

Full Length Research Paper

Effect of job characteristics on satisfaction and performance: A test in Egyptian agricultural extension system

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The current study tested core dimensions of the job characteristics model (JCM) among extension agents in Egyptian agricultural extension system. Agricultural extension system was chosen due to its importance in achieving sustainable agricultural strategy 2030. The paper examines the effect of core job dimensions on both affective responses represented by satisfaction, and behavioral responses represented by performance. Core job dimensions are skill variety, task identity, task significance, autonomy, and feedback. 230 extension agent were selected by formula. Data were elicited from extension agents who attended the weekly meeting which had been held in the sub-directorates in administrative districts during the period from September to October 2008 in Dakahalia and Qena governorates. Frequencies, percentages, arithmetic mean, reliability coefficient, multiple correlation, and multiple regression were used to analyze data statistically. Regression analysis revealed that performance was not related to the core job dimensions while satisfaction was. The findings of this study offer several implications for the JCM as a theory especially, in agreement with most research, due to ability of job characteristics to predict levels of job satisfaction. The managers of Egyptian agricultural extension system should put job characteristics into consideration for job redesign to enhance satisfaction and performance of extension agents.

Key words: Job characteristics, satisfaction, performance, agricultural extension.

INTRODUCTION

Much of the history of management and motivation theory is rooted in the desire to understand the factors that contribute to increased levels of job performance and workplace productivity. Not surprisingly, ratings of job satisfaction have consistently served as one of the highest correlates of job performance and productivity (Gardner and Pierce, 1998; Judge et al., 2001b). Accordingly, job satisfaction has been the most widely studied construct in the history of industrial/organizational psychology (Judge et al., 2001a).

Critical organizational outcomes have been associated

with work design elements. However, debate among researchers is active in terms of what outcomes are really determined by work design. More specifically, it seems to be accepted by researchers that the various job dimensions have their most significant effects on intrinsic motivation and satisfaction, while the effects on actual work behaviors such as performance and turnover are not well established (Ambrose and Kulik, 1999).

One of the most popular models outlining the central antecedents of job satisfaction is known as the job characteristics model (JCM). Hackman and Oldham's

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(1976) job characteristics model describes the relationship between job characteristics and individual response to work. The model identified five “core job characteristics”. These are:

- (i) Skill variety: The degree to which a job requires a worker to use different skills, abilities, or talents;
- (ii) Task identity: The degree to which a job involves performing a whole piece of work from start to finish;
- (iii) Task significance: The degree to which a job has an impact on the lives or work of other individuals;
- (iv) Autonomy: The degree to which a job allows a worker the freedom and independence to schedule work and decide how to carry it out;
- (v) Feed back: The degree to which performing a job provides a worker with clear information about his or her effectiveness.

The model goes on to specify the above five core job characteristics as determinants of three “critical psychological states”. These are experienced meaningfulness, experienced responsibility, and knowledge of results. In turn, the specified critical physiological states will lead to higher internal work satisfaction, high quality performance, high satisfaction with the work, and lower absenteeism and turnover. Hackman and Oldham (1975) developed the Job Diagnostic Survey (JDS) to measure these five core job characteristics. According to Boonzaaier et al. (2001), the JDS can be used to:

- (i) Diagnose jobs considered for redesign in order to establish the current potential of a job for enhancing motivation and satisfaction;
- (ii) Identify those specific characteristics that are most in need of enrichment;
- (iii) Assess the ‘readiness’ of employers to respond positively to improved jobs.

In Egypt the agricultural extension service is still largely the responsibility of the government through ministry of agriculture. Over the last decade, extension service started experiencing some challenges due to socio-economic changes and agricultural sector reforms taking place in the country. Extension agents are personnel who are responsible for meeting the goals of extension system.

Accordingly, the current study aims to further address the above concern. Specifically, this paper will test the impact of core job dimensions on satisfaction (affective response) and performance (behavioral response) of extension agents in Egypt. Despite the wide research interest, it seems that the agricultural extension environment, especially in the local level, did not receive adequate attention from work design research. So, another key objective of this study is to fill this knowledge gap. In this regards, the study is designed to assess the effects of the five core job dimensions according to

Hackman and Oldham (1980) on extension agents’ satisfaction and self-perceived performance.

Hypotheses

Based on the review of the literature and the general discussion, the following two hypotheses are advanced:

H₁: There is a significant positive relationship between the five core dimensions and extension agents’ job satisfaction.

H₂: There is no significant relationship between the five core dimensions and extension agents’ self-perceived performance.

