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# Determinants of Skill Levels of Farm Youth with regard to Agripreneurship: A Multinomial Regression Approach

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ABSTRACT

This study investigated various determinants of the differential level of skill as perceived by farm youth engaged in agripreneurship. The existing agripreneurial skill levels were delineated by developing a composite index constituting of 5 skill dimensions. Purposive sampling was adopted to select the rural youth belonging to farming background and involved in agripreneurship for higher income in five districts of Odisha representing five different agro-climatic zones. A total of 250 farm youth was sampled from the selected 10 blocks. The findings of the study revealed that, annual income from primary occupation, agripreneurial training, social media exposure and agripreneurship experience have significantly affected the existing level of skill possessed by farm youth with regard to agripreneurship. The findings affirm the need for extension personnel to understand the existing skill level, capacities, abilities of farm youth along with the factors determining them in order to create awareness and build capacities required for agripreneurship.

## INTRODUCTION

Entrepreneurship has been widely acknowledged as an effective means for economic transformation (Kasabov, 2016; Bhuyan & Ivlevs, 2019). In present times, with the viability of small and marginal scale farming dampening due to the rising cost of cultivation, declining market returns and degradation of natural resources, entrepreneurship development in agriculture has become an important area of research as well as policy and development initiative. Agripreneurship development focuses on creating an exciting breed of farmers with core business skills in undertaking farm-based businesses for enhancing their income, who undertakes a variety of activities in agriculture sector in order to be an entrepreneur. The term agripreneurship is defined as generally sustainable, community oriented and directly marketed agriculture. Sustainable agriculture denotes a holistic, system-oriented approach to farming that focuses on social, economic and environmental process.

A shift from agriculture to agribusiness is an essential pathway to revitalize Indian agriculture. The demands, opportunities, and challenges of the changing business environment in the agricultural industry has necessitated farmers to become entrepreneurial (Sinyolo & Mudhara, 2018). The combined effects of factors such as market liberalisation, climate change, increased dominance and penetration of modern food chains have forced producers to develop new skills and capabilities in order to survive or remain competitive (Díaz-Pichardo et al., 2012; Pindado & Sánchez, 2017). Entrepreneurial options that farmers have employed include implementing selective product specialisation, enterprise diversification, market orientation, production up-scaling, product development, processes innovation, and vertical integration (McElwee & Bosworth, 2010). According to Hansson et al., (2013), the definition of agripreneurship also incorporates other income-generating strategies such as off-farm employment and multiple business holdings. Due to the evolving production and business environment in the twenty-first century, efforts to enhance the participation of younger generations in agriculture have been increasing.

Rapid population growth in developing countries like India is projected to lead to an unprecedented rise in number of youths

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entering the labour market in the next few years. The empowerment of youth and their role in agriculture, or the agri-food sector, has received increased interest as a potential pathway to provide employment opportunities for young job seekers. (FAO et al., 2014). Encouraging agripreneurship in rural area among the farm youths would be instrumental in changing the face of the country as majority of the population still lives in rural India. Many young farmers have taken up agriculture seriously and have been evolving several farm innovations in an effort to solve their specific farm problems. Engagement of farm youths as young agripreneurs is critical for livelihoods in rural areas where millions of youth are unemployed and face many barriers in agriculture sector (Santiago et al., 2017). The current state of global economic meltdown, economic crises or recession around the world has created the need to develop proper agripreneurial skills or training among youth for proper opportunity utilisation in order to turn economy capacity towards more productive youth. The skill of the youth entrepreneur might be improved through conducting effective capacity building programmes related to the sector where they lack required expertise (Arunkumar et al., 2021). Many youths of nowadays possess business ideas but only few have the capacity and ability to turn it into viable businesses (Shane et al., 2012). So, it is essential to understand the skillsets, capacities, abilities and the determinants of the greater skill levels of farm youth with regard to agripreneurship.

