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Awareness and perceived effectiveness of government support for farmers' children's higher education across farming systems in South Kerala

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ABSTRACT

Government support may reduce the financial barriers that farming households face in educating their children; however, awareness and perceived usefulness of such support may vary across farming systems. This study assessed farmers' awareness and perceived effectiveness of government support for their children's higher education across four farming systems in South Kerala. The study covered Alappuzha, Kottayam, Thiruvananthapuram, Pathanamthitta and Kollam districts and selected 160 farm households, with 40 households each from rice, vegetable, rubber and integrated farming systems. Data were collected using a structured, pre-tested interview schedule developed through literature review, expert consultation and field validation. General and scheme-specific awareness was recorded using dichotomous responses, while perceived effectiveness and perceived educational and career benefits were assessed using rating scales. The data were analysed using frequencies, percentages, chi-square tests, Cramér's V, Kruskal–Wallis tests and post hoc comparisons. Overall, 65.0% of respondents were aware of government educational support schemes. General awareness differed significantly across farming systems ($\chi^2 = 14.73$; $p = 0.002$; Cramér's $V = 0.303$) and was highest among rubber farmers (90.0%). Awareness of educational scholarships, educational loans, farmer welfare schemes, crop insurance, income-support schemes and skill-development programmes also differed significantly across farming systems. Perceived effectiveness differed significantly among the four groups ($H = 61.34$; $p < 0.001$; $\epsilon^2 = 0.374$), with the rubber group recording a mean score of 4.46. Perceived educational and career benefits also differed significantly ($H = 61.59$; $p < 0.001$; $\epsilon^2 = 0.376$), with a mean score of 3.55 for the rubber group. The findings indicate that awareness, perceived effectiveness and perceived educational and career benefits of government support vary across farming systems. Scheme-specific communication, institutional guidance and improved dissemination of information on eligibility and application procedures are therefore important for increasing the reach and use of educational support among farming households.

Keywords: Educational support, Farmers' children, Farming systems, Government schemes, Higher education, Awareness

Introduction

Higher education can enhance knowledge, employability, occupational mobility and long-term livelihood security. For children from farming households, however, entering and continuing in higher education may entail considerable expenditure. Tuition fees, accommodation, transport, learning materials and digital access can place substantial pressure on household finances. This burden may be greater among farm families because agricultural income is often seasonal and vulnerable to production risks, price fluctuations, climate variability and rising input costs. Government support can help farming households meet these educational expenses. Scholarships, fee concessions and educational loans provide direct financial assistance to students. Farmer welfare schemes, crop insurance and income-support programmes may provide indirect assistance by stabilising household income and protecting resources that might otherwise be diverted from children's education. Evidence suggests that financial aid can improve participation, persistence and completion in higher education, particularly among students from economically disadvantaged households (Berlangua *et al.*, 2022; Berlangua and Corti, 2025; Dynarski, 2003; Karna and Swain, 2022; Nguyen *et al.*, 2019; LaSota *et al.*, 2025) [1, 2, 3, 4, 5, 6].

The availability of a scheme, however, does not ensure that eligible households benefit from it. Awareness of eligibility conditions, application procedures, deadlines and required documents is essential for effective utilisation. Complicated procedures, fragmented information and limited institutional guidance may prevent eligible families from accessing available assistance. Earlier studies have examined awareness and utilisation of scholarships among students and disadvantaged communities. (Radhakrishnan *et al.*, 2018; Riyaz *et al.*, 2019; Santosh *et al.*, 2025; Sharma and Singh, 2020; Santosh and Bora, 2021; Santosh and Bora, 2025) [7, 8, 12, 9, 10, 11] However, less attention has been given to farmers' awareness of educational support or to

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their perceptions of how such support contributes to their children's education and career development. Farming households are not a homogeneous socioeconomic group. Rice, vegetable, rubber and integrated farming systems differ in income patterns, production cycles, market orientation, institutional linkages and exposure to extension services. These differences may affect access to information and households' ability to use government programmes. For example, households associated with commodity boards, farmer organisations, cooperatives or extension agencies may receive information through different institutional channels. A comparison across farming systems can therefore help identify groups that may require more targeted communication and institutional assistance (Radhakrishnan *et al.*, 2018; Riyaz *et al.*, 2019; Santosh *et al.*, 2025; Sharma and Singh, 2020; Santosh and Bora, 2021; Santosh and Bora, 2025) [7, 8, 12, 9, 10, 11].

