Influence of Family Background on Learning Outcome of Agricultural Undergraduates in Indian Conditions

T. R. Sridevi Krishnaveni[1*] and R. Arunachalam[2]

[1]Institute of Agriculture, Tamil Nadu Agricultural University, Kumulur, Trichy – 621712, Tamil Nadu, India.
[2]AC&RI, Vazhavachanur Tamil Nadu Agricultural University, Thiruvannamalai – 60675, Tamil Nadu, India.

Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Family as an entity teaches many concepts like social, economic, technical, moral concepts to the children for a better living. Thus the contribution of a family in an educational environment is undeniable. Thus this paper attempts to cull out various aspects of family background that influence the learning situation of the agricultural undergraduate students in the Indian conditions. Agricultural College and Research Institute, Coimbatore of TNAU were taken as the study center. B. Sc. (Agriculture) degree program was purposefully selected. 114 students studying final year were considered for the study by employing saturated sampling technique. Majority of the respondents' families were found to be economically sound with stable occupation under any one sector. Being hostellers, the parents did not have adequate scope to engage in educational activities and interact with the institution. But they always find ways to back the students in all possible ways in other means.

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Corresponding author: E-mail: srideviens@gmail.com;

1. INTRODUCTION

Education Production Function is a production model that has to integrate datasets covering all aspects of the educational process, including students, family, institution, peers that are hardly available, as rightly pointed out by Rivkin et al. [1]. Researchers have arrived at finding several factors affecting students' academic performance and competency. They are related to students' background, family related, university, environment and socio-cultural settings, behavioral and other related commitments [2] Ali et al., (2013) and Mazharul Islam [3]. Dineshkumar [4] proposed that the class tests, seminar and assignments, marks from the students prior database, student's attitude towards attendance in class, and hours spent in the study daily after college affect the student's performance. Elasara [5] explored that the educational process was influenced by three primary factors: school inputs, adolescents' family background, and adolescents' personal inputs. Coleman et al. [6] concluded that the family background was important for the educational outcome. In developing country contexts research shows that children from poorer backgrounds are disadvantaged concerning their development, learning and attaining potential [7,8, 9,10,11].

Czyżewski et al. [12] zed and reported that their research conducted in Poland indicated that exam results in secondary schools are highly correlated with socio-economic development at the district level. Elasra [5] proved that the family background affects schooling by altering both the opportunities and capacities to succeed in the future career. Niranjan et al. [13] has also reported that the family's socio-economic and educational situation is the important factor in the students' career choices. Thus, this study attempts to study the students' family background, which is one of the major factors contributing to the education production function and influencing the learning situation of the agricultural undergraduates [14,15]. The study also attempts to test the hypothesis that no relationship exists between family background and the students' educational outcome.

2. METHODOLOGY

As a premier institute in agriculture and being started in 1971, carrying out teaching, research and extension for about 46 years TNAU cater to the needs of farmers, extension workers and students. Thus the heritage-rich and meritorious Tamil Nadu Agricultural University is purposefully selected for the study. The main campus has well-established infrastructure and supporting facilities for academic and co-curricular activities compared to any other campuses under TNAU. TNAU offers ten undergraduate programs and Masters's programs in 40 disciplines, and Doctoral programmes in 26 disciplines. A bachelor's degree is not just job training; it also does prepare a young adult for the kinds of jobs that our society is moving toward. An undergraduate degree is also like live training, during the transition period of any individual from adolescence into an adult. Many of the jobs in the placement world has fixed their entry-level qualification as undergraduate level education, and all the employment-based competitive exams, civil service exams, entrances for higher education, etc., also fixes the undergraduate level education as the minimum entry-level of eligibility criteria. Therefore, it is highly reasonable to analyze the production function of undergraduate degree programs, including various stakeholders. Hence, selecting an undergraduate degree programme for the study and B. Sc. (Agriculture) was chosen for the study based on the maximum enrollment rate.

The 114 students studying final year undergraduate degree programme in the main campus of Tamil Nadu Agricultural University, Coimbatore was considered for this analysis by employing saturated sampling technique.

