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The Perceived Preferences and Priority Pattern of Farm Graduates towards Higher Agricultural Education Vis-À-Vis Employment

S.K. Mehta, A.K. Godara, D.K. Shivrain and Nasib Singh

Department of Extension Education, College of Agriculture, CCS Haryana Agricultural University, Hisar 125 004, Haryana, India

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ABSTRACT The study was conducted on the final year students of College of Agriculture, CCS HAU, Hisar to ascertain their preference pattern for specialization in higher agricultural education and their priority pattern for employment. There were 86 students in all, of which 44 students were from 4-year programme and 42 students were from 5-year programme. The study revealed that the 4-year Agriculture stream graduates ranked *Agronomy* at the top followed by *Horticulture, Entomology, Plant Breeding* and *Extension Education* at 2nd, 3rd, 4th and 5th, respectively. *Nematology* was the least preferred subject and *Agricultural Meteorology* was the least but one. The 6 year Agriculture programme graduates ranked *Agronomy* again at the top followed by *Plant Breeding, Entomology, Extension Education* and *Horticulture*. The first five subjects preferred for higher agricultural education are identical with minor differences in ranking, maintaining *Agronomy* at the top. Regarding job areas, *Civil/ Administrative jobs* remained the first choice of 4-year programme final year students of college of Agriculture followed by *Educational and Research Institutional jobs, State Govt. Jobs, Agro based public sector, Agro-based private sector* and *Self employment*, while, *General jobs* and *Farming* were the least preferred job areas. The same priority pattern was observed among 6-year programme students except that they preferred *State govt. jobs* over *Educational and Research Institutional jobs*.

INTRODUCTION

Why one thinks of joining agricultural university is a complex phenomenon encompassed with variety of factors governing this. In the present study, it was hypothesized that agricultural graduates henceforth called as farm graduates, besides other considerations, might think of joining the Agricultural University for attaining a professional specialization in various streams and entering into the different agricultural based professions, thus leading to better prospects for employment. The choice of field of specialization for higher agricultural education and the priority pattern for job areas are the significant contributors in building up the career of agricultural graduates coming out from different agricultural universities and colleges. These two components play an important role and governed by many attributes of the human personality complex including their socio-personal and psychological characteristics. Keeping this in mind, the present investigation was carried out with the following specific objectives:

1. To ascertain farm graduates' preference pattern for specialization in higher agricultural education and their priority pattern for employment
2. To study the respondents' comparative judgment of different disciplines for higher agricultural education and different job areas.

METHODOLOGY

The study was carried on final year students of College of Agriculture of CCS HAU, Hisar. There were 86 students in all, of which 44 students were from 4-year programme and 42 students were from 6-year programme. However the data could be collected from 36 students of 4-year programme and 40 students of 6-year programme.

The present investigation was designed to find out the preference pattern for specialization in higher agricultural education and job priorities as perceived by the final year students, who were going to complete their Bachelor's degree programme from the college of agriculture of Chaudhary Charan Singh Haryana Agricultural University, Hisar. The study was exploratory in nature and made a thorough investigation on different aspects to draw valid and reliable conclusions. The preference pattern for specialization in higher agricultural education in the present study included various aspects. To start with, the respondents were asked to give their consent, whether they intended to pursue higher

agricultural education during the course of their future plan. In case, they intended, the specific reasons were invited for this.

To have a specific expression on the preference pattern of the respondents for specialization in higher agricultural education, the Paired Comparison Technique was used. The respondents were presented the pairs of different disciplines made from all possible combinations. There were in all 66 pairs of various agricultural disciplines and 28 pairs of different job areas to be judged by the students of College of Agriculture. The respondents had to choose only one from each pair. For better presentation and to minimize ambiguity, the pairs were presented in a vertical fashion leaving sufficient space between two disciplines of each pair. The numbers of pairs were determined by the following formula: n(n 1)/2.

Under, Paired Comparison Technique, the 'F', 'P' and 'Z' matrices were calculated. The step wise procedure as discussed by Edwards (1951) was followed in calculating the scale values.