## METHODOLOGY

It is important to assess the profile of the farm youth who are already engaged in agripreneurship and analyse the degree of existing agripreneurial skills possessed by them. The study was quantitative and descriptive analytical in nature, descriptive in terms of proper identification of facts, profile and skill level at field setting, non-experimental in terms of control of variables and quantitative in terms of data collection method. The experts having notable work in terms of publications and mentoring in areas of youth agripreneurship were considered for delineating and finalising the indicators of agripreneurial skills for farm youth in terms of their relevancy. The youth in the age range of 15-34 years constitute the research population who belongs to farming background in rural areas. The state of Odisha comprised of 10 agro-climatic zones which are broadly classified into two distinct regions viz. Highland region and coastal region. In order to have a proper representative sample of entire Odisha, two highland regions and two coastal regions from different directions of Odisha and one region which is a combination of highland and coastal region was randomly selected. Five districts were selected randomly from five different agro-climatic zones. These are Kalahandi (Western undulating zone), Mayurbhanj (North central plateau), Ganjam (North-Eastern ghats), Puri (East and south eastern coastal plains) and Balasore (North eastern coastal plains). Two blocks were selected from each of the five districts through simple random sampling. Thus, a total of 10 blocks namely Junagarh and Dharmagarh (Kalahandi), Chikiti and Digapahandi (Ganjam), Pipili and Sakhigopal (Puri), Badasahi and Gopabandhu nagar (Mayurbhanj), Balasore Sadar and Remuna (Balasore) were selected. Twenty-five respondents were selected from each of the ten blocks purposively through consultation and discussion with field level extension personnel at block level. Thus, the sample size is composed of 250 farm youth representing five different agro-climatic zones of the Odisha state. The farm youths already engaged in any agripreneurial enterprise for enhancing their income were considered for the study. The agripreneurial enterprise includes horticulture, mushroom cultivation, poultry, fishery, animal husbandry, integrated farming system, apiculture, vermicomposting.

An interview schedule was used to check the actual status of farm youth prevalent in terms of agripreneurial skills by developing a composite index. The index consisted of 5 agripreneurial skill dimensions and each comprising of five indicators. A total of 25 indicators forms a part of the index which was used to assess the existing skill level of farm youth. The face and content validity of the questionnaire was confirmed by an expert panel. To estimate the reliability of the questionnaire, a pilot study was carried out on 30 non-sample farm youths outside the research area. Then, the coefficient of Cronbach's alpha was calculated for different sections of the questionnaire to be 0.71–0.91, showing the acceptable reliability of the research variables. Finally, the collected data were analyzed by multinomial logistic regression analysis in the $SPSS_{21}$ software package where the explanatory variables were age, agripreneurship experience, training, social media exposure, agripreneurship income while dependant variables were low, medium and high skill level. In the developed index, the index scores under each indicator were categorized into low, medium and high based on the range method.

## RESULTS AND DISCUSSION

The agripreneurial skills which were categorised into five different types in the developed index viz. personal skills, creative thinking skills, agri-business management skills, psychological and strategic thinking were assessed among the 250-farm youth. The personal skills of farm youth essential for the success of agricultural enterprise, taken were perseverance, community leadership, effective communication, network building and lifelong learning which were essential for the success of agricultural enterprise. The results in Table 1 revealed that a considerable majority (58.80%) of farm youth were having low skill level in perseverance. This is mainly because young agripreneurs possess lot of innovative business ideas for success in their farm but they lack proper skills to continue their enterprise in long run and to manage it after facing obstacles. Due to their proactiveness and involvement in community welfare activities, young agripreneurs possess greater degree of leadership activities, this is significantly visible with 58 per cent of youth in higher level. Communicating effectively with stakeholders is a critical ability for entrepreneurial success. This is where many farm youth lag with only 8.4 per cent in higher category and 22 per cent with low skill level. Large number of farm youth possess higher skill level in developing working relationship for success of enterprise viz. network building and ability to learn from everyday experiences viz. lifelong learning with 58 per cent and 56 per cent respectively.