Ex post-facto research design was employed for this study. Family background is operationalised to the elements that would either catalyst or inhibit the students' learning situation. Family background is a key element in educational research because parent and sibling attributes significantly impact the respondent's future life experiences. This factor comprises seven items: family type, Family educational background, family occupational status & income, nature of the house, home ownership, parenting style, and parents' involvement in children's education. The cumulative score of the respondent was considered to be the respondent's score regarding their family background.

Data were collected from the students through a personal interview with the help of a structured

interview schedule incorporating all the items according to the objectives for analyzing their profile and factors influencing their learning situation. Before finalizing the interview schedule, it was pre-tested in a non-sampling area. After pre-testing, inconsistencies noted were rectified correctly, and then the schedule was finalized. The most relevant, unambiguous and practical questions were included in the schedule that was suitable to all categories of respondents. Refinement was made in the schedule after pretesting as found necessary, and it was finalized.

Data collected through interview schedule was tabulated and analysed using SPSS 16.0. Sub tables were formed based on the objective addressed earlier. These findings were analysed using the following statistical tools. Percentage analysis to make simple comparisons, Cumulative frequency to categorize the results into low, medium and high,

Pearson Product Moment Correlation to study the relationships between the independent and dependent variables, and regression analysis to find out the functional relationship between the dependent and independent variables are performed.

3. RESULTS AND DISCUSSION

Family is the first school for children. Every word and action of a family can either help or hinder the process of their kid. Thus, the family background is a key element in educational research and significantly impacts the respondent's achievement. Under this factor, socio-economic attributes like family type, family educational status, family occupational status, family income, nature of the house, ownership of the house, parenting style, and parents involvement in their children's education were studied, and the results are given in Table 1 and discussed below.

Table 1. Distribution of the respondents according to their family background (n = 114)

S. No.	Category	Number	Percentage (%)
Family type			
1.	Nuclear family	108	94.70
2.	Joint family	6	05.30
	Total	**114**	**100**
Family Educational Status			
1.	Low	18	15.80
2.	Medium	83	72.80
3.	High	13	11.40
	Total	**114**	**100**
Family Occupational Status			
1.	Low	17	14.90
2.	Medium	75	65.80
3.	High	22	19.30
	Total	**114**	**100**
Family Income			
1.	Low (less than Rs. 1,54, 621)	12	10.50
2.	Medium (Rs.1,54,621 to Rs.7,89,251)	85	74.60
3.	High (more than Rs.7,89,251)	17	14.90
	Total	**114**	**100**
Nature of House			
1.	Terraced + more than one floor	23	20.20
2.	Terraced	52	45.60
3.	Apartment	04	03.50
4.	Tiled	30	26.30
5.	Thatched	05	04.40
	Total	**114**	**100**
Home Ownership			
1.	Owned	99	86.80
2.	Under EMI	04	03.50
3.	Leased	02	01.80
4.	Rented	09	07.90

S. No.	Category	Number	Percentage (%)
	Total	**114**	**100**
Parenting Style			
1.	Low	25	21.93
2.	Medium	73	64.04
3.	High	16	14.03
	Total	**114**	**100**
Parents involvement in Children's Education			
1.	Very much involved	09	07.90
2.	Fairly involved	15	13.20
3.	Not very much involved	29	25.40
4.	Not at all involved	61	53.50
	Total	**114**	**100**

3.1 Family Type

Family type intends to measure whether the student lives in a nuclear or joint family setup based on the conjugal and consanguineal family aspects. The results are given in Table 1. Results show that an overwhelming majority of the respondents (94.70 %) were raised in a nuclear family setup. And only a trifling percentage of the respondents (05.30 %) were found belonged to joint families. The paradigm shift with the concept of family over the past few decades is the reason for the rise of such results. Many parents tend to lead an independent life in a nuclear family setup with a desire to provide proper accommodation, good education and other facilities to their children. The results were supported by the evidence published by Padashetty et al. [16].

