Perceived Constraints of Farm Scientists in State Agricultural Universities, West Bengal

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Abstract

Effort has been made to identify the perceived constraints of the farm scientist and their magnitude as well as relation with job satisfaction of the two State Agricultural Universities (SAU's) of West Bengal. It reveals that most severe constrains faced by the farm scientists is financial and budgetary constraints followed by infrastructural constraints, situational constraints, communication constraints, administrative and managerial constraints and constraints related to extension activities. It has been also found that paucity of fund for research; lack of coordination among different departments and lack of promotional opportunities are the most crucial constraints that stand in the way of getting the desired level of job satisfaction among the farm scientists.

Keywords: Job satisfaction, constraints, farm scientist, state agricultural university

Human resources are the most fundamental of all available resources in an organization. The knowledge, skills, abilities, attitudes and competence of all employees in any organization are the vital resources. A stable, well-trained, efficient and committed worker is the most important resource of an organization. Sometime it has been noted that employee in an organization has general feeling that they are improperly placed and their potentiality is not efficiently utilized. If the grievances are not fairly managed then the performance of the organization will be low with the risk of non-existence.

The performance of individual in an organization has become an important factor as the productivity of any organization depends to a greater extent on the performance of its employees. It is an established fact that the performance of an employee is largely affected by the satisfaction which one experience in the job. It is also an established fact that performance and job satisfaction of an employee is conditioned by a number of constraints within the organization. The term 'constraints' generally refer to barrier or impediments (technical, social, psychological and situational) confronted in achieving desired objectives. It can be thought of as negative force affecting the attainment of a desired goal (Kashem and Jones, 1988).

Number of studies revealed that employees found constraints in their organization related to training facilities (Mallick, 1977; Dakhore and Bhilegaonkar, 1987; Maheshwari and Gupta, 2004), availability of research personnel, research material, equipment, building (Kaldor, 1966), high time pressure (Subramaniam and Ganesan, 1982; Nataraju 1991), guidance and help from superior (Dakhore and Bhilegaonkar, 1987; Das and Laharia,2003), organizational system, quality of working life, authority and responsibility (Ray and Chatterjee, 1990), coping with changing environment (Lan, 1991), more scriptory work, target oriented approach, diversification of work, more span of control (Nataraju *et al.*, 1991), infrastructure facilities and recognition (Venkatasubramanian and Chand,1992; Maheshwari and Gupta, 2004), poor interdepartmental co-ordination, bureaucratic bottleneck, poor facility for mobility, poor communication (Mukherjee, 1994), transport facilities (Popat *et al.*, 2002; Anil Kumar *et al.*, 2003), excessive paper work and insufficient clerical support (Kumar *et al.*, 2003), less scope to show merit and excellence (Das

and Laharia, 2003), budget, pay and promotional growth (Morris *et al.*, 2004 and Maheshwari and Gupta, 2004).

In view of the above the present study has been conducted with some specific objectives. These are (i) to determine perceived constraints of farm scientists; (ii) to measure extent of the perceived constraints and (iii) to examine correlation between job satisfactions and perceived constrains of the farm scientists.

Database and Methodology

There are two State Agricultural Universities viz. Bidhan Chandra Krishi Viswavidyalaya and Uttar Banga Krishi Viswavidyalaya in West Bengal. All the farm scientists working in the main campus in these two universities for more than three years are the respondents of the study.

Table 1: List of selected variables and their empirical measurement

Independent variables	Empirical measurement
Perceived constraints	Questionnaire developed for the study
Dependent variable	
Job satisfaction	Schedule developed by Quinn and Shepard(1974)

For the analysis of data SPSS/PC (Argyrous, 2002) are used

The total numbers of such scientists are 96. Effort has been made to develop an appropriate questionnaire for the collection of necessary data since the respondents are highly educated. Two types of variables are selected i.e. independent and dependent variables in view of the objectives of the study. The extent of constraints has been measured on the basis of Five Point Likert Scale. The list of selected variables and their empirical measurement is given in Table 1.

Results and Discussion

All activities of an organization are guided by its people and the achievements depend upon their performance. Interplay of organizational characteristics and individual characteristics determine the overall effectiveness of an organization. Technology and processes are inseparable with the two aspects i.e., the human resources and the physical tasks so far as organizational performance is concerned.

Farm Scientists perceived constraints are broadly categorised into administrative/managerial constraints, infrastructural constraints, situational constraints, financial and budgetary constraints, communication constraints and constraints related to extension activities.

