakkad was found to be 30.27. The highest gap was found among rural youth in technical skills.
- ❖ The overall gap in general skills among rural youth was found to be 26.01. Among the general skills, learning skills had the highest gap with a score of 28.63.
- ❖ The mean value of overall gap in managerial skills among rural youth was found to be 28.03. Time management skill was found to have the highest skill gap among the managerial skills with a score of 30.97.
- ❖ The mean index of overall gap in communication skills among rural youth was found to be 31.82. ICT skills topped the list with a score of 48.33.

- ❖ The mean of overall gap in technical skills was found to be 35.21.
- ❖ Block-wise analysis revealed that the rural youth from Kollengode block had the highest skill gap with a mean value of 34.42 whereas rural youth from Nenmara block had the lowest skill gap with a mean of 26.53.
- ❖ Three-fourth of the rural youth in the study area belonged to the category of medium level of skill gap in rice farming.

Factors affecting rural youth in acquiring skills in rice farming

- ❖ Farming experience, social participation, trainings received, extension agency contact, economic motivation, scientific orientation, knowledge level, information seeking behavior, achievement motivation and innovativeness were positively influencing rural youth in acquiring skills in rice farming at one per cent level of significance.
- ❖ Market orientation was found to influence skill level of rural youth at five per cent level of significance.
- ❖ Educational status alone had negative relationship with the skill level of rural youth.
- ❖ Age, land holding, annual income and occupational status showed non-significant relationship with the skill level of rural youth.
- ❖ The regression analysis revealed that the independent variables such as economic motivation, information seeking behavior and achievement motivation were found to be statistically significant with the perceived skills of rural youth in rice farming.
- ❖ It was observed that for a unit increase in the level of economic motivation, information seeking behavior and achievement motivation of rural youth, the probability to acquire above average skills in rice farming increases by 2.765, 2.462 and 2.638 units respectively.

Strategies to bridge the skill gap among youth in rice farming

- ❖ Skill development training programmes are to be organized at regular intervals on latest technologies. Farm Field Schools (FFS) and demonstrations may be conducted by involving rural youth locally to prove the economic viability of rice farming.
- ❖ Networking of rural youth and formation of rice farming youth groups will create a sense of social security and sustain their interest in rice farming.
- ❖ Extension programs can be organized to find out how best the participation of rural youth can be improved in rice farming apart from their main occupation.
- ❖ Institutional support for starting rice based enterprises or value-addition enterprise may be provided to rural youth to enhance income-generating opportunities for youth.
- ❖ The awareness about ICT initiatives and effective usage of social media tools for improving the skill level of youth in rice farming may be explored further.
- ❖ Consorted efforts may be initiated to attract youth in rice farming through skill development programs of the central and state government schemes.

Future line of work

- ❖ Skill gap with respect to rural youth cultivating diversify crops and allied sectors in the state have to be studied.
- ❖ Similar studies can be taken in other districts in Kerala with a larger sample size to generalize the results.
- ❖ Descriptive study can be formulated in future to understand the skill gap.
- ❖ This study can be repeated after a period of five years to assess the prevailing skill gap.

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Appendices

APPENDIX I



Kerala Agricultural University
CENTRAL TRAINING INSTITUTE
Mannuthy P.O., Thrissur, Kerala 680651

Email: cti@kau.in Tel: 04872371104



Mannuthy,
13.02.2021

Dr. S. Helen
Professor and Head
Major Advisor
Email: helen.s@kau.in
Mobile No: 9446142552

Dear Sir/Madam,

I would like to bring to your kind notice that Ms. Thenmozhi C. (2019-11-027) is undertaking a research study as a part of her Post-Graduate programme entitled 'Skill gap analysis among rural youth in rice farming' under my guidance. The main objectives of her study is to identify the various occupational preferences of rural youth, assess the skill gap among rural youth in rice farming, find out the factors influencing rural youth in acquiring skills in rice farming and suggest strategies to bridge the skill gap among rural youth in rice farming.