3.2 Family Educational Status

It refers to the maximum level of academic attainment of the parents and the family members who support the educational activities of the students. This variable considers the family members with the age of 5 and above. The distribution of the respondents based on the parents educational level is given in Table 1. As can be seen from the results, a vast majority of the respondents' family (72.80 %) were found to be possessed with a medium level of education, followed by low (15.80 %) and high (11.40 %) levels. Further, out of the interaction, it is understood that majority of the respondents had either of the parents with an undergraduate level of education. The reason for the higher concentration of respondents in the medium level was because of the second generation group found in the family. Majority of the respondents had siblings pursuing education at Higher Secondary to Undergraduate level even while their parents were found to be in the range of illiterate to the preliminary school level. This shows the higher level of expectation and desire of the parents to make their children well educated and successful. The results were found affirmatory with the findings of Bandura et al. [14]. According to them, the academic expectation was found minimal with the parents of lower educational level which was found to be reversed in this study

3.3 Family Occupational Status

This variable explains the occupational status of the respondents' family. It attempts to cumulate the working status of the family members of the above 14 years of age. This variable has a greater scope to explain several aspects like exposure towards agriculture, interest, socio-economic status and aspiration level of both parents and their children. Hence, this variable was included in this study. The results of the occupational status of the respondents family are depicted in Table 1. The results depicts that slightly more than three-fifths of the respondents (65.80 %) belonged to the family with a medium level of occupational status. Around twenty per cent of the respondents (19.30 %) were found belonging to higher-level occupational status, followed by low level (14.90 %). It is found that majority of the parents were employed in the public and private sector and a considerable amount of the respondents' family members were running enterprises. But the number of employed members of a family was relatively low in many families. This is the reason for the distribution of the majority of the respondents from high to medium level.

It could be observed that around two-fifth of the respondents' (40.35 %) family members were employed in either government or public sector firms. Around one-fourth of the respondents' family members were with occupation in the

private sector (27.19 %), farming (26.32 %), followed by self- employment (20.17 %). Families of most of the respondents (82.46 %) had one or more unemployed members apart from them. Family with members employed in formal institutions preferred this course for their children considering the higher scope of employment as perceived by them. It is also interesting to note that more than one-fourth of the respondent's families rely on farming. Among them, more than ten per cent of the respondents had farming as a secondary occupation accompanied by other sectors. The results derive support from Lyttle-Burns [17] stated that parents with higher socioeconomic status contribute better to the student's performance.

3.4 Family Income

This variable helps to know the financial status and stability of the respondents' family to support their education. This variable includes the contribution of family members of the above 14 years of age. The results are given in Table 1. Based on the results it could be inferred that nearly three fourth of the respondents' families (74.60 %) had a medium level of income (around rupees 1.5 lakhs to 8 lakhs per year). Around fifteen per cent of the respondents (14.90 %) were from families with a high level of earnings, followed by low level (10.50 %). Many of the families had more than one earning member working under different sectors. And a considerable proportion of families had members possessing a job with the government or public sector. Also, those sectors provide comparatively higher remuneration to their employees. These might be the reasons for the increased percentage of respondents in medium to a high level of family income per year. The above results were confirmed with the results of Bandura et al. [18]. They reported that lower socioeconomic status tends to have a lower academic expectation for their children.

3.5 Nature and Ownership of the House

These variables are yet other socio-economic indicators about the students. It aims to study the

type of house their family resides and about the type of ownership exerted on the house by them. The results are summarized in the following Table 1. The results exhibits clearly that nearly half of the respondents (45.60 %) were found to be residing in a terraced house. A little greater than twenty-five per cent of the respondents (26.30 %) live in tiled houses followed by one-fifth of the respondents (20.20 %) residing in houses that were terraced with more than one floor. Only a meager proportion of respondents (03.50 %) reported as living in apartments. It was also clear that the majority of the respondents (86.80 %) owned the houses they reside in. A trifling proportion of respondents reported ownership status like rented (07.90 %), under EMI (03.50 %) and leased in (01.80 %). The overall analysis of Table 6, leads to the following conclusion. Majority of the students hail from the middle to upper-middle-class families. Those kinds of families have a high level of expectation on the students' performance to succeed in this competitive world.