Kerala has achieved high levels of literacy and educational participation, yet the cost of professional and higher education remains a concern for many rural households. Agricultural extension agencies regularly interact with farm families and could serve as channels to disseminate information on scholarships, loans, welfare programmes and other relevant support. Evidence on variations in awareness and perceived effectiveness across farming systems could help these agencies develop more appropriate communication and facilitation strategies. Against this background, the study was undertaken to assess farmers' general awareness of government support for their children's higher education; compare awareness of selected direct and indirect support schemes across farming systems; examine differences in the perceived effectiveness of government support; and compare its perceived educational and career benefits across rice, vegetable, rubber and integrated farming households in South Kerala.

Materials and Methods

Study area

A cross-sectional survey was conducted across four key farming systems rice, vegetable, rubber and integrated farming across five districts of South Kerala, namely Alappuzha, Kottayam, Thiruvananthapuram, Pathanamthitta and Kollam. These districts were selected to represent the diversity of farming systems in South Kerala.

Sampling procedure

A multistage sampling approach was used for selecting farmers. The five districts were included to capture variations in farming systems. One block per district was purposively selected based on farming household concentration and agricultural diversity, namely Kanjikuzhy (Alappuzha district), Erattupetta (Kottayam district), Parakode (Pathanamthitta district), Chadayamangalam (Kollam district) and Venganoor (Thiruvananthapuram district). The selected areas were prioritised based on a higher proportion of primary farmers and the presence of the four key farming systems. A total of 160 farmers (40 per farming system), each with at least 15 years of farming experience, farming as their primary livelihood, and having children above 18 years who had pursued higher education, were selected.

Instrument and data collection

Primary data were collected from farmers using a structured and pre-tested interview schedule developed through literature review, expert consultation and field validation. The schedule included general and scheme-specific awareness of government support, perceived effectiveness of government support, and perceived impact on children's education and career. General and scheme-specific awareness were assessed using dichotomous responses (Yes = 1, No = 0) for educational scholarships, educational loans, farmer welfare schemes, crop

insurance, income-support schemes and skill-development programmes.

Perceived effectiveness of government support was measured using a researcher-developed five-item, five-point Likert-type scale ranging from 1=Strongly disagree to 5=Strongly agree. The items covered reduction in educational financial burden, continuation of higher education, improvement in career opportunities, prevention of school or college dropout, and upward social mobility of the family. The response format and relevant content domains were informed by previous studies on scholarship and government-support programmes and modified to suit the present farming-household context (Berlanga *et al.*, 2022; Berlanga *et al.*, 2025; Dynarski, 2003) [1, 2, 3]. The scale showed high internal consistency (Cronbach's $\alpha = 0.932$). Perceived impact of government support on children's education and career was assessed separately using a researcher-developed five-item, four-point ordinal impact-rating scale ranging from 1=No impact to 4=High impact, covering continuation of schooling, access to higher education, choice of professional courses, career confidence and reduction of financial stress. The overall impact score was calculated as the mean of the five items, with higher scores indicating greater perceived impact. The perceived educational and career-benefit scale showed satisfactory internal consistency (Cronbach's $\alpha = 0.847$). The interview schedule was pre-tested in a non-sample area before final data collection, and necessary modifications were incorporated.

Statistical analysis

The data were analysed using descriptive and inferential statistical methods. Frequencies and percentages were used to summarise general and scheme-specific awareness of government support. Pearson's chi-square test was used to examine the association between farming system and categorical awareness variables, and Cramér's V was used to assess the strength of association. Mean, standard deviation, median and interquartile range were used to summarise the perceived-effectiveness and perceived-impact scores. Since these scores were obtained from ordinal rating scales and involved four independent farming-system groups, differences among groups were examined using the Kruskal-Wallis test. Epsilon-squared (ϵ) (Berlanga *et al.*, 2025) [21] was used as an effect-size measure. Significant omnibus results were followed by pairwise post hoc comparisons with Holm adjustment for multiple comparisons. Statistical significance was considered at the 5% level ($p < 0.05$).

Results and Discussion

General awareness of government educational support schemes

The overall awareness of government educational support schemes among the respondents is presented in Table 1. Out of the 160 respondents, 104 (65.0%) reported awareness of government educational support schemes, while 56 (35.0%) were unaware.

Marked differences were observed among the four farming systems. Rubber farmers recorded the highest level of awareness, with 36 out of 40 respondents (90.0%) reporting awareness. Awareness was comparatively lower among rice farmers and vegetable farmers, with 23 respondents each (57.5%), while integrated farming households recorded the lowest awareness at 55.0%.

