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Profile characteristics of farm scientists in Karnataka

[1]Balusu Gopichand, [2]VL Madhuprasad and [3]Sreelakshmi C

[1]Consultant, National Institute of Agricultural Extension Management (MANAGE), Rajendranagar, Hyderabad, Telangana, India

[2]Director of Extension (Retd.), University of Agricultural Sciences, Bangalore, Karnataka, India

[3]Academic Associate, National Institute of Agricultural Extension Management (MANAGE), Rajendranagar, Hyderabad, Telangana, India

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Corresponding Author: Balusu Gopichand

Abstract

The inventions and research in Agricultural science is most important to solve the challenges faced by farming community at different levels. The study on characteristics of Farm Scientists is helpful to understand them more and drives to frame appropriate policy decision to encourage scientists of different characteristics by categorizing them. The present study conducted in six Agricultural and allied Universities of Karnataka based on nominal and ordinal variables selected. Therefore, the scientists are categorized according to the score and characteristics of them are finalized. Majority of scientists were very much satisfied with the work culture established, however, they differ in many aspects of educational background, choices and preferences.

Keywords: Opportunities, work-load, job autonomy, background

Introduction

Indian Scientists work on agriculture research has made tremendous contributions and it is attempted to discuss few of them. The contribution of M.S. Swaminathan was the land mark in the Indian Agriculture by developing wheat varieties to vanish hunger and poverty. The Wheat pathologist, S. Nagarajan work on wheat rust by gene deployment strategy and gene matching techniques saved 6 to 7 MT of grains per year due to outbreak of wheat rust diseases. The polyculture technique of rising fish in one habitat by Modadugu Gupta turned ditches on roadside and other fallow lands for fish cultivation which significantly contributed to fish production. The eminent Veterinary Pathologist and Microbiologist Chinta Mani Singh made outstanding contributions in etiopathogenesis and diagnosis of animal diseases mainly listeriosis, salmonellosis, mycoplasmosis, bovine lymphosarcoma and slow viral respiratory diseases. The famous Scientist G.S. Randhawa worked on improvement of grapes, plant growth regulators, taxonomy and nutritional studies in banana. Internationally renowned Scientist Prof. Rajeev Varshney had contributed to Genomics Assisted Breeding (GAB) to GAB 2.0 and new concepts of 5Gs for crop genetic improvements. He had decoded genomes of more than ten crops with collaborations which helps to find solutions to sustain against climate change and pest's attack. G.S. Sekhon work on phosphorous fertilizer with only 70 per cent in water soluble form made cheaper fertilizer availability to farmers.

Even though there are many inventions in agriculture, the diversified nation like India and the agriculture investment demands much more productive research from the scientific community. Therefore, the present study focussed to know the personal, socioeconomic and psychological characteristics of Farm Scientists would facilitate in more understanding of them. Further, it helps to analyse the variables that influence the productivity of Farm Scientist and suggest necessary suggestions to overcome their limitations.

Materials and Methods

The characteristics that are important for shaping the scientist and influence in their inventions and research productivity were listed by considering the experts opinion. Both the nominal and ordinal were included in the listed variables. The variables with their definitions were sent to 10 experts and the score was calculated based on their response in two-point continuum for the inclusion of the variables. The variables scored above 80% were selected considering the Lawshe's content validity ratio. Further, 199 scientists from six Agriculture and allied Universities are selected purposively for the study which facilitate easy permission. Moreover, all the Universities are ranking at different levels from higher to lower according to Agricultural Universities ranking by Indian Council of Agricultural Research (ICAR). All the scientists working under Directorate of Research and other research projects of Universities are selected for the study. Pre-tested questionnaire sent through mail and due to the poor response, communicated about the importance of study by visiting their research stations.

Results

The results revealed that more than one-third of the Farm Scientists (37.69%) belonged to early degree holders followed by 33.67 per cent of little late degree holders and 28.64 per cent late degree holders. It was also observed that majority (64.32%) of them were male and the rest female (35.68%). The highest 43.72 per cent of overall respondents were Assistant Professor cadre followed by 31.66 per cent and 24.62 per cent belonged to Professor and Associate Professor cadre. Further, nearly half (48.24%) of the Farm Scientists had medium grade followed by high (30.15%) and low (21.61%) grades respectively.

Equal per centage (36.18%) of respondents belonged to urban and semi urban backgrounds and the rest 27.64 per cent of them belonged to rural background. The results confirmed that Farm Scientists (46.73%) belonged to medium family income followed by 39.70 per cent were low and 13.57 per cent were high family income categories. With respect to spouse occupation, more than half (55.78%) of Farm Scientists belonged to households followed by Government service (18.09%), private service (17.09%), business (4.02%), any other (3.01%) and independent professional (2.01%). Further, more than two-fifth (43.72%) belonged to medium professional experienced category followed by low (37.19%) and high (19.09%) categories respectively.

In case of Job autonomy, more than two-fifth (46.74%) of Farm Scientists had experienced very high job autonomy followed by 40.70 per cent and 12.56 per cent moderate and very little respectively. Majority of them experienced low extra working hours (57.79%) followed by medium (22.61%), very low (11.06%), high (8.04%) and very high (0.5%) categories. Accordingly, more than two-fifth (44.22%) of Farm scientists had average perception of workload followed by light (42.21%), very light (8.04%), heavy (4.53%) and too heavy (1%). Similarly, majority Farm Scientists belonged to medium digital usage status might be due to the less time to dedicate for updation on the digital technologies. The findings are in agreement with the findings of Tukaram (2007) [13].