RESULTS AND DISCUSSION

Agricultural research during last four decades in India has taken rapid strides. This has resulted in specialization. Gill and Reddy (1990) have observed that the specialization has penetrated deep into different aspects of higher agricultural education for professionalism. The first degree in agriculture is considered a basic degree and graduates turned out are considered jack of all but master of none. After this degree, various specialized courses are open for professional specialization. In the Agricultural University, Agriculture stream provides specialization in 12 subjects and the admission to these specialized courses for respective professional specialization is primarily on merit basis. To ascertain the professional choice of the subjects, the farm graduates were asked to check for their specialization they would like to go for. This aspect was probed using the Paired Comparison Technique for comparative preferences, respectively. The scale values given in Tables 1 and 2 formed the basis of determining perceived preferences of various disciplines for higher agricultural education and the scale values presented in Tables 3 and 4 formed the basis for the priority pattern for different job areas of 4-year programme and 6-year programme students, respectively (Mehta et al. 2005).

The Z matrices in Tables 1 and 2 is an indicative of preference pattern of various disciplines for higher education and the Z matrices in Tables 3 and 4 is an indicative of comparative judgment of different job areas. Each value of Z with negative sign in each column revealed less preference of the column parameters in comparison to the corresponding parameter in row. The column with more negative value of Z was less preferred in comparison to the corresponding row parameters. Similarly, the column with more positive values of Z had higher preferences in comparison to the corresponding subject entered in the row. The greater the value of Z in cell entries (either positive or negative), the more differences in preference between two corresponding subjects / job areas was indicated.

The 4-year Agriculture stream graduates ranked *Agronomy* at the top followed by *Horticulture, Entomology, Plant Breeding* and *Extension Education* at 2nd, 3rd, 4th and 5th, respectively. *Nematology* was the least preferred subject and *Agricultural Meteorology* was the least but one (Table 1).

The 6 year Agriculture programme graduates ranked *Agronomy* again at the top followed by *Plant Breeding Entomology, Extension Education* and *Horticulture* (Table 2).This might be due to the variation among the 4 year and 6 year students on account of their background, academic performance, parental occupation, parental income, etc. However, a glance at these two tables reveal that the first five subjects preferred for higher agricultural education are identical with minor differences in ranking, maintaining *Agronomy* at the top.

The findings reveal that the choice of farm graduates with reference to specialization in higher agricultural education has mostly fallen on the subjects which have better job prospects in terms of availability of jobs/employment both within and outside the country. This clearly reflects the broad vision, insight and imagination on the part of majority of the farm graduates since they seem to have thought of the relationship between the choice for the field of specialization and job opportunities available in the market. The logic has been very well-substantiated with the admission trend at the postgraduate level among different agricultural universities.

It is apparent from Table 3 that *Civil/ Administrative jobs* remained the first choice of 4-year programme final year students of college of

Table 1: P and Z Matrices (Paired Comparison Technique) for subject preferences for higher agricultural education of 4-year programme