Lack of multidisciplinary research is the major identified constraints by farm scientists and accordingly gets Rank-I and followed by lack of mutual coordination in interdisciplinary research and coordination among different departments and coordination of activities gets next higher ranking respectively and Rank-II, Rank-III and Rank-IV are assigned accordingly (Table 2). Least encountered constraints to farm scientists are administrative and secretarial assistance, unacceptable treatment by supervisor and provision for punishment as exhibited in Table 2.

Table 3 presents the farm scientists perceived infrastructural constraints. Insufficient modern scientific

Table 2: Farm scientists perceived administrative /managerial constraints

N = 96

Constraints	Weighted Score	Weighted Mean	Rank
Lack of coordination in multi-disciplinary research	204	2.13	I
Lack of coordination among different departments	201	2.09	II
Lacks of mutual coordination in inter- disciplinary research	197	2.05	III
Lack of coordination of activities	195	2.03	IV
Inadequate promotional opportunities	194	2.02	V
Absence of harmonious relationship among the staff of the organization	176	1.83	VI
Lack of delegation of authority in the organization	168	1.75	VII
Lack of leadership in research team	166	1.73	VIII
Farm scientists being used as generalists	161	1.68	IX
Lack of provision of reward for good Work	153	1.59	X
Lack of clear cut responsibility and instruction	152	1.58	XI
Lack of prompt decision by the head of the research team	151	1.57	XII
Lack of decentralization of power	143	1.49	XIII
Lack of provision for punishment	141	1.47	XIV
Unacceptable treatment by supervisor	124	1.29	XV
Lack of administrative and secretarial assistance	123	1.28	XVI

Source: Primary Data

Table 3: Farm scientists perceived infrastructural constraints

N = 96

Constraints	Weighted Score	Weighted Mean	Rank
Insufficient modern scientific equipment	222	2.31	I
Lack of transport facilities	220	2.29	II
No proper sitting arrangement in the department	195	2.03	III
Lack of proper library facilities	193	2.01	IV
Lack of proper accommodation facilities	190	1.98	V
Lack of data analysis system	187	1.95	VI
Lack of proper information system	183	1.91	VII
Dilapidated conditions of the laboratory	170	1.77	VIII
Unavailability of sufficient land for field experiment and trail	169	1.76	IX
Dilapidated conditions of the department	160	1.67	X

Source: Primary Data

Table 4: Farm Scientists perceived situational constraints

N = 96

Constraints	Weighted Score	Weighted Mean	Rank
Lack of timely availability of labour	212	2.21	I
Lack of timely availability of skilled labour	202	2.10	II
Lack of skilled or trained labour	200	2.08	III
Hostile labour union	190	1.98	IV
Lack of concern of the farm scientists and his welfare	186	1.94	V
No proper protection of research field from grazing animals	180	1.88	VI
Odd working hours	175	1.82	VII
Lack of recognition of research finding	170	1.77	VIII
Theft of research farm product by miscreants	165	1.72	IX
Inadequate field and farmers problem oriented research	161	1.68	X
Lack of working cordial relationship among the staff	158	1.65	XI

Source: Primary Data

Table 5: Farm scientists perceived financial/budgetary constraints

N = 96

Constraints	Weighted Score	Weighted Mean	Rank
Paucity of fund for research	204	2.13	I
Lack of resources and inputs for research	200	2.08	II
Provision of budget in time	196	2.04	III
Lack of fund for attending seminar/symposium *etc*. in India and abroad	194	2.02	IV
Lack of fund for conducting seminar/symposium *etc*.	193	2.01	V
Lack of incentives for trial and experiment	179	1.86	VI

Source: Primary Data

Table 6: Farm scientists perceived communication constraints

N = 96

Constraints	Weighted Score	Weighted Mean	Rank
Inadequate internet facilities	190	1.98	I
Lack of communication with the expert of the other institutions for upgrading research information	185	1.93	II
Lack of interdepartmental communication	180	1.88	III
Lack of availability of national and international journal in library	175	1.82	IV
Suppression of facts	173	1.80	V
Displacement of letters, parcels *etc*. due to negligence of subordinate staff	150	1.56	VI
Noise in communication in the room due to sharing of room with other colleague	124	1.29	VII

Source: Primary Data

equipment is the major recognized constraints and it gets Rank-I followed by lack of transport facilities and no proper sitting arrangement in the department are second and third. However minimal existential constraints are dilapidated conditions of the department and unavailability of sufficient land for field experiment and trail.