Farm youth are extremely important target group for agricultural development perspective in rural areas, as their dissociation from farming will deprive the sector from next generation successor. So, it is essential to understand the constraints

**Table 1.** Distribution of the skill level of the farm youth in terms of agripreneurial skill (n=250)

| S.No. | Agripreneurial skills | Low | Medium | High |
|---|---|---|---|---|
| *I* | *Personal Skills* | | | |
| 1 | Perseverance | 147 (58.80) | 68(27.20) | 35(14.00) |
| 2 | Community leadership | 46(18.40) | 59(23.60) | 145(58.00) |
| 3 | Effective communication | 55(22.00) | 174(69.60) | 21(8.40) |
| 4 | Network building | 39(15.60) | 66(26.40) | 145(58) |
| 5 | Lifelong learning | 43(17.20) | 66(26.40) | 141(56.40) |
| 6 | Creative Thinking skill | | | |
| 7 | Innovativeness | 64(25.6) | 133(53.20) | 63(25.2) |
| 8 | Analytical and critical thinking | 64(25.6) | 142(56.80) | 44(17.60) |
| 9 | Idea generation | 100(40) | 125(50) | 25(10) |
| 10 | Decision making | 38(15.2) | 57(22.8) | 155(62) |
| 11 | Problem solving | 77(30.8) | 95(38) | 78(31.2) |
| *II* | *Agri-business management skill* | | | |
| 1 | Agri-logistics management | 34(13.6) | 210(84) | 6(2.4) |
| 2 | Fund management | 74(29.6) | 18(7.2) | 158(63.2) |
| 3 | Negotiation | 62(24.8) | 34(13.6) | 154(61.6) |
| 4 | Capturing market | 73(29.2) | 135(54) | 42(16.8) |
| 5 | Risk management | 69(27.6) | 122(48.8) | 59(23.6) |
| *III* | *Psychological skill* | | | |
| 1 | Motivation | 52(20.8) | 28(11.2) | 170(68) |
| 2 | Internal locus of control | 56(22.4) | 127(50.8) | 67(26.8) |
| 3 | Resilience | 64(25.6) | 29(11.6) | 157(62.8) |
| 4 | Self-efficacy | 55(22) | 88(35.2) | 107(42.8) |
| 5 | Agripreneurial orientation | 43(17.2) | 66(26.4) | 141(56.4) |
| *IV* | *Strategic thinking skill* | | | |
| 1 | Opportunity recognition | 54(21.6) | 50(20) | 146(58.4) |
| 2 | Agribusiness planning | 78(31.2) | 20(8) | 152(60.8) |
| 3 | Demand forecasting | 62(24.8) | 83(33.2) | 105(42) |
| 4 | Vigilance | 55(22) | 12(4.8) | 183(73.2) |
| 5 | Information seeking | 2(0.8) | 182(72.8) | 66(26.4) |

*****Figures in parentheses represent percentages

faced by them with regard to agripreneurship. Entrepreneurship climate and enabling environment need to be created that will ignite the spirit of entrepreneurship among young entrepreneurs (Kobba et al., 2020). Multinomial logit (MNL) was used to determine the various determinants of differential level of skill among the farm youth with regard to agripreneurship in rural Odisha. In this multinomial regression analysis, the first category i.e., lower skill level was considered as the reference level. Statistical software SPSS 21 has been used to calculate the LOGIT coefficients and the results has been presented in the Table 2. The results of the MNL model indicates that different socio-economic factors viz. age, agripreneurship experience, training, social media exposure and annual income from primary occupation of farm youths affect the ability to perceive skill level with regard to agripreneurship. The estimated coefficients of multinomial logistic model provide only the direction of the effect of the independent variables on the dependent variables, and they do not represent the actual magnitude of change or probabilities. Thus, the marginal effect from MNL determines the expected change in probability of a particular outcome being made with respect to unit change in independent variable are discussed.