	Ag. eco	*Ag. metro*	*Agron.*	*Ag. forestry*	*Ento.*	*Ext. edn.*	*Hort.*	*Nemat.*	*Pl. breed*	*Pl. path*	*Soil sci.*	*Veg. crops*
Agricultural economics	0.000 (0.500)	-0.863 (0.194)	1.911 (0.972)	0.432 - (0.333)	0.966 (0.833)	0.674 (0.750)	0.966 (0.833)	-1.805 (0.139)	0.966 (0.833)	0.674 (0.750)	0.141 (0.556)	-0.070 (0.472)
Agricultural meteorology	0.863 (0.806)	0.000 (0.500)	1.911 (0.972)	0.141 (0.556)	1.589 (0.944)	1.221 (0.889)	1.589 (0.944)	-0.507 (0.306)	0.966 (0.833)	0.863 (0.806)	0.765 (0.778)	1.385 (0.917)
Agronomy	-1.911 (0.028)	-1.911 (0.028)	0.000 (0.500)	-1.911 (0.028)	-1.221 (0.111)	1.589 (0.056)	-1.085 (0.139)	-1.911 (0.028)	-1.911 (0.028)	-1.911 (0.028)	-1.911 (0.028)	-1.385 (0.083)
Agro-forestry	0.432 (0.667)	-0.141 (0.444)	1.911 (0.972)	0.000 (0.500)	0.966 (0.833)	0.863 (0.806)	1.085 (0.861)	-0.565 (0.222)	0.765 (0.778)	0.432 (0.667)	0.141 (0.556)	0.210 (0.583)
Entomology	-0.966 (0.167)	-1.589 (0.056)	1.221 (0.889)	-0.966 (0.167)	0.000 (0.500)	-0.282 (0.389)	0.141 (0.556)	-1.085 (0.139)	-0.210 (0.167)	-1.085 (0.139)	-0.863 (0.194)	-0.765 (0.222)
Extension education	-0.674 (0.250)	-1.221 (0.111)	1.589 (0.944)	-0.863 (0.194)	0.282 (0.611)	0.000 (0.500)	0.356 (0.639)	-1.383 (0.083)	0.210 (0.583)	-0.141 (0.444)	-0.674 (0.250)	0.589 (0.277)
Horticulture	-0.966 (0.167)	-1.589 (0.056)	1.085 (0.861)	-0.1085 (0.139)	-0.141 (0.444)	-0.356 (0.361)	0.000 (0.500)	-1.589 (0.056)	-0.589 (0.278)	-1.085 (0.139)	-0.966 (0.167)	-1.221 (0.111)
Nematology	1.085 (0.861)	0.507 (0.694)	1.911 (0.972)	0.565 (0.778)	1.085 (0.861)	1.385 (0.917)	1.589 (0.944)	0.000 (0.500)	1.385 (0.917)	1.085 (0.861)	0.675 (0.778)	1.221 (0.889)
Plant breeding	-0.966 (0.167)	-0.966 (0.167)	1.911 (0.972)	-0.765 (0.222)	0.210 (0.583)	-0.210 (0.417)	0.589 (0.722)	-1.385 (0.083)	0.000 (0.500)	-0.432 (0.333)	-0.966 (0.167)	0.356 (0.361)
Plant pathology	-0.674 (0.250)	-0.863 (0.194)	1.911 (0.972)	-0.432 (0.333)	1.085 (0.861)	0.141 (0.556)	1.085 (0.861)	-1.085 (0.139)	0.432 (0.667)	0.000 (0.500)	-0.765 (0.222)	-0.210 (0.417)
Soil science	-0.141 (0.444)	-0.765 (0.222)	1.911 (0.972)	-0.141 (0.444)	0.863 (0.806)	0.674 (0.750)	0.966 (0.833)	-0.675 (0.222)	0.966 (0.833)	0.765 (0.778)	0.000 (0.500)	-0.141 (0.444)
Vegetable crops	0.070 (0.528)	-1.385 (0.083)	1.385 (0.917)	-0.210 (0.417)	0.765 (0.778)	0.589 (0.722)	1.221 (0.889)	-1.221 (0.111)	0.356 (0.639)	0.210 (0.583)	0.141 (0.556)	0.000 (0.500)
Sums	-3.848	-10.786	18.657	-6.099	6.449	3.110	8.502	-13.213	3.336	-0.625	-4.282	-1.921
Means	-0.321	-0.899	1.555	-0.508	0.537	0.259	0.709	-1.101	0.278	-0.052	-0.357	-0.160
Means+1.101 =Scale value	0.780	0.202	2.656	0.593	1.638	1.360	1.810	0.000	1.379	1.049	0.744	0.941

Values of P Matrix are given in respective parenthesis.

Table 2: P and Z matrices (Paired Comparison Technique) for subject preferences for higher agricultural education of 6 year programme