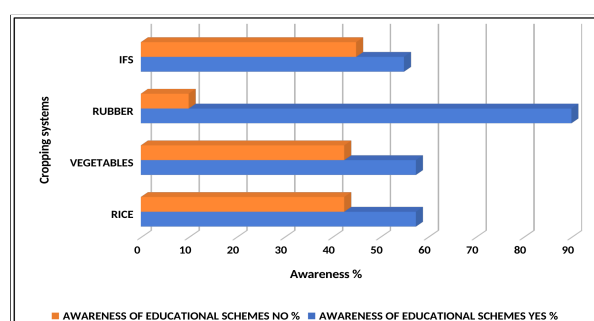
The chi-square test showed a statistically significant association between farming system and awareness of government educational support schemes (χ^2 (Berlanga *et al.*, 2025) [21] = 14.73, $p = 0.002$), with a Cramér's V of 0.303, indicating a moderate association. Post-hoc comparisons indicated that the awareness level among rubber farmers was significantly higher than that of the other three farming systems, whereas the differences among rice, vegetable and integrated farming households were not statistically significant.

Table 1. General awareness of government educational support schemes among farmers' children across farming systems

Farming system	Aware n (%)	Not aware n (%)	Total
Rice	23 (57.5)	17 (42.5)	40
Vegetable crops	23 (57.5)	17 (42.5)	40
Rubber	36 (90.0)	4 (10.0)	40
Integrated farming	22 (55.0)	18 (45.0)	40
Total	104 (65.0)	56 (35.0)	160

Chi-square = 14.73; $p = 0.002$; Cramér's $V = 0.303$

The higher awareness among rubber farming households may indicate greater exposure to fellow farmers and institutional support. In addition to Krishi Bhavans, the Rubber Board may provide an additional institutional channel for information. In contrast, the comparatively lower awareness among rice, vegetable and integrated farming households suggests the need for stronger dissemination of educational support information and a better information network to ensure that scheme information reaches eligible households.

**Figure 1.** General awareness of government educational support schemes across farming systems.**Table 2.** Awareness of specific government support schemes across farming systems

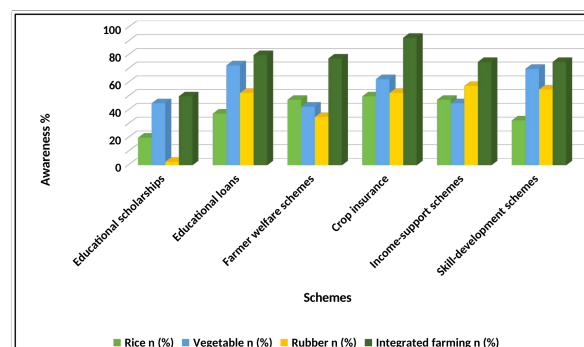
Government support scheme	Rice n (%)	Vegetable n (%)	Rubber n (%)	Integrated farming n (%)	χ^2	p -value	Cramér's V
Educational scholarships	8 (20.0)	18 (45.0)	1 (2.5)	20 (50.0)	28.53	< 0.001	0.422
Educational loans	15 (37.5)	29 (72.5)	21 (52.5)	32 (80.0)	18.72	0.001	0.342
Farmer welfare schemes	19 (47.5)	17 (42.5)	14 (35.0)	31 (77.5)	16.68	0.002	0.323
Crop insurance	20 (50.0)	25 (62.5)	21 (52.5)	37 (92.5)	19.92	< 0.001	0.353
Income-support schemes	19 (47.5)	18 (45.0)	23 (57.5)	30 (75.0)	9.04	0.029	0.238
Skill-development schemes	13 (32.5)	28 (70.0)	22 (55.0)	30 (75.0)	17.95	0.001	0.335

The results demonstrate that awareness is not uniform across schemes or farming systems. In particular, awareness of crop insurance and income-support schemes was relatively high among integrated farming households, whereas awareness of educational scholarships was unexpectedly low among rubber households despite their high general awareness of government educational support. This suggests that general awareness does not necessarily imply awareness of individual schemes.

Awareness of specific government support schemes

Table 2 presents awareness of individual government support schemes. Significant differences were observed across farming systems for all six scheme categories.