Labour related problems are noticeable constraints as depicted in Table 4. The lack of timely availability of labour along with lack of timely availability of skilled labour and lack of skilled or trained labour gets Rank I, Rank II and Rank III, respectively. Less severe constraints are odd working hours (Rank VII), lack of recognition of research findings (Rank VIII) and least felt constraints are lack of working cordial relationship among the staff (Rank XI) and inadequate field and farmers problem oriented research (Rank X).

It has been observed in Table 5 that paucity of fund for research is the major identified constraints for the farm scientists followed by lack of resources and inputs for research and provision of budget in time are more strenuous felt constraints and accordingly these attributes get Rank-I, Rank-II and Rank-III, respectively. Least assumed constraints to farm scientists are lack of incentives for trial and experiment and lack of fund for conducting seminar/symposium etc.

Communication is the life and blood of an organization. Table 6 is the perusal of perceived communication constraints of farm scientists. Inadequate internet facilities is the major identified constraints to the scientists and it ranks I, whereas lack of communication with the expert of the other institutions for upgrading research information is second and most severe felt constraints to the scientists. However, noise in communication in the room due to sharing of room with other colleague is least observed constraints to the farm scientists.

Table 7 represents the glance of farm scientists perceived constraints related to extension activities. It is worthwhile to note that lack of opportunities for training and lack of opportunities to study new course and new work are stern barriers to channelize extension activities to the farm scientists and consequently these occupied Rank I and Rank II. Conversely lack of access to radio talk or T.V. talks (related to farm programme) are least presumed constraints to the scientists.

In view of the constraints of farm scientists are broadly clubbed into six categories for generalization viz. administrative and managerial constraints, infrastructural constraints, situational constraints,

financial and budgetary constraints, communication constraints and constraints related to extension activities. It has been observed in Table 8 that financial and budgetary constraints are most culminated stumble in the way of job and hence it ranks one, and infrastructural constraints is second most felt constraints as recognized by the scientists. However, administrative and managerial constraints, and constraints related to extension activities are subdued constraints.

Coordination perpetuation of environ of organization is hypothesized as the leading sequel of job satisfaction. Hence, Table 9 is the reflection of that presumption as most of the co-ordinational attributes $(X_1, X_2, X_3$ and $X_4)$ are negatively and significantly correlated with the dependent variable job satisfaction. From this finding it may be inferred that failure in coordination in multi-disciplinary research, inter-disciplinary research, different departments and activities catalyze to job dissatisfaction among farm scientists. Apart from these factors, the variables inadequate promotional opportunities (X_5), harmonious relationship (X_6), and delegation of authority in the organization (X_7) are negatively and significantly correlated the dependent variable Job Satisfaction. However the attributes farm scientists being used as generalists (X_9), lack of provision of reward for good work (X_{10}) and decentralization of power (X_{13}) are negatively associated with the job satisfaction without any significant contribution. These may imply that these variables have least manoeuvrable affect on job satisfaction or these factors are conducive in organizational level.

The constraints attributes viz. insufficient modern scientific equipment (X_1), sitting arrangement in the department (X_3) and unavailability of sufficient land for field experiment and trail (X_9) are negatively and significantly correlated with job satisfaction of the farm scientists (Table 10). Therefore, it may be conjectured that the variables X_1, X_3 and X_9 are pronominal for job dissatisfaction to the scientists. The variables X_2, X_4 to X_8 and X_{10} although correlated with the dependent variables but the associations are non-significant which portray the fact that transport facilities, library facilities, accommodation facilities, data analysis system, information system are neither encumber on the way nor the major constraints towards job satisfaction.

It has been observed in Table 11 that the variables X_1, X_2 and X_3 are negatively and significantly correlated with the dependent variable i.e. job satisfaction and this result is indicative that availability and timely availability of labour and their skills are more proneness

Table 7: Farm scientists perceived constraints related to extension activities

N = 96

Constraints	Weighted Score	Weighted Mean	Rank
Lack of opportunities for training	190	1.98	I
Lack of opportunities to study new course and new work	175	1.82	II
Lack of scope to participate in Kisan Mela	170	1.77	III
Inadequate scope to participate in Kisan Gosthi	168	1.75	IV
Constraints in demonstration in farmers field	165	1.72	V
Constraints in organizing farmers training Programme	158	1.65	VI
Lack of access to radio talk or T.V. talks (related to farm programme)	128	1.33	VII