	Ag. eco	*Ag. metro*	*Agron.*	*Ag. forestry*	*Ento.*	*Ext. edn.*	*Hort.*	*Nemat.*	*Pl. breed*	*Pl. path*	*Soil sci.*	*Veg. crops*
Agricultural economics	0.00 (0.500)	-0.674 (0.250)	1.036 (0.850)	0.454 (0.325)	1.036 (0.850)	0.598 (0.725)	1.440 (0.925)	-0.674 (0.250)	1.440 (0.925)	0.524 (0.700)	0.126 (0.550)	0.189 (0.575)
Agricultural meteorology	0.674 (0.750)	0.00 (0.500)	1.645 (0.950)	0385 (0.650)	0.935 (0.825)	1.282 (0.900)	1.282 (0.900)	-0.319 (0.375)	1.282 (0.900)	0.755 (0.775)	0.524 (0.700)	0.674 (0.750)
Agronomy	-1.036 (0.150)	-1.645 (0.050)	0.000 (0.500)	-1.150 (0.125)	-0.598 (0.275)	-0.674 (0.250)	-0.063 (0.475)	-1.645 (0.050)	-0.598 (0.275)	-1.960 (0.025)	-1.960 (0.025)	1.150 (0.125)
Agro-forestry	0.454 (0.675)	-0.385 (0.350)	1.150 (0.875)	0.000 (0.500)	1.150 (1.150)	0.842 (0.800)	1.036 (0.850)	-1.036 (0.150)	1.150 (0.875)	0.319 (0.625)	0.524 (0.700)	0.454 (0.675)
Entomology	-1.036 (0.150)	-0.935 (0.175)	0.598 (0.725)	-1.150 (0.125)	0.000 (0.500)	-0.319 (0.375)	0.000 (0.500	-1.645 (0.050)	0.189 (0.575)	-0.935 (0.175)	-0.842 (0.200)	-0.524 (0.300)
Extension education	-0.598 (0.275)	-1.282 (0.100)	0.674 (0.750)	-0.842 (0.200)	0.319 (0.625)	0.000 (0.500)	0.253 (0.600)	-1.645 (0.050)	0.126 (0.550)	-0.935 (0.175)	-0.935 (0.175)	-0.842 (0.200)
Horticulture	-1.440 (0.075)	-1.282 (0.100)	0.063 (0.525)	-1.036 (0.150)	0.000 (0.500)	-0.253 (0.400)	0.000 (0.500	-1.645 (0.050)	0.454 (0.325)	-1.440 (0.075)	-1.282 (0.100)	-1.150 (0.125)
Nematology	0.674 (0.750)	0.319 (0.625)	1.645 (0.950)	1.036 (0.850)	1.645 (0.950)	1.645 (0.950)	1.645 (0.950)	0.000 (0.500)	1.645 (0.950)	1.036 (0.850)	0.935 (0.825)	1.282 (0.900)
Plant breeding	-1.440 (0.075)	-1.282 (0.100)	0.598 (0.725)	-1.150 (0.125)	-0.189 (0.425)	-0.126 (0.450)	0.454 (0.675)	-1.645 (0.050)	0.000 (0.500)	1.645 (0.050)	-1.282 (0.100)	-0.842 (0.200)
Plant pathology	-0.524 (0.300)	-0.755 (0.225)	1.960 (0.975)	-0.1319 (0.375)	0.935 (0.825)	0.935 (0.8 25)	1.440 (0.925)	-1.036 (0.150)	1.645 (0.950)	0.000 (0.500)	0.189 (0.425)	0.189 (0.575)
Soil science	-0.126 (0.450)	-0.524 (0.300)	1.960 (0.975)	-0.524 (0.300)	0.842 (0.800)	0.935 (0.8 25	1.282 (0.900)	-0.935 (0.175)	1.282 (0.900)	0.189 (0.575)	0.000 (0.500)	0.063 (0.525)
Vegetable crops	-0.189 (0.425)	-0.674 (0.250)	1.150 (0.875)	0.454 (0.325)	0.524 (0.700)	0.842 (0.800)	1.150 (0.875)	-1.282 (0.100)	0.842 (0.800)	0.189 (0.425)	0.063 (0.475)	0.000 (0.500)
Sums	-3.551	-9.119	12.479	-5.658	6.599	5.707	9.919	-13.507	8.558	-4.281	-4.444	-1.657
Means	-0.296	-0.760	1.040	-0.472	0.550	0.476	0.287	-1.126	0.713	-0.357	-0.370	-0.138
Means+1.126 =Scale value	0.830	0.366	2.166	0.654	1.676	1.602	1.413	0.000	1.839	0.769	0.756	0.988

Values of P Matrix are given in respective parenthesis.