From Table 2, it is depicted that in case of medium skill level category, training related to agripreneurship and social media exposure were significantly (both at $p<0.01$) contributing to medium skill level. It also clearly revealed that, with every one unit increase in training related to specific agripreneurship, the odds ratio to have medium skill level compared to lower skill level increases by 2.351 times. Generally, it is also pertinent that greater number of training exposure related to agripreneurship enhances the ability of the farm youth through capacity building. The odds ratio of farm youth possessing medium skill level increases by 0.491 times with every one unit increase in exposure to social media compared to low skill level category. In the present digital age, social media have grown into immense importance for various information needs of farm youth and has huge potential to act as an essential tool for behavioral change. Additionally, farm youth get attracted to the innovative techniques in farming through social media and if they are effectively utilized, it can act as a boon for farm youth engaged in agripreneurship. Hence, it may be a cause of being a significant determinant. In case of high skill level, low level of annual income and medium level of annual income from the primary occupation significantly (both at $p<0.01$) contributed to high skill level. It was also found that, with one unit increase in low and medium level of annual income from primary occupation, the odds ratio to have higher skill level enhances by 0.007 times and 0.222 times respectively. Annual income from primary occupation acts as essential support in terms of much needed capital support for secondary source of income and to do well in agripreneurship. It was also observed that, agripreneurship experience was significantly (at $p<0.05$) contributing to the higher skill level. The table clearly reveals that increase of experience in agripreneurship by one unit increases the probability of a farm youth having higher skill level by 0.913 times. Generally, the farm youth gain their expertise with greater experience in agripreneurship and they attain much needed

**Table 2.** Estimated multinomial logit Coefficients of factors determining skill level of farm youth

| Skill Level | Explanatory Variables | B | Std. error | Sig. | Exp (B) | 95% Confidence interval for Exp (B) | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Upper |
| Medium | Intercept | 20.708 | 4.055 | .000 | | | |
| | Age | -.194 | 1.213 | .873 | .824 | 0.76 | 8.880 |
| | Agripreneurship experience | -.112 | .125 | .370 | .894 | 0.700 | 1.142 |
| | Training | .855 | .312 | .006 | 2.351* | 1.275 | 4.335 |
| | Social media exposure | -.711 | .251 | .005 | .491* | 0.300 | 0.803 |
| | Low agripreneurship income | -19.467 | 2.696 | .000 | 0 | 0 | 0 |
| | Medium agripreneurship income | -19.426 | 1.361 | .000 | 0 | 0 | 0 |
| High | Intercept | 22.750 | 1.491 | .000 | | | |
| | Age | .352 | .324 | .276 | 1.422 | 0.754 | 2.682 |
| | Agripreneurship experience | -.091 | .043 | .032 | .913** | 0.840 | 0.992 |
| | Training | .272 | .139 | .051 | 1.312*** | 0.999 | 1.723 |
| | Social media exposure | -.068 | .080 | .395 | .934 | 0.798 | 1.7 |
| | Low income (Primary occupation) | -4.967 | 1.202 | .000 | .007* | 0.001 | 0.074 |
| | Medium income (Primary occupation) | -3.836 | 1.120 | .001 | .022* | 0.002 | 0.194 |
| | Low income from agrienterprise | -22.446 | 1.762 | .000 | 0 | 0 | 0 |

*The reference category is lower level of skill*

* Significant at 10% level ** Significant at 5 % level *** Significant at 1% level

skill level with growing years of experience. In case of higher skill level farm youth, training contributes at 10% level of significance. With every one unit increase in training, the odds ratio of farm youth attaining higher skill level enhances by 1.312 times in comparison to the lower skill level. From these results, it may be concluded that capacity building efforts like training and social media exposure are major factors determining skill level of farm youth along with agripreneurship experience and annual income from primary occupation which provides much needed support to the agri-enterprise. Maurya et al., (2021) in their study also recommended that there is a need for special efforts to attract, train and retain the rural youth in agriculture as a whole by developing more favourable attitude towards agriculture by transforming and making it more agribusiness oriented, scientifically attractive and economically profitable. There is a necessity of hands on-training programmes which must be prioritized for rural youth and young agripreneurs through proper assessment of their training needs (Sajeev et al., 2021).

## CONCLUSION

From the study it can be concluded that, majority of the farm youth were having low skill level under the dimension of perseverance. It might be because of lack of proper management skill to sustain the enterprise in a long run. Though they are involved in leadership activities proactively, their communication ability with the stakeholders is still a constraint. Among the determinants of the medium skill level of rural youth, the effect of exposure to training programme and social media were found significant in contributing towards enhancing the skill level. In case of farm youth having high skill level, it was found that agripreneurship experience and training were the major determinants for increasing the skill level. It might be because of applying proper expertise from the experience and utilisation of required skill from the training programmes. They need to be updated and upgraded with modern agripreneurial skills in order to derive the maximum out of the agri-enterprise undertaken.

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