Considering your vast knowledge and experience, we request you to be a judge for rating the relevancy of the variables enlisted in the enclosed appendix. I request you to indicate the appropriate variables to be included in the study by marking (✓) in the relevant column. You can also suggest variables that you feel important for the study and also rate them under the appropriate column.

With the utmost concern of your busy schedule, I request you to spare your valuable time for us. Your kind response will help us to complete the study in time.

Thanking you

Yours faithfully,
Sd/-
S. Helen

Title of the study: Skill gap analysis among rural youth in rice farming

Objectives:

1. To identify the various occupational preferences of rural youth
2. To assess the skill gap among rural youth in rice farming
3. To find out the factors influencing rural youth in acquiring skills in rice farming
4. To suggest strategies to bridge the skill gap among rural youth in rice farming

A. Operationalization of independent variables

The following independent variables are identified for the study based on the available literature. Please (✓) mark the relevancy of the variables in terms of MOR – Most Relevant, MR – More Relevant, R – Relevant, LR – Less Relevant and LER – Least Relevant against the appropriate column.

Sl. No.	Variables	MOR	MR	R	LR	LER
1	Age: refers to the number of years completed by the rural youth at the time of interview					
2	Gender: implies the sex category of rural youth					
3	Marital status: refers to the status of rural youth whether he/she is married or unmarried					
4	Educational status: refers to the formal education obtained by the rural youth					
5	Family size: refers to the number of individuals residing in a household of rural youth					
6	Family type: refers to the type of family as either nuclear or joint family					
7	Land holding: refers to the extent of land area actually possessed by the rural youth					
8	Farming experience: refers to the years of experience in rice farming by rural youth					

9	Farm power possession: refers to the agricultural implements and machineries possessed by the rural youth					
10	Livestock possession: refers to the number of livestock owned by the rural youth					
11	Occupation: defined as a means of livelihood or profession of the rural youth					
12	Parental occupation: refers to the occupation of the rural youth's parents					
13	Annual income: refers to the total income earned annually by the family of the rural youth from agriculture and allied occupational components					
14	Social participation: refers to the extent of involvement of the rural youth in formal and informal social organizations as a member or as an office bearer					
15	Trainings received: refers to the number of trainings received by the rural youth on farming and allied activities					
16	Extension agency contact: refers to the frequency of contact made by the rural youth with extension agencies or extension personnel to secure information regarding farm activities					
17	Extension participation: refers to the participation of rural youth in different extension activities like meetings, seminar etc. organized by various agencies					
18	Mass media utilization: refers to the frequency of utilization of various mass media like TV, radio, newspaper, farm magazine etc. by rural youth					
19	Economic motivation: refers to the extent to which rural youth is oriented towards the achievement of maximum economic ends such as maximization of farm profits					

20	Scientific orientation: refers to the extent to which rural youth is oriented towards scientific methods of farming					
21	Credit orientation: refers to the extent of orientation of rural youth towards sources of credit, use and its repayment					
22	Knowledge level of rural youth in rice farming: refers to the information possessed by rural youth regarding scientific cultivation of crops					
23	Information seeking behavior: refers to the behavior of rural youth in relation to sources and channels of information, consisting of active as well as passive information seeking and usage					
24	Competition orientation: refers to the degree to which rural youth is oriented to place himself in a competitive situation in relation to others for projecting his/her excellence in farming					
25	Achievement motivation: refers to the extent to which the rural youth is oriented towards achievement in farming activities					
26	Cosmopolitaness: refers to the degree to which the rural youth is oriented outside his immediate social system					
27	Innovativeness: refers to the degree to which the rural youth is relatively earlier in adopting new ideas than other members of his social system					
28	Market orientation: refers to the degree to which the rural youth is oriented towards marketing to obtain reasonable gains from selling the produce					
29	Leadership ability: refers to the degree to which rural youth can influence the action of other individuals					
30	Possession of ICT tools: refers to the possession of modern electronic gadgets such as laptop <i>etc.</i>					
31	Others (please specify)					

B. Operationalization of dependent variables

The following variables are identified for the study based on the available literature. Please (✓) mark the relevancy of variables in terms of MOR - Most Relevant, MR - More Relevant, R - Relevant, LR - Less Relevant and LER - Least Relevant.