Awareness of educational scholarships was highest among integrated farming households (50.0%), followed by vegetable farmers (45.0%) and rice farmers (20.0%), whereas only 2.5 % of rubber farmers reported awareness. The association was statistically significant (χ (Berlanga *et al.*, 2025) $^{[2]} = 28.53$, adjusted $p < 0.001$; Cramér's $V = 0.422$), indicating a relatively strong association. Awareness of educational loans was highest among integrated farming households (80.0%) and vegetable farmers (72.5%), followed by rubber farmers (52.5%) and rice farmers (37.5%). Most children of integrated farming households had availed themselves of loans for higher studies, and the difference was significant (χ (Berlanga *et al.*, 2025) $^{[2]} = 18.72$, adjusted $p = 0.001$; $V = 0.342$). Farmer welfare schemes were known to 77.5 % of integrated farming households compared with 47.5 % of rice farmers, 42.5 % of vegetable farmers and 35.0 % of rubber farmers. The association was significant (χ (Berlanga *et al.*, 2025) $^{[2]} = 16.68$, $p = 0.002$; $V = 0.323$). Crop insurance recorded the highest overall awareness among the specific schemes, particularly among integrated farming households (92.5%). The association across farming systems was significant (χ (Berlanga *et al.*, 2025) $^{[2]} = 19.92$, $p < 0.001$; $V = 0.353$). Awareness of income-support schemes ranged from 45.0 % among vegetable farmers to 75.0 % among integrated farming households and differed significantly (χ (Berlanga *et al.*, 2025) $^{[2]} = 9.04$, $p = 0.029$; $V = 0.238$). Skill-development schemes were known to 75.0 % of integrated farming households and 70.0 % of vegetable farmers, compared with 55.0 % of rubber farmers and 32.5 % of rice farmers. The association was significant (χ (Berlanga *et al.*, 2025) $^{[2]} = 17.95$, $p = 0.001$; $V = 0.335$).

**Figure 2.** Awareness of specific government support schemes across farming systems.

Perceived effectiveness of government support

The perceived effectiveness of government support in facilitating children's education was assessed using a rating scale. Table 3 presents the results.

Rubber farmers recorded the highest perceived effectiveness score (mean = 4.46, SD = 0.57), followed by integrated farming households (mean = 2.75, SD = 1.28), vegetable farmers (mean = 2.68, SD =

0.89) and rice farmers (mean = 2.45, SD = 0.86). The Kruskal–Wallis test indicated a statistically significant difference among the four farming systems ($H = 61.34$, $p < 0.001$), with an epsilon-squared effect size of 0.374, indicating a substantial difference in perceived effectiveness. Post-hoc comparisons showed that rubber farmers differed significantly from each of the other three farming systems, whereas rice, vegetable, and integrated farming households did not differ significantly among themselves.

Table 3. Perceived effectiveness of government support for children's education across farming systems

Farming system	Mean	SD	Median	IQR
Rice	2.45	0.86	2.2	2.00–2.60
Vegetable crops	2.68	0.89	2.6	2.20–2.85
Rubber	4.46	0.57	4.6	4.20–4.80
Integrated farming	2.75	1.28	2.2	1.95–3.65

Kruskal–Wallis $H = 61.34$; $p < 0.001$; ϵ (Berlanga *et al.*, 2025) [2] = 0.374

The substantially higher score among rubber households indicates that government support was perceived as more effective in facilitating children's education in this farming system. The relatively low scores among rice, vegetable and integrated farming households may reflect differences in awareness, access, scheme relevance or the extent to which households were able to benefit from available support.

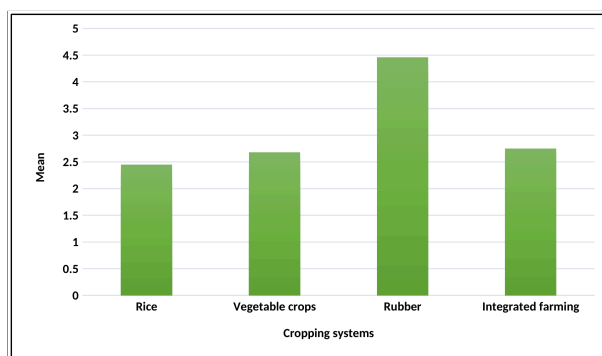


Figure 3. Mean perceived effectiveness of government support across farming systems.

Table 4. Perceived impact of government support on children's education and career across farming systems

Farming system	Mean	SD	Median	IQR
Rice	2.44	0.6	2.4	2.00–2.60
Vegetable crops	2.52	0.6	2.4	2.00–3.00
Rubber	3.55	0.2	3.6	3.40–3.60
Integrated farming	2.37	0.82	2.1	1.80–2.60

Kruskal–Wallis $H = 61.59$; $p < 0.001$; $\epsilon^2 = 0.376$

The findings indicate that perceived government support was associated with a stronger educational and career benefit among children from rubber-farming households. The relatively lower scores reported by the other farming groups indicate the need to understand whether differences arise from scheme awareness, eligibility, utilisation, financial requirements, or households' ability to navigate government support systems.