Table 3: P and Z matrices (Paired Comparison Technique) for job priorities of 4 -year programme

S. No.		*Civil/ Adm. jobs*	*State Govt. jobs*	*Educational and res. inst. jobs*	*Agro-based public sector jobs*	*Agro-based pvt. sector jobs*	*General jobs*	*Farming*	*Self employment*
1	Civil/Administrative jobs	0.000	-9.666	-0.863	-0.674	0.674	-1.911	-1.085	-1.221
		(0.500)	(0.167)	(0.194)	(0.250)	(0.250)	(0.028)	(0.139)	(0.111)
2	State Govt. jobs	0.966	0.000	0.282	0.070	0.070	-1.911	-1.221	-1.085
		(0.833)	(0.500)	(0.611)	(0.528)	(0.528)	(0.028)	(0.111)	(0.139)
3	Educational and research inst. jobs	0.863	-0.282	0.000	-0.210	-0.507	-1.911	-1.221	-0.674
		(0.803)	(-0.389)	(0.500)	(0.417)	(0.306)	(0.028)	(0.111)	(0.250)
4	Agro-based public sector jobs	0.674	-0.070	0.210	0.000	-0.282	-1.911	-0.966	-0.863
		(0.750)	(0.472)	(0.583)	(0.500)	(0.389)	(0.028)	(0.167)	(0.194)
5	Agro-based private sector jobs	0.674	-0.070	0.507	0.282	0.000	-1.221	-0.966	-0.863
		(0.750)	(0.472)	(0.694)	(0.611)	(0.500)	(0.111)	(0.167)	(0.194)
6	General jobs	1.911	1.911	1.911	1.911	1.221	0.000	0.000	0.507
		(0.972)	(0.972)	(0.972)	(0.972)	(0.889)	(0.500)	(0.500)	(0.694)
7	Farming	1.085	1.221	1.221	0.966	0.966	0.000	0.000	0.674
		(0.861)	(0.889)	(0.889)	(0.833)	(0.833)	(0.500)	(0.500)	(0.750)
8	Self- employment	1.221	1.085	0.674	0.863	0.863	-0.507	-0.674	0.000
		(0.889)	(0.861)	(0.750)	(0.806)	(0.806)	(0.306)	(0.250)	(0.500)
	Sums	7.394	2.829	3.942	3.208	1.657	-9.378	-6.133	-3.525
	Means	0.924	0.354	0.493	0.401	0.207	-1.171	-0.767	-0.441
	Means+1.171=scale value	2.095	1.525	1.664	1.572	1.378	0.000	0.404	0.730

Values of P Matrix are given in respective parenthesis.

Table 4: P and Z Matrices (Paired Comparison Technique) for job priorities of 6-year programme.

S. No.		*Civil/ Adm. Jobs*	*State Govt. jobs*	*Educational & Res. Inst. jobs*	*Agro-based public sector jobs*	*Agro-based Pvt. Sector jobs*	*General jobs*	*Farming*	*Self employment*
1	Civil/Administrative jobs	0.000	-0.598	-0.319	-0.935	-0.674	-1.645	-0.755	-1.036
		(0.500)	(0.275)	(0.375)	(0.175)	(0.250)	(0.050)	(0.225)	(0.150)
2	State Govt. jobs	0.598	0.000	0.000	-0.253	-0.755	-1.440	-1.440	-1.440
		(0.725)	(0.500)	(0.500)	(0.400)	(0.225)	(0.075)	(0.075)	(0.075)
3	Educational and Research Inst. jobs	0.319	0.000	0.000	-0.189	-0.755	-1.150	-1.036	-0.842
		(0.625)	(0.500)	(0.500)	(0.425)	(0.225)	(0.125)	(0.150)	(0.200)
4	Agro-based public sector jobs	0.935	0.253	0.189	0.000	-0.755	-1.150	-0.842	-0.842
		(0.825)	(0.600)	(0.575)	(0.500)	(0.225)	(0.125)	(0.200)	(0.200)
5	Agro-based private sector jobs	0.674	0.755	0.755	0.755	0.000	-1.440	-0.842	-0.755
		(0.750)	(0.775)	(0.775)	(0.775)	(0.500)	(0.075)	(0.200)	(0.225)
6	General jobs	1.645	1.440	1.150	1.150	1.440	0.000	-0.253	0.385
		(0.950)	(0.925)	(0.875)	(0.875)	(0.925)	(0.500)	(0.400)	(0.650)
7	Farming	0.755	1.440	1.036	0.842	0.842	0.253	0.000	0.674
		(0.775)	(0.925)	(0.850)	(0.800)	(0.800)	(0.600)	(0.500)	(0.750)
8	Self -employment	1.036	1.440	0.842	0.842	0.755	-0.385	-0.674	0.000
		(0.850)	(0.925)	(0.800)	(0.800)	(0.775)	(0.350)	(0.250)	(0.500)
	Sums	5.962	4.730	3.653	2.212	0.098	-6.957	-5.842	-3.856
	Means	0.745	0.591	0.457	0.276	0.012	-0.870	-0.730	-0.482
	Means+0.870=scale value	1.615	1.461	1.327	1.146	0.882	0.000	0.140	0.388