S.No	Variables	MOR	MR	R	LR	LER
A	General skills					
1	Positive attitude: refers to the mental position of rural youth with regard to a fact or state to accept in a positive way					
2	Self-motivation: being self-motivated to accomplish a goal					
3	Self-confidence: refers to self-assurance in one's personal judgment, ability, power etc. for better performance in the work					
4	Cognitive skills: refers to the ability to gain meaning and knowledge from experience and information and to successfully solve the problems					
5	Others (please specify)					
B	Managerial skills					
1	Problem solving skills: refers to the capability to find solutions to difficult or complex issues					
2	Decision making skills: refers to selecting the best alternative from the available options to accomplish a defined objective					
3	Entrepreneurial skills: refers to the skills possessed by rural youth in farm business activities					
4	Marketing skills: skills related to identifying customers, demands, negotiation, sales and ethical guidelines					
5	Creativity: use of imagination to create something new or inventive in doing a job					

6	Critical thinking skills: refers to objective analysis and evaluation of an issue to make a better judgment					
7	Risk taking ability: refers to the degree to which rural youth is oriented towards encountering risks and uncertainty in various farming situations					
8	Farm record keeping and maintenance: refers to making a note of day to day activities of the farm which enables the rural youth to plan and manage the farm efficiently					
9	Labor management: refers to the ability of the rural youth to regulate the workforce					
10	Time management: refers to the ability of rural youth to plan and exercise conscious control of time spent on farm activities to increase effectiveness, efficiency and productivity					
11	Others (please specify)					
C	Communication skills					
1	Information management skills: refers to collecting, storing, processing and use of information for specific tasks					
2	Written communication skills: refers to the process of conveying a message by rural youth through the written symbols					
3	Listening skills: refers to the ability to accurately receive and interpret messages by rural youth in the communication process					
4	Reading skills: refers to the ability of rural youth to decode and understand from a written text					
5	Interpersonal skills: ability to communicate or interact with fellow farmers and extension personnel in the organization					
6	Multilingual ability: refers to the ability to deal with more than one language in different situations with different people					

7	ICT skills: ability to use information and communication technologies to find, evaluate, create and communicate information requiring both cognitive and technical skills					
8	Others (please specify)					
D	Technical skills					
	Crop production skills <ul style="list-style-type: none"> a) Land preparation b) Operation of machinery c) Selection of varieties for appropriate season d) Selection of seeds and sowing e) Nursery management f) Transplanting g) Time of sowing/ transplanting h) Judicious use of inputs i) Intercropping j) Water management k) Integrated nutrient management l) Integrated pest and disease management m) Intercultural operations n) Harvesting o) Post-harvest technology p) Value addition in rice 					

Name:

Designation:

Signature:

Date:

APPENDIX II

Relevancy indices of independent variables

Sl. No.	Variables	Relevancy indices
1	Age	87.33*
2	Gender	86.66*
3	Marital status	63.33
4	Educational status	91.33*
5	Family size	72
6	Family type	61.33
7	Land holding	87.33*
8	Farming experience	89.33*
9	Farm power possession	86.66*
10	Livestock possession	78
11	Occupation	85.33*
12	Parental occupation	70
13	Annual income	85.33*
14	Social participation	87.33*
15	Trainings received	94.66*
16	Extension agency contact	91.33*
17	Extension participation	80
18	Mass media utilization	76
19	Economic motivation	93.33*
20	Scientific orientation	90.66*
21	Credit orientation	82
22	Knowledge level in rice farming	94.66*
23	Information seeking behaviour	86.66*
24	Competition orientation	80
25	Achievement motivation	93.33*
26	Cosmopolitaness	76.66
27	Innovativeness	94.66*
28	Market orientation	88*
29	Leadership ability	80
30	Possession of ICT tools	86.66*