METHODS

Population and sample

The population for this study was all extension agents employed by the extension service in Dakahalia and Qena governorates. 230 extension agents were selected for this study by Krejcie and Morgan (1970) formula. Data were elicited from extension agents who attended the weekly meeting which had been held in the sub-directorates in administrative districts during the period from September to October 2008.

Instruments

Extension agents’ perceptions of the five job characteristics and their level of job satisfaction were obtained utilizing a modified version of the job diagnostic survey developed by Hackman and Oldham (1980). The job diagnostic survey consists of seven different sections, the first five of which were used in this study. An additional section containing 8 questions created by the researcher was added to the end of the questionnaire to collect selected demographic characteristics of the respondents.

The JDS and job satisfaction consists of 27 items. Items were rated on a 5-point scale ranging from strongly agree to strongly disagree. The self-assessed performance scale comprised of 16 items on a 5-point scale ranging from strongly agree to strongly disagree.

RESULTS

Scale reliabilities

As a first step, scale reliability coefficients (cronbach alphas) for all measures adopted in this study were computed. Nunnally (1978) maintains that reliabilities which are less than 0.6 are considered poor, while those above are acceptable, while those above 0.8 are good. Results showed that reliability for JDS, satisfaction, and performance was 0.77, 0.74 and 0.72 respectively.

Descriptive statistics

Majority of the participants (81.3%) in this study were

Table 1. Descriptive statistics for the JDS.

Job characteristics	Mean statistic	Std. deviation Statistic	Skewness		Kurtosis	
			Statistic	Std. Error	Statistic	Std. Error
Task variety	4.1761	0.52914	-0.453	0.160	0.772	0.320
Task significance	3.9054	0.72202	-0.325	0.160	-0.521	0.320
Task identity	3.5696	0.80858	-0.202	0.160	-0.333	0.320
Task autonomy	2.8826	1.26047	0.118	0.160	-1.118	0.320
Feed back	3.0725	0.93275	0.329	0.160	-1.121	0.320

Table 2. Correlation matrix of all variables.

Variables	1	2	3	4	5	6	7
1-Task variety	1						
2-Task significance	0.495(**)	1					
3-task identity	0.474(**)	0.588(**)	1				
4-Task autonomy	0.208(**)	0.222(**)	0.359(**)	1			
5-Feed back	0.166(*)	0.394(**)	0.353(**)	0.151(*)	1		
6- Satisfaction	0.433(**)	0.468(**)	0.438(**)	0.113	0.362(**)	1	
7-Performance	0.236(**)	0.184(**)	0.227(**)	0.199(**)	0.115	0.073	1

*Correlation is significant at the 0.05 level ** Correlation is significant at the 0.01 level.

male, having an average of 44.3 years. This was a well educated sample; 18% of respondents held masters or doctoral degrees, the remainder holding either bachelors or associate degrees. Participants had been with ministry of agriculture an average of 18.3 years, serving in extension service for an average of 12.7 years. The descriptive statistics for the JDS scales for extension agents are set out in Table 1. The variability of the means, standard deviation, skewness and kurtosis reflects how the respondents responded to the different scales. The variability indicates that the data which were collected and analyzed were normally distributed.

Correlations

The correlation matrix among all variables in this study is summarized in Table 2. There is no correlation between the dependent variables ($r = 0.073$). Most of the correlation coefficients between satisfaction and job dimensions were statistically significant and moderately correlated except for task autonomy ($r = 0.113$). Meanwhile, self-perceived performance is significantly and low correlated with job dimensions except for feed back ($r = 0.115$).

Hypotheses testing: Multiple regression

Two model hierarchical linear regression analyses were performed to test the two hypotheses of this study. Table 2 shows results of the multiple regression with

satisfaction as dependent variable and the five core dimensions as independent variables. The first hypothesis was that job characteristics factors would predict levels of job satisfaction. To test this hypothesis, the five job characteristics factors of task variety, task significance, task identity, task autonomy and feed back were entered into the first regression model as it shown in Table 3. All five variables except task autonomy were found to be significant, positive predictors of job satisfaction levels. Combined, the five job characteristics accounted for 33% of the variance in job satisfaction. These findings provide partial support for the first hypothesis, with the job characteristics of autonomy failing to demonstrate a clear factor predictor. Results of the second model are shown in Table 4. The dependent variable was self-perceived performance, and the five core dimensions as independent variables. The second hypothesis was that job characteristics factors would not predict levels of self-perceived performance to test this hypothesis. Unlike the first model all five variables except for task variety were found to be non significant, positive predictors of self-perceived performance levels. Combined, the five job characteristics accounted only 8.8% of the variance in self-perceived performance. These findings provide partial support for the second hypothesis except for task variety which succeeded to demonstrate a clear factor predictor.