It appears one-third (35.17%) of the Farm Scientists had high empathy followed by low (33.67%) and medium (31. 15%) levels. Further, 42.72 per cent of Farm Scientists had good health status followed by 30.65 per cent and 26.63 per cent belonged to average and poor health status respectively. The findings revealed that more than one third (34.17%) of Farm Scientists had high opportunities followed by medium (33.67%) and low (32.16%) opportunities. Scientists of SAUs felt very high facilities. Further, more than one-third 35.18 per cent felt medium level of facilities provided followed by high (25.63%), very low (16.58%), low (12.56%) and very high (10.05%) facilities.

Table 1: Nominal Variables of Profile characteristics of Farm Scientists (n=199)

Sl. No.	Characteristics	Categorization	f	%
1	Gender	Male	128	64.32
		Female	71	35.68
2	Cadre	Assistant Professor	87	43.72
		Associate Professor	49	24.62
		Professor	63	31.66
3	Rural-urban background	Rural	55	27.64
		Semi-urban	72	36.18
		Urban	72	36.18
4	Occupation status of Spouse	Govt. service	36	18.09
		Private service	34	17.09
		Independent Profession	04	02.01
		Business	08	04.02
		Household	111	55.78
		Any other	06	03.01
5	Health status	Poor	53	26.63
		Average	61	30.65
		Good	85	42.72

Table 2: Ordinal Variables of Profile characteristics of Farm Scientists (n=199)

Sl. No.	Characteristics	Categorization	f	%
1	Age at Ph.D.	Early Degree holder	75	37.69
		Little late degree holder	67	33.67
		Late degree holder	57	28.64
2	Grades at different educational levels	Low	43	21.61
		Medium	96	48.24
		High	60	30.15
3	Annual family income	Low	79	39.7
		Medium	93	46.73
		High	27	13.57
4	Professional Experience	Low	74	37.19
		Medium	87	43.72
		High	38	19.09
5	Job Autonomy	Very little	25	12.56
		Moderate	81	40.70
		Very much	93	46.74
6	Extra working hours	Very Low	22	11.06
		Low	115	57.79
		Medium	45	22.61
		High	16	08.04
		Very High	01	00.50
7	Perception of workload	Very light	16	08.04
		Light	84	42.21
		Average	88	44.22

		Heavy	09	04.53
		Too heavy	02	01.00
8	Digital usage status	Low	50	25.13
		Medium	109	54.77
		High	40	20.10
9	Empathy	Low	67	33.67
		Medium	62	31.15
		High	70	35.17
10	Opportunity given to scientists	Low	64	32.16
		Medium	67	33.67
		High	68	34.17
11	Facilities provided	Very Low	33	16.58
		Low	25	12.56
		Medium	70	35.18
		High	51	25.63
		Very High	20	10.05

Discussion

Most of the Farm Scientists realized the importance of Ph.D. degree in the scientific career. After completion of master's degree, they joined Ph.D. immediately. Further, non-availability of better alternatives was also a reason. The results were not in-line with the findings of Kaur (2004) [8] might be due to the temporal and spatial variations. However, the majority Farm Scientists were male, this was related to the less female had PG degree during the previous decades. However, this situation reversed in the present scenario. The above findings are in line with the findings of Senthilkumar (1999) [12], Borah (2013) [1] and Faizan (2018) [2].

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The semi-urban background of the majority Farm Scientists might be due to most of the agricultural education especially at PG and Ph.D. level was in semi-urban and urban areas. The study was supported by findings of Varghese (2006) [14]. Further, reason attributed to the medium family income of Farm Scientists might be due to salary was main source of income and also most of their spouse were house-holds. Similar findings were reported by Gopal (1995) [3], Varghese (2006) [14] and Kobba (2015) [10].

The scientist's choice to marry a house-hold to perform/manage household activities as customary in Indian society. The results far away from the findings of Kaur (2004) [8] might be due to the spatial and temporal variations. Many Farm Scientists enjoy working extra hours might be due to their efficient utilization of resources to excel in their professional career. The professional experience of the majority Farm Scientists was less and medium might be due to most of their posting in the research stations only at the beginning of their career. The results were in consonance with the findings of Gopal (1995) [3], Gutte (1996) [4], Kaur (2003) [7], Jagadale (2004) [5] and Varghese (2006) [14]. Moreover, medium level of work load perceived by majority due to shared responsibilities minimized the work pressure. The study was supported by the findings of Yunus (2016) [15].

The high empathy of the Farm Scientists might be due to good mutual understanding among Farm Scientists. Thus, high empathy provides better working environment in the research stations. However, it may sometimes lead to in-grouping which oversee the scientific rationale. Further, majority of Farm Scientists had very good health status might be due to the good natural environment in research stations which were generally located outside the urban areas. Further they had opportunity to get healthy food in their workplace.

The reason that could be attributed for high opportunities provided by universities might be due to permission granted to Farm Scientists for participation and involvement in different activities to achieve the scientists as well as universities long-term goals. The above results were in line with the findings of Jhansirani (1985) [6]. The majority of Farm Scientists felt medium level of facilities provided due to their non-availability at the appropriate time of experiment/research. This might had affected the scientist's performance in research. The above findings seeks support from Jhansirani (1985) [6], Prashant (2009) [11], Keshavrao (2014) [9] and Kobba (2015) [10].

Conclusion

The comprehensive over view of the study shows the nost scientists were agree degree holders and Assistant Professor cadre with medium grades and experience. Both the urban and semi-urban equally represented and the moderate socio economic status. The positive features like favourable work conditions, job autonomy and low extra working hours are encouraging. The changing trends in Farm Scientists choices and background are necessary for policy formulation regarding scientist's human resource development.

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