Source: Primary Data

Table 8: Rank position of major perceived constraints of farm scientists

N = 96

Broad categories of constraints	Weighted mean score	Rank
Financial and budgetary constraints	2.02	I
Infrastructural constraints	1.97	II
Situational constraints	1.89	III
Communication constraints	1.75	IV
Administrative/Managerial constraints	1.73	V
Constraints related to extension activities	1.72	VI

Source: Primary Data

Table 9: Correlation between job satisfaction and administrative/managerial constraints of farm scientists

N = 96

Constraints	r-value
Lack of coordination in multi-disciplinary research (X_1)	-0.319**
Lack of coordination among different departments (X_2)	-0.329**
Lacks of mutual coordination in inter-disciplinary research (X_3)	-0.369**
Lack of coordination of activities (X_4)	-0.284**
Inadequate promotional opportunities (X_5)	-0.352**
Absence of harmonious relationship among the staff of the organization (X_6)	-0.321**
Lack of delegation of authority in the organization (X_7)	-0.253*
Lack of leadership in research team (X_8)	-0.201*
Farm scientists being used as generalists (X_9)	-0.127^{NS}
Lack of provision of reward for good Work (X_{10})	-0.156^{NS}
Lack of clear cut responsibility and instruction (X_{11})	-0.323**
Lack of prompt decision by the head of the research team (X_{12})	-0.344**
Lack of decentralization of power (X_{13})	-0.125^{NS}
Lack of provision for punishment (X_{14})	-0.203*
Unacceptable treatment by supervisor (X_{15})	-0.235*
Lack of administrative and secretarial assistance (X_{16})	-0.168^{NS}

Source: Primary Data

**Correlation is significant at the 0.01 level, *Correlation is significant at the 0.05 level, ^{NS}=Not Significant

Table 10: Correlation between job satisfaction and infrastructural constraints of farm scientists

N = 96

Constraints	r-value
Insufficient modern scientific equipment (X_1)	-0.205*
Lack of transport facilities (X_2)	0.095^{NS}
No proper sitting arrangement in the department (X_3)	-0.240*
Lack of proper library facilities (X_4)	0.076^{NS}
Lack of proper accommodation facilities (X_5)	-0.120^{NS}
Lack of data analysis system (X_6)	0.077^{NS}
Lack of proper information system (X_7)	-0.120^{NS}
Dilapidated conditions of the laboratory (X_8)	-0.165^{NS}
Unavailability of sufficient land for field experiment and trail (X_9)	-0.222*
Dilapidated conditions of the department (X_{10})	-0.124^{NS}

Source: Primary Data

*Correlation is significant at the 0.05 level, ^{NS}=Not Significant

Table 11: Correlation between job satisfaction and situational constraints of farm scientists

N = 96

Constraints	r-value
Lack of timely availability of labour (X_1)	-0.265*
Lack of timely availability of skilled labour (X_2)	-0.240*
Lack of skilled or trained labour (X_3)	0.226*
Hostile labour union (X_4)	-0.125[NS]
Lack of concern of the farm scientists and his welfare (X_5)	-0.182[NS]
No proper protection of research field from grazing animals (X_6)	-0.142[NS]
Odd working hours (X_7)	-0.123[NS]
Lack of recognition of research finding (X_8)	-0.141[NS]
Theft of research farm product by miscreants (X_9)	-0.110[NS]
Inadequate field and farmers problem oriented research (X_{10})	-0.159[NS]
Lack of working cordial relationship among the staff (X_{11})	-0.125[NS]

Source: Primary Data

*Correlation is significant at the 0.05 level, [NS]=Not Significant

Table 12: Correlation between job satisfaction and financial/ budgetary constraints of farm scientists

N = 96

Constraints	r-value
Paucity of fund for research (X_1)	-0.388**
Lack of resources and inputs for research (X_2)	-0.255*
Provision of budget in time (X_3)	-0.210*
Lack of fund for attending seminar/symposium *etc.* in India and abroad (X_4)	-0.170[NS]
Lack of fund for conducting seminar/symposium *etc.* (X_5)	-0.165[NS]
Lack of incentives for trial/experiment (X_6)	-0.125[NS]

Source: Primary Data

**Correlation is significant at the 0.01 level, *Correlation is significant at the 0.05 level, [NS]=Not Significant

Table 13: Correlation between job satisfaction and communication constraints of farm scientists