* Variables selected for the study

APPENDIX III

Relevancy indices of dependent variables

Sl. No.	Variables	Relevancy index
1	Occupational preferences of rural youth	86.66*
2	Skill gap analysis	
A	General skills	
	a. Positive attitude	90.66*
	b. Self-motivation	94*
	c. Self-confidence	92*
	d. Cognitive skills	87.33*
B	Managerial skills	
	a. Problem solving skills	89.33*
	b. Decision making skills	94.66*
	c. Entrepreneurial skills	88.66*
	d. Marketing skills	88.66*
	e. Creativity	78.66
	f. Critical thinking skills	80
	g. Risk taking ability	85.33*
	h. Farm record keeping and maintenance	83.33
	i. Labor management	84
	j. Time management	88*
C	Communication skills	
	a. Information management skills	86.66*
	b. Written communication skills	70
	c. Listening skills	86.66*
	d. Reading skills	78.66
	e. Interpersonal skills	92*
	f. Multilingual ability	70
	g. ICT skills	86*
D	Technical skills	90.70*

* Variables selected for the study



KERALA AGRICULTURAL UNIVERSITY
COLLEGE OF AGRICULTURE, VELLANIKKARA, THRISSUR
DEPARTMENT OF AGRICULTURAL EXTENSION
“Skill gap analysis among rural youth in rice farming”
Interview schedule

Respondent No. []

1. General information

Name of the respondent:

Address:

Gender: Male/ Female

Contact No:

2. Socio-economic profile

1) Age 18 - 23 years 24 - 29 years 30 - 35 years

2) Educational status

Illiterate Primary High school

Higher secondary Graduate Post-graduate

3) Land holding (Area in acres)

Sl. No.	Particulars	Wetland	Garden land
1	Owned		
2	Leased		
3	Total land		

4) Farming experience

Less than 5 years 5-10 years More than 10 years

5) Farm power possession

Sl. No	Items	Number	Value (Rs.)
1	Power tiller		
2	Tractor		
3	Sprayer/ Duster		
4	Paddy thresher		
5	Others (specify)		

6) Occupation

Farming as sole profession Farming + Business

Farming + Allied activities Farming + Government service

Agricultural labor Farming + Private service

Others (specify) _____

7) Annual income

Income from rice farming alone _____

Income from others sources _____

Total income _____

8) Social participation

Sl. No	Type of Organization	Form of membership		Frequency of participation		
		Office bearer	Member	Regular	Occasional	Never
1	Grama Panchayat					
2	Youth club					
3	Padashekaram					
4	Co-operative society					
5	Others (specify)					

9) Training received

Have you attended any training? Yes/ No

If yes, mention the following

Sl. No.	Name of the training	Name of the agency provided training	Duration of the training

11) Do you have internet access? Yes/ No

11) Possession of ICT tools

Computer Laptop Smartphone Mobile phone
 Tablet Radio Smart TV Modem/Wi-Fi

12) Extension agency contact

a) Are you in contact with extension personnel? Yes/ No

b) If yes, how often do you have contact with the following personnel?