3.6 Parenting Style

Parenting style briefs about the strategies adopted by the parents in handling their children. This variable helps to know the level of expectations on their children through the level of demand and responsiveness exerted by them over their children. Generally, the parents were found to exert a mixed strategy in our society. Hence, this variable was studied and the results are presented in Table 1. On analyzing the results, it could be inferred that around sixty-five percent of the respondents (64.04 %) were grown up under medium level of parenting skill. Little greater than one-fifth of the respondents (21.93 %) expressed about the low level of parenting skill exerted by their parents, followed by high level (14.03 %). The nature of the parenting skill predominantly exerted by their parents was also studied through this variable. The data collected are given in Table 2.

From Table 2 it could be understood that a little more than half of the respondents' parents (52.63 %) were found to be with authoritative

Table 2. Distribution according to the parents' nature of parenting (n = 114)

S. No.	Category	Number	Percentage (%)
1.	Authoritative parenting	60	52.63
2.	Authoritarian parenting	42	36.84
3.	Permissive parenting	12	10.53
	Total	**114**	**100**

parenting skill. Slightly more than thirty-five per cent of the parents (36.84 %) were of the authoritarian type, followed by permissive type (10.53 %). It is very much satisfying to observe a majority of the respondents with parents of authoritative type. Because authoritative parenting is considered to be the most favourable parenting style as it helps to enhance the performance of the students. Further, the interaction also revealed about a few parents adopted a mixed strategy. Majority of them expressed that their parents express a moderate level of authoritarian type as far as only academics are concerned, while they adopt the authoritative style to guide, mentor and motivate with other issues. This could be possibly due to the medium level of educational and occupational status of their parents. As it is already quoted, the persons with lower educational qualification have higher expectations and desire for students' performance. The results are in accordance with the findings of Rosenzweig [19], who indicated seven specific parenting practices that account for 16% of the variance in students' academic achievements. They were parental engagement, providing resources and learning experiences, parent participation in school activities, parental educational aspirations and grade expectations, authoritative parenting, autonomy support and emotional support.

3.7 Parents Involvement in Children's Education

This variable delineates the parent's degree of involvement in the learning activities for the student's achievement. The results are described in Table 1. The results, portrays that majority of the respondents (53.50 %) did not have any interference of their parents in their educational activity. The quarter proportion of the respondents (25.40 %) expressed about the minimal involvement and engagement of their parents in their educational activity. Little less than fifteen per cent of the respondents (13.20 %) experienced a fair level of involvement of their parents. Only a meager percentage of the parents (07.90%) were very much involved in the educational activities of the children. During the interaction, the students expressed that parental involvement was found to be low, as the most majority of them are hostellers. Many parents were found to be employed in any of a formal institution and hence, they suffer from lack of adequate family time. The students also added

that the level of involvement was minimal only with respect to educational support, however, their involvement was found to be higher in terms of emotional support, moral support, provision of love and affection and resource support. The results were found to be similar to the results of Gonzalez-DeHass et al. [20] on cross verification. He declared that the children who perceive their parents to have a high level of involvement and values in education tend to adopt such values as their personal goals and thus have better academic behaviours.

3.8 Overall Family Background

This is based on the cumulative score arrived by finding the average of the standard scores (Z-score) of individual variables. This helps to understand the nature of the respondents based on different levels of family background. Thus the analysed results are summarized in Table 3.

Table 3. Distribution to the overall standardized family background score (n = 114)

S. No.	Category	Number	Percentage (%)
1.	Low	15	13.20
2.	Medium	79	69.30
3.	High	20	17.50
	Total	**114**	**100**

Table 3 exhibits clearly that nearly a vast majority of the respondents (69.30 %) were found with medium to a high level of family background. Little less than twenty per cent of the respondents (17.50 %) was observed with a higher level of family background, followed by low (13.20 %) level. The thorough appraisal of the preceding table and the other table results under family background dimension leads to the following conclusions. Majority of the respondents' family were found to be economically sound with stable occupation under any one sector. The other social indicators indicated that majority of the respondents hailed from nuclear and small family setup, as they preferred to lead an independent and sophisticated life. It is also explored that majority of the respondents were growing up in an authoritative parenting style which has a reasonable demand and also higher responsiveness towards the children needs and demands.