N = 96

Constraints	r-value
Inadequate internet facilities (X_1)	-0.250*
Lack of communication with the expert of the other institutions for upgrading research information (X_2)	-0.245*
Lack of interdepartmental communication (X_3)	-0.218[NS]
Lack of availability of national and international journal in library (X_4)	-0.210*
Suppression of facts (X_5)	-0.110[NS]
Displacement of letters, parcels *etc.* due to negligence of subordinate staff (X_6)	-0.085[NS]
Noise in communication in the room due to sharing of room with other colleague (X_7)	-0.102[NS]

Source: Primary Data

*Correlation is significant at the 0.05 level, [NS]=Not Significant

Table 14: Correlation between job satisfaction and extension constraints of farm scientists

N = 96

Constraints	r-value
Lack of opportunities for training (X_1)	-0.402**
Lack of opportunities to study new course and new work (X_2)	-0.385**
Lack of scope to participate in Kisan Mela (X_3)	-0.175[NS]
Inadequate scope to participate in Kisan Gosthi (X_4)	-0.125[NS]
Constraints in demonstration in farmers field (X_5)	-0.123[NS]
Constraints in organizing farmers training programme (X_6)	-0.129[NS]
Lack of access to radio talk or T.V. talks (related to farm programme) (X_7)	-0.154[NS]

Source: Primary Data

**Correlation is significant at the 0.01 level, [NS]=Not Significant

Table 15: Result of the stepwise multiple regression

N = 96

Variables	R	R Square
Paucity of fund for research	0.431	0.186
Paucity of fund for research and Lack of coordination among different departments	0.489	0.239
Paucity of fund for research; Lack of coordination among different departments and Inadequate promotional opportunities	0.533	0.284[#]

Source: Primary Data

[#]While in natural science research it is not uncommon to get R square values as high as 0.99, a much lower value (0.10 – 0.20) of R square is acceptable in social science research (Gaur and Gaur, 2006)

to stumble to the job satisfaction of scientists. Rest attributes are negatively correlated with job satisfaction without any significant effect.

Flow of fund and curtails thereof both have effects over scientists job satisfaction invariable either positive way or negatively. A close perusal of Table 12 shows that paucity of fund for research (X_1), lack of resources and inputs for research (X_2) and provision of budget in time (X_3) all these three variables are negatively and significantly related to the dependent variable, whereas the fund for attending seminar etc. (X_4) and incentives for trial and experiment (X_6) are least not significantly related to job satisfaction.

It has been observed in Table 13 that the most of the variables are not significantly associated with the dependent variable i.e. job satisfaction, however only the variables X_1 and X_4 are negatively and significantly correlated with job satisfaction of the farm scientists, this may imply that internet facilities and library facilities are must as per the need of the scientists.

The extension activities are mandate part of the State Agricultural Universities (SAUs) and scientists have to be performed this irrespective to their rank and file. It is interesting to note as evidenced in Table 14 that lack of opportunities for training (X_1) and study, new course and new work (X_2) are negatively and significantly correlated with job satisfaction which indicates that acquiring training and studying new course and work are integral part of the professional and academic progressive of the scientists.

All the fifty-seven independent variables are included within six broad categories of constraints (i.e. administrative and managerial constraints, infrastructural constraints, situational constraints, financial and budgetary constraints, communication constraints and constraints related to extension activities) and job satisfaction of farm scientist as dependent variable. Stepwise multiple regressions have been employed and the results are presented in Table

15. It reveals that paucity of fund for research; lack of coordination among different departments and inadequate promotional opportunities has explained 28 per cent of the variance in job satisfaction. R-value i.e. multivariate equivalent indicates the strong relationship between the combination of independent variables and the dependent variable (job satisfaction). So it can be inferred that these three variables are most important constraints that stand in the way of getting the desired level of job satisfaction among the farm scientists.

Conclusion

There are several constraints faced by the farm scientists to perform their jobs. The problems with availability fund for research, insufficient modern scientific equipment, labour related problems, inadequate Internet facilities, lack of scope to communication with the expert of the other institutions, lack of coordination in multi-disciplinary research, lack of opportunities for obtaining training are the major constraints faced by farm scientists as evidenced by the results of the study. The factors like paucity of fund for research, lack of coordination among different departments and lack of promotional opportunities have overriding impact on the job satisfaction of the scientists. So based on the findings of the study it can be concluded that time bound promotional opportunities, intra and inter level coordination and availability of adequate fund for research are the steps to accrue the best performance of farm scientists.

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