Sl. No.	Extension personnel	Frequency of contact		
		Regularly	Occasionally	Never
1	Agricultural Officers and Agricultural Assistants			
2	Scientists			
3	NGOs/Private consultancy			
4	Others (specify)			

c) Indicate the purpose

To get technical guidance To avail subsidy and agricultural implements
 To avail input assistance Non-agricultural purpose
 Any other (please specify) _____

13) Economic motivation

Please indicate your response in the appropriate column by a tick (✓) mark (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree)

Sl. No.	Statements	SA	A	UD	DA	SDA
1	I should work towards high yield and economic profit					
2	Those who earn a maximum profit are the most successful ones					
3	I should try new farming ideas which may earn more profit					
4	I should adopt new technology in place of traditional ones to increase profit					
5	I must earn for living but the most important thing in life cannot be determined in economic terms					

14) Scientific orientation

Please indicate your response in the appropriate column by a tick mark (✓) (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree)

Sl. No.	Statements	SA	A	UD	DA	SDA
1	New skills in farming give better results to me than the old one					
2	The way of farming by our forefathers is still the best way to farm today					
3	Though it takes time for me to learn new skills in farming, it is worth the efforts					
4	I experiment with new methods in rice farming					
5	The traditional method of farming has to be changed to raise the farmer's level of living					

15) Knowledge level of rural youth in rice farming

- a. Name a high yielding variety of rice:
- b. What is the seed rate in transplanted rice?
- c. Name a fungicide used for seed treatment:
- d. What is the recommended dosage of fertilizer for rice?
- e. What are the stages of growth of rice at which fertilizers are applied?
- f. Name any one important pest of rice and mention its control measure:
- g. Name any one important disease of rice and mention its control measure:
- h. Name any weedicide used for the control of weeds in rice field:
- i. Why do we apply lime?
- j. What is the duration of the rice variety "Jyothi"?

16) Information seeking behavior

Indicate whom do you contact for getting information related to rice farming by a tick (✓) mark in the appropriate column (R-Regularly, O-Occasionally, N-Never)

Sl. No	Information source	Frequency of use			Perceived credibility		
		R	O	N	Low	Medium	High
1	Mass media						
	a) Radio						
	b) Newspaper						
	c) Agricultural magazine						
	d) Television						
	e) Smartphone with Internet						

2	Informal sources						
	a) Friends and relatives						
	b) Neighbors						
	c) Family members						
	d) Progressive farmers						
3	Other sources						
	a) Agricultural exhibitions						
	b) Group meetings						
	c) Seminar						
	e) Farmers tour						
4	Others (specify)						

17) Achievement motivation

Please give your degree of consensus to each of the following statements (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree)

Sl.No.	Statements	SA	A	UD	DA	SDA
1	I try very hard to improve on my past performance at work					
2	I want to know how I am progressing as I complete tasks					
3	I direct my efforts towards achieving a goal					
4	I am not satisfied in completing a difficult task					
5	I don't look for an opportunity to show my excellence in crisis situation					
6	I direct my efforts towards avoiding failure					

18) Innovativeness

Please indicate your response by marking tick (✓) in the appropriate column (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree)

Sl.No.	Statements	SA	A	UD	DA	SDA
1	I adopt an improved practice in rice farming as soon as it is brought to my knowledge					
2	After seeing the success of other rural youth, I would adopt an improved practice in rice farming					
3	I would prefer to wait for others to try out an improved practice in rice farming					
4	I would choose the traditional way of doing things					

	than to go with new methods in farming					
5	I believe there are always new and better ways of doing things					
6	I would feel restless unless I try out an innovative method which I have come across					

19) Market orientation

Please indicate your response by marking tick (✓) in the appropriate column (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree)

Sl.No.	Statements	SA	A	UD	DA	SDA
1	I get a better price by processing my produce					
2	I get a good price by eliminating the middle man					
3	I sell my produce to the nearest market irrespective of the price					
4	Market news are not useful to me					
5	I purchase inputs from shops where my friends or relatives are purchasing					
6	Co-operatives help me to get a better price for my produce					

3. Occupational preferences of rural youth

Please indicate your response by a tick mark (✓) in the appropriate column

Sl. No	Occupation	Most preferred	More preferred	Preferred	Less preferred	Not preferred
1	Crop production					
2	Fisheries					
3	Dairy farming					
4	Poultry farming					
5	Duckery					
6	Apiculture					
7	Sericulture					
8	Vermicomposting					
9	Government service					
10	Private service					
11	Business					

