

Herzberg Revisited: Dimensionality and Structural Invariance of Herzberg's Two Factor Model

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Studies on Herzberg's two factor theory of job satisfaction show contradictory findings with respect to its dimensionality and external validity. Studies question the orthogonality of motivators and hygiene factors, socio-cultural invariance of the theory and place of monetary aspects in the two dimensional set up. The current study was carried out to investigate these issues in Indian conditions. Questionnaire measure was used to collect data from 144 middle level managers selected randomly from a list of participants of management development program conducted by a business school over a period of one year. The questionnaire consists of 14 attributes and each one of which was to rated by the managers for its importance to overall job satisfaction of their current job on a five point scale. Data were analyzed using exploratory factor analysis with principle component factoring and varimax rotational procedure. Three independent factors namely, job content, organizational context and rewards and working conditions were extracted and which was further validated by confirmatory factor analysis. The findings suggest a three factor model including monetary attributes of job as a separate factor, cross-loading of many attributes across job content and context factors and contextual dependence of the model. The importance of socio-cultural milieu and monetary aspects in managing employee motivation is discussed.

Keywords: Job satisfaction, Hygiene factors, Motivators.

Studies on two-factor theory

Herzberg (1959, 1987) in his two-factor theory of job satisfaction postulated motivators and hygiene factors in explaining job satisfaction at work place. Motivators include recognition, achievement, growth opportunities, advancement, responsibility, and the work itself. Hygiene factors include salary, interpersonal relations at work, supervision, company policies and administration, working conditions, and job security. According to this theory the presence of motivators results in job satisfaction and the presence of hygiene factors does not result in increase of job satisfaction, but only reduces or eliminates job dissatisfaction of the employees. This conceptualization of Herzberg challenged the hitherto existing views that job satisfaction and job dissatisfaction as opposite poles