Table 4. Correlation and multiple regression analysis showing the influence of family background on the educational outcome of the student respondents (n = 114)

		Family type	Family educational status	Family occupational status	Family income	Nature of house	Parenting style	Parents involvement	Educational outcome
Family type	**Pearson Correlation**	**1.00**	**-0.44**	**-0.28**	**-0.03**	**0.10**	**-0.01**	**0.02**	**0.03**
	Sig. (2- tailed)	000	0.000	0.002	0.764	0.291	0.934	0.838	0.731
	n	114	114	114	114	114	114	114	114
Family educational status	**Pearson Correlation**	-	**1.00**	**-0.04**	**0.29**	**0.24**	**0.15**	**0.19**	**0.05**
	Sig. (2- tailed)	-	-	0.650	0.002	0.011	0.119	0.048	0.578
	n	-	-	114	114	114	114	114	114
Family occupational status	Pearson Correlation	-	-	**1.00**	**-0.14**	**-0.25**	**0.08**	**-0.01**	**0.16**
	Sig. (2- tailed)	-	-	000	0.108	0.009	0.423	0.916	0.046
	n	-	-	114	114	114	114	114	114
Family income	Pearson Correlation	-	-	-	**1.00**	**0.35**	**0.16**	**0.15**	**0.01**
	Sig. (2- tailed)	-	-	-	000	0.000	0.089	0.120	0.882
	n	-	-	-	114	114	114	114	114
Nature of house	Pearson Correlation	-	-	-	-	**1.00**	**0.17**	**0.26**	**0.10**
	Sig. (2- tailed)	-	-	-	-	000	0.69	0.006	0.295
	n	-	-	-	-	114	114	114	114
Parenting style	Pearson Correlation	-	-	-	-	-	**1.00**	**0.25**	**0.25**
	Sig. (2- tailed)	-	-	-	-	-	000	0.006	0.007
	n	-	-	-	-	-	114	114	114
Parents involvement	Pearson Correlation	-	-	-	-	-	-	**1.00**	**0.20**
	Sig. (2- tailed)	-	-	-	-	-	-	000	0.033
	n	-	-	-	-	-	-	114	114
Educational outcome	Pearson Correlation	-	-	-	-	-	-	-	**1.00**
	Sig. (2- tailed)	-	-	-	-	-	-	-	000
	n	-	-	-	-	-	-	-	114

It could also be understood that the residential nature of the students has played a major role in parental involvement in their educational activities. Being hostellers, the parents did not have adequate scope to be engaged in educational activities and to interact with the institution. But they backed the students in all other possible ways to support their educational development through constant motivation, emotional support and arrangements for all possible resources. The results were found to be similar to the views of Coleman et al. [6] who concluded that family background was important for the educational outcome. The results were also found in line with the views of Elasra [5]. She stated that the family background affects education by altering the opportunities and the capacities of the students.

3.9 Relationship between Family Background and the Educational Outcome of the Students

The educational outcome is operationalised to be actual overall grade points secured by the students till the last semester results officially released by the institute. The bivariate Pearson product-moment correlation was worked among family background indicators and the educational outcome and the data is pictured in Table 4.

Based on the result of Table 4 out of seven independent variables family occupational status, parenting style and parents involvement seems to have a positive significant correlation with educational outcome of the students at five per cent and one per cent level respectively. Thus the null hypothesis of the study was rejected.

4. CONCLUSION

A vast majority of the respondents (69.30 %) were found with medium to a high level of family background. Little less than twenty per cent of the respondents (17.50 %) was observed with a higher level of family background followed by low (13.20 %) level. Agriculture is a tightly packed and counselling based course offered by a common system in Tamil Nadu, students prefer to join hostel to continue their higher education. Moreover, they feel it to be convenient for early classes, group assignments, material sharing etc. However, family and sentiment bound societal structure to have a grip over the students to maintain the physical, social and moral standards of the students. Thus the institute could take initiatives to arrange for frequent

Parents and Teachers Meetings either online or offline through year-coordinators. The update on students attendance, academic performances could be made shared through database management system with students, teachers and parents as clientele group. Thus the influential indicator could be effectively utilized to improve the educational outcome of the agricultural graduates.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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