12	Plant nursery					
13	Banking sector					
14	Sales and marketing service					
15	Mushroom enterprise					
16	Value-addition enterprise					
17	Small scale industry					
18	Others (specify)					

4. Skill gap analysis

4. 1. General skills

4. 1.1. Positive attitude

Please indicate your response by marking tick (✓) (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree) in the appropriate column

Sl.No.	Statements	SA	A	UD	DA	SDA
1	I feel accountable for the problems that would occur in rice farming					
2	I have the ability to cope with challenges					
3	I always put my best effort into the farming activities					
4	I am not conscious about my work quality					
5	I am willing to seek further knowledge and skills in rice farming					

4.1.2. Self-motivation

Please indicate your response by marking tick (✓) in the appropriate column (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree)

Sl.No.	Statements	SA	A	UD	DA	SDA
1	I have a strong desire to achieve more					
2	I am satisfied with my performance in rice farming					
3	I am not able to do things as most other people do					
4	I feel that I have several good qualities					
5	I set specific goals and try hard to attain it					

4.1.3. Self-confidence

Please indicate your response by marking tick (✓) in the appropriate column (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree)

Sl.No.	Statements	SA	A	UD	DA	SDA
1	I am confident in my ability to use the newly learned skill in rice farming even in difficult situations					
2	I feel that I am capable of performing well in farming as other people					
3	I get discouraged easily					
4	I feel that no obstacle can stop me from achieving the final goal					
5	I initiate my duties on my own without any facilitation from others					

4.1.4 Cognitive skills

Please indicate your response by marking tick (✓) in the appropriate column (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree)

Sl.No.	Statements	SA	A	UD	DA	SDA
1	I read newspaper and magazines regularly to update my knowledge and skills in rice farming					
2	I am capable of sharing whatever skills I possess with other people					
3	I have the ability to recall and recognize things with accuracy					
4	I am interested in getting a correct and prompt information					
5	I don't respect the advice given by an expert					

4.2 Managerial skills

4.2.1. Problem solving skills

Please indicate your response by marking tick (✓) in the appropriate column (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree)

Sl.No	Statements	SA	A	UD	DA	SDA
1	I can effectively handle problems in rice farming					
2	I can analyze the possible cause underlying the problem					
3	I consider the circumstances in which the problem					

	had occurred to resolve it quickly					
4	I don't think of alternative approaches to solve the problem					
5	I take precautions to ensure that the problem doesn't recur					
6	I seek advice from family members than try to solve problems by own					

4.2.2. Decision making skills

Please indicate your response by marking tick (✓) in the appropriate column (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree)

Sl.No.	Statements	SA	A	UD	DA	SDA
1	When faced with a new problem, I spend a lot of time trying to find out a solution					
2	I did not have any confusion while taking the decision					
3	I am ready to change my ideas when convinced with an expertise solution					
4	I am good at making timely decisions					
5	I consider all possible alternatives before arriving at a decision related to rice farming					
6	It is difficult for me to make a decision in rice farming					

4.2.3. Entrepreneurial skills

Please indicate your response by marking tick (✓) in the appropriate column (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree)

Sl.No.	Statements	SA	A	UD	DA	SDA
1	When others see problems, I see an opportunity					
2	Once I start a work, I pursue despite challenges					
3	I don't start anything without a clear vision and plan of action					
4	I am curious to learn new aspects and will apply my skills to develop things differently					
5	I am not flexible and adaptive to the changing scenario					
6	I can easily find many ways to satisfy a need					

4.2.4. Marketing skills

Please indicate your response by marking tick (✓) in the appropriate column (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree)

Sl.No.	Statements	SA	A	UD	DA	SDA
1	I try to be the first or the best in my area of competency					
2	I know how to sell my produce in a better way					
3	I can negotiate a better price for my produce					
4	I believe making use of new technology is an investment to earn profitable returns					
5	I am good at estimation and budgeting					
6	I sell my produce considering the prevailing demand					