Values of P Matrix are given in respective parenthesis.

Agriculture followed by *Educational and Research institutional jobs, State govt. jobs, Agro based public sector, Agro-based private sector* and *Self employment*, while, *General jobs* and *Farming* were the least preferred job areas. The same priority pattern was observed among 6-year programme students (Table 4) except that they preferred *State govt. jobs* over *Educational and Research institutional jobs*. The *Civil/ Administrative jobs* are the management cadre jobs available in different development departments of the Government. The State Government jobs available to farm graduates in agricultural sector are Agriculture Development Officers. The *Educational and research institutional jobs* are mainly of Technical Assistants, Demonstrators and Junior Level Farm Managers in the agriculture colleges and research Institutions. The *Agro-based public sector jobs* are mainly in Input Production and Marketing Management types of jobs. The *Self employment* for agricultural graduates implies having a small scale unit relevant to production and /or marketing of farm inputs and developing nurseries for fruit and ornamental flower plants for marketing. The *Agro-based private sector* of late, has come up with the challenging jobs which are very lucrative also .Graduates loving challenges and confident about their performance are attracted by these jobs.

Having favorable attitude towards higher education is of course most important, but it is more important to decide about the kind of professional specialization one should obtain after his first degree. The preference pattern for specialization is mainly based on the job opportunities available in the market, leaving aside the other factors. It has been a very common phenomenon that every one before opting for a particular specialization for higher education keeps in mind the kind of avenues, he would be able to secure. The comparative priority pattern is suggestive of the fact that the educational institutions should overhaul their curriculum to meet the priority area needs of the job and to keep pace with the ever changing technology (Doerfert and Miller 2006). Akbers (2000) also stated that agricultural communication programs should be frequently reviewed to ensure that the existing curriculum effectively prepare the students for the industry. The priority areas and jobs available in the market keep on changing with the developmental phases of the rural and urban society and therefore, there is strong need for assessing the quantity and quality of jobs available for farm graduates in Government, public and private sectors from time to time in line with the job requirements. Such studies should be longitudinal and repeated after a reasonable time period.

CONCLUSION AND RECOMMENDATIONS

The study concluded that 4 year Agriculture graduates preferred *Agronomy* followed by *Horticulture, Entomology, Plant Breeding* and *Extension Education*, respectively for higher agricultural education. *Nematology* was the least preferred subject and *Agricultural Meteorology* was the least but one. The 6 year Agriculture programme graduates preferred *Agronomy* again at the top followed by *Plant Breeding, Entomology, Extension Education* and *Horticulture*. The first five subjects preferred for higher agricultural education are identical with minor differences, maintaining *Agronomy* at the top. Regarding job areas, *Civil/ Administrative jobs* remained the first choice of 4-year programme final year students of college of Agriculture followed by *Educational and Research Institutional jobs, State Govt. jobs, Agro- based public sector, Agro-based private sector* and *Self employment*, while, *General jobs* and *Farming* were the least preferred job areas. The same priority pattern was observed among 6-year programme students except that they preferred *State govt. jobs* over *Educational and Research Institutional jobs*. The comparative priority pattern is suggestive of the fact that the educational institutions should overhaul their curriculum to meet the priority area needs of the job and to keep pace with the ever changing technology. Hence, the policy makers and planners while revising the curriculum should keep in mind the kind of jobs available in Government, public or private sector. Accordingly the more practical oriented courses should be included for their degree programmes to meet the requirements of the jobs available in the market.

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