Integrated comparison across farming systems

Results across dimensions reveal an important distinction between awareness and perceived effectiveness. Rubber households recorded the highest general awareness of government educational support schemes, with 90.0 % reporting awareness. They also recorded the highest perceived effectiveness and perceived educational and career impact.

Perceived impact of government support on children's education and career

Table 4 presents the perceived impact of government support on children's educational progression and career opportunities.

Rubber farmers reported the highest mean impact score (3.55), followed by vegetable farmers (2.52), rice farmers (2.44) and integrated farming households (2.37). The Kruskal–Wallis test showed a statistically significant difference among farming systems ($H = 61.59$, $p < 0.001$), with an epsilon-squared value of 0.376. Post-hoc comparisons indicated that rubber farmers differed significantly from all three other farming systems. No significant differences were observed among rice, vegetable and integrated farming households.

However, the pattern was not identical for individual schemes. Integrated farming households showed particularly high awareness of educational loans, farmer welfare schemes, crop insurance, income-support schemes and skill-development programmes. Their awareness of educational scholarships was also the highest among the four farming systems. Thus, the results suggest that the farming system is associated not only with the overall level of awareness but also with the type of schemes known to households. The comparatively lower general awareness among rice, vegetable and integrated farming households, together with lower perceived effectiveness scores, indicates the importance of strengthening targeted communication about educational support. Agricultural extension personnel, local self-government institutions and educational agencies can potentially serve as important intermediaries for disseminating information about scholarships, loans and other support mechanisms.

The results are consistent with the broader evidence that financial assistance can influence educational participation and persistence (Mendoza *et al.*, 2009; Henry *et al.*, 2004) [13, 14] and that awareness is an important component in ensuring that eligible students benefit from support programmes. However, the present study also demonstrates that the perceived effectiveness of government support varies substantially across farming systems, suggesting that a uniform communication strategy may not be sufficient. Studies of financial aid have also reported associations with student persistence and graduation outcomes, while the magnitude of effects can vary by programme and student context. (Mendoza *et al.*, 2009; Henry *et al.*, 2004) [13, 14]

Conclusion

Government support systems can play an important role in facilitating higher education among children of farming households. The present study revealed significant differences in awareness and perceived effectiveness of government educational support across rice, vegetable, rubber and integrated farming systems in South Kerala.

Overall, 65.0 % of the respondents were aware of government educational support schemes. Rubber farming households showed significantly higher general awareness than the other farming systems. Significant differences were also observed in awareness of individual government schemes, including educational scholarships, educational loans, farmer welfare schemes, crop insurance, income-support schemes and skill-development programmes.

Perceived effectiveness of government support differed significantly among farming systems, with rubber households recording the highest score. A similar pattern was observed for the perceived impact of government support on children's education and career. These findings indicate that the benefits of government educational support are not perceived uniformly across farming households. The findings highlight the need for stronger and more targeted dissemination of information regarding educational support programmes among farming households. Rather than relying only on general publicity, extension agents, Krishi Bhavans, State Agricultural Universities and local institutions should provide scheme-specific information, particularly regarding eligibility, application procedures and available financial assistance. Special attention may be given to farming systems showing relatively lower awareness and perceived effectiveness.

Policy and extension implications

The observed variation in awareness and perceived effectiveness across farming systems indicates the need for targeted, scheme-specific communication rather than uniform dissemination. Agricultural extension agencies, Krishi Bhavans, local self-government institutions and educational departments could help farmers jointly, provide farm households with timely information on scholarships, educational loans, eligibility requirements, application procedures and submission deadlines. Such information may be incorporated into farmer meetings, training programmes and group activities and disseminated through farmer organisations, community institutions and appropriate digital platforms. Proper career awareness and scholarship programmes can be implemented for farmers' children. Communication strategies should be tailored to the awareness gaps identified within each farming system. Extension programmes may also adopt a farm-family perspective by recognising that household livelihood security and children's educational opportunities are interrelated. Direct educational assistance and indirect livelihood support should be clearly distinguished so that farm families can identify the programmes relevant to their circumstances. Improved institutional coordination and application-level guidance could help eligible households make more effective use of available support for their children's higher education and career development.

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