4.2.5. Time management

Please indicate your response by marking tick (✓) in the appropriate column (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree)

Sl.No.	Statements	SA	A	UD	DA	SDA
1	I make a list of activities that I have to do each day					
2	I keep deadlines for myself					
3	I set and keep priorities					
4	I need to improve the way in which I can manage my time more effectively					
5	I make a constructive use of my time					
6	I pursue my activities in accordance with crop calendar					

4.2.6. Risk taking ability

Please indicate your response by marking tick (✓) in the appropriate column (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree)

Sl.No.	Statements	SA	A	UD	DA	SDA
1	I grow a large number of crops to avoid greater risks involved in rice farming					
2	To achieve higher returns, it is necessary to take more risk					
3	It is good for me to take risks when I know my chance of success is very high					

4	It is better for me to try new skills in rice farming when most other rural youth in the locality have done it with success					
5	Trying an entirely new skill in farming involves greater risk but it is worth					

4.3. Communication skills

4.3.1. Information management skills

Please indicate your response by marking tick (✓) in the appropriate column (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree)

Sl.No.	Statements	SA	A	UD	DA	SDA
1	I decide the sources of information based on their credibility					
2	I have the skill of collecting the information more specifically					
3	I don't take the responsibility of information confirmation					
4	Receiving need based information for skill development gives me satisfaction					
5	I make several interpretations while analyzing the information					

4.3.2. Listening skills

Please indicate your response by marking tick (✓) in the appropriate column (SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SDA-Strongly Disagree)

Sl.No.	Statements	SA	A	UD	DA	SDA
1	I usually maintain an eye-to-eye contact with people					
2	I can confidently summarize what other person had conveyed					
3	I respect other person's point of view					
4	I do not pay attention to others words					
5	I can easily grasp what others try to communicate					

4.3.3. Interpersonal skills:

Please indicate your response by marking tick (✓) in the appropriate column (SA-Strongly Agree, A-Agree, UD-Uncecided, DA-Disagree, SDA-Strongly Disagree)

Sl.No.	Statements	SA	A	UD	DA	SDA
1	I have the ability to build rapport with others					
2	I am capable to co-operate and work with other people					
3	I maintain a good relationship with my fellow rural youth					
4	I can effectively interact with buyers and associates					
5	I can easily understand others situation from their viewpoint					

4.3.4. ICT skills

Please indicate your response regarding the following statements by marking tick (✓) in the appropriate column

Sl.No.	Statements	Yes	No
1	I would ask my queries to the agricultural experts <i>via</i> . Phone call, SMS, e-mail, Whatsapp <i>etc.</i>		
2	I participate in online/live programs and discussions over different media viz. YouTube, Zoom, Google Meet <i>etc.</i>		
3	I can download agricultural information <i>via</i> internet and also read e-magazine <i>etc.</i>		
4	I will interact over social media networks viz. WhatsApp, Facebook		
5	I browse different web portals such as Kissan Kerala and access mobile applications like Farm Extension Manager, Mannu <i>etc.</i>		

4.4. Technical skills

Please indicate your response regarding the following by marking tick (✓) in the appropriate column (F-Fully, P-Partially, N-None).