DISCUSSION

The first regression model's finding that all job

Table 3. Results of multiple regression between job satisfaction as dependent variable and core job dimensions.

Analysis of variance						
Model		Sum of squares	Df	Mean square	F	Sig.
1	Regression	42.479	5	8.496	22.078	0.000
	Residual	86.198	224	0.385		
	Total	128.677	229			

Variables in the equation						
Model		Unstandardized coefficients		Standardized coefficients	T	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	-0.024	0.340		-0.071	0.944
	Task variety	0.344	0.093	0.243	30.704	0.000
	Task Significance	0.193	0.076	0.186	20.529	0.012
	Task identity	0.156	0.068	0.168	20.278	0.024
	Task Autonomy	-0.041	0.035	-0.069	-10.181	0.239
	Feedback	0.161	0.049	0.200	30.301	0.001

Multiple R: 0.575, R Square: 0.330, Adjusted R Square: 0.315, Std. Error: 0.62033.

Table 4. Results of multiple regression between self-perceived performance as dependent variable and core job dimensions.

Analysis of variance						
Model		Sum of squares	Df	Mean square	F	Sig.
2	Regression	7.431	5	1.486	4.347	0.001(a)
	Residual	76.591	224	0.342		
	Total	84.022	229			

Variables in the equation						
Model		Unstandardized coefficients		Standardized coefficients	T	Sig.
		B	Std. Error	Beta	B	Std. Error
2	(Constant)	0.796	0.320		20.485	0.014
	Task variety	0.179	0.087	0.156	20.047	0.042
	Task significance	0.011	0.072	0.014	0.158	0.875
	Task identity	0.065	0.064	0.087	10.016	0.311
	Task autonomy	0.061	0.033	0.127	10.853	0.065
	Feedback	0.022	0.046	0.034	0.482	0.630

Multiple R: 0.297, R Square: 0.088, Adjusted R Square: 0.068, Std. Error: 0.58474.

characteristics except task autonomy significantly and positively predicted levels of job satisfaction provides support for the first hypothesis, as well as the applicability of the JCM in agricultural extension work context. In the workplace, regardless of title, position or skill set, employees seem to prefer and respond positively to environments characterized by the four factors of task significance, task variety, task identity and feedback. Employees express higher levels of job satisfaction in jobs where they also believe that their tasks are important for the welfare of others, where opportunity is given to perform a variety of tasks, where involvement in projects is from inception to completion so

as to facilitate understanding, and where regular feedback is provided concerning the quality of work performance. Efforts to create workplaces characterized by high levels of job satisfaction and workplace productivity, therefore, should design jobs that maximize these job characteristics.

The job characteristics of autonomy did not load cleanly on a latent factor. Although, everyone needs a degree of individual autonomy, but to measure individual autonomy in team setting, it may be important to frame individual autonomy in the context of team involvement. The failure of autonomy to load on its own factor in this study is at least partly due to the difference in meaning between

individually based and team based autonomy. The second regression model showed the what we predicted regarding self-perceived performance. In this study, all of the core job dimensions, except for task variety came out as non-significant related to performance. Performance in this case is related to skill variety, but not other core job dimensions. This is another interesting result. It seems that extension agents perceive task variety as driver for performance. Variety of extension services is incentive for extension agents to use and acquire different skills and abilities which reflect on the performance, specifically they see task variety is a source of satisfaction. The last conclusion about satisfaction-performance relationship. The findings showed no correlation between them. It seems that satisfaction not always follows performance. This result ensure that satisfaction in such a heavy expatriate environment could be related more to extrinsic factors such salaries, benefits, contract renewals, etc.

Ideas for future research

This study has helped fill a gap in the research literature for the applicability of the JCM to extension work, however, much more remains to be studied in this area. Future studies looking at the JCM would benefit by being longitudinal in nature, to assess the stability of perceptions. In addition, this study used self-perceived performance which is a limitation and it would be of value to try to independently measure performance. Also, worthy of scholarly attention is the assessment of effects that experience, level of skills, career aspirations have on satisfaction and performance. In addition, role of growth needs strength as a moderator between job characteristics and satisfaction could be examined to know how to motivate extension agents to recognize their need of growth, and how to create jobs that fulfill this basic human need.

Conclusion

This study has provided support for the applicability of the JCM to agricultural extension work. By broadening the viability of the job characteristics of task significance, task variety, task identity, and feed back, it gives credence to theories espousing their universal importance across work setting. So far as the evidence at this early stage suggests, Egyptian agricultural extension system will benefit by looking into the impact of job design by training their managers to acquire redesign skills. There might be added value in terms of satisfaction and performance of extension agents if extension system refines the process by which they design tasks and jobs.

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