I have the skill for doing the following activities

Sl.No.	Crop production skills	F	P	N
1	Land preparation			
2	Operation of machinery			
3	Selection of varieties for the appropriate season			

4	Selection of seeds and sowing			
5	Nursery management			
6	Transplanting			
7	Time of sowing/ transplanting			
8	Judicious use of inputs			
9	Water management			
10	Integrated nutrient management			
11	Integrated pest and disease management			
12	Intercultural operations			
13	Harvesting			
14	Post-harvest technology			
15	Value addition in rice			
16	Crop rotation			

Thank you

**SKILL GAP ANALYSIS AMONG RURAL YOUTH IN RICE
FARMING**

By

THENMOZHI C

(2019-11-027)

ABSTRACT OF THE THESIS

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DEPARTMENT OF AGRICULTURAL EXTENSION

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Abstract

The present scenario of agriculture demands a competent youth. On contrary, there is decreasing participation of youth in agriculture over time due to lack of appropriate knowledge, adequate skills, perceived low status *etc.* Hence, there is a need to focus on improving the skills of rural youth involved in rice farming for enhancing the agricultural production. The present study was conducted among 120 rural youth engaged in rice farming from four blocks of Palakkad district *viz.* Kuzhalmannam, Kollengode, Nenmara and Chittur.

Majority of the rural youth respondents were males in the age group of 30 to 35 years. Majority of the rural youth were holding less than one hectare of land with five to ten years of experience in farming. Majority of the rural youth were graduates and were engaged in farming as well as employed in the private sector with an income of rupees 1 to 3 lakhs per annum. Majority of the rural youth possessed a sprayer and almost all the respondents owned a smartphone. One-third of the rural youth had received trainings on farming and allied activities. More than half of the rural youth had medium level of social participation, scientific orientation, information seeking behaviour, innovativeness and market orientation. More than two-third of the respondents had medium level of economic motivation, achievement motivation and knowledge level in rice farming.

The most preferred occupation by majority of rural youth in Palakkad district was government service. The least preferred occupation by rural youth was taking up the sericulture sector. Majority of the youth in Kuzhalmannam block preferred government service. The most preferred occupation by the rural youth in Kollengode block was farming. Most of the rural youth in Nenmara block opted for business. Majority of the youth residing in Chittur block preferred private service. There was a high degree of concordance among rural youth from four blocks of Palakkad district in preferring their occupation.

The existing skill level of rural youth in rice farming was 69.73. The overall general skill of rural youth was 73.99. The overall managerial skill of rural youth in rice farming was 71.97. The overall communication skill of rural youth was 68.18. The overall technical skill level of rural youth in rice farming was 64.79.

The overall skill gap among rural youth involved in rice farming was 30.27. The highest skill gap was found among rural youth in technical skills with a mean of 35.21. The overall gap in general skills among rural youth was 26.01. Among the general skills, learning skills had the highest gap with a mean value of 28.63. The overall gap in managerial skills among rural youth was 28.03. Time management had the highest skill gap among the managerial skills with a mean value of 30.97. The overall gap in communication skills among rural youth was 31.82 in which ICT skills topped the list with a mean value of 48.33.

Block-wise analysis revealed that rural youth from Kollengode block had the highest skill gap with a mean rank of 34.42 whereas rural youth from Nenmara block showed the lowest skill gap with a mean rank of 26.53. Three-fourth of the rural youth in the study area belonged to the category of medium level of skill gap in rice farming.

Farming experience, social participation, trainings received, extension agency contact, economic motivation, scientific orientation, knowledge level, information seeking behavior, achievement motivation, innovativeness and market orientation had positive and significant relationship with the skill level of rural youth in rice farming. Educational status had a negative association with the skill level of rural youth in rice farming. For every one unit increase in the level of economic motivation, information seeking behavior and achievement motivation of rural youth, the probability to acquire above average skills in rice farming increases by 2.765, 2.462 and 2.638 units respectively.

The strategies to bridge the skill gap among the rural youth in rice farming includes organizing skill-oriented training programmes at regular intervals on latest technologies. Networking and formation of rice farming youth groups would create a sense of social security and sustain their interest in rice farming. Institutional support and incentives for starting rice-based enterprises may be provided to enhance the income-generating opportunities in rice farming. Awareness about ICT initiatives in agriculture and effective usage of social media tools would improve their skills in rice farming. Consorted efforts may be initiated to retain youth in rice farming through effective utilization of skill development programmes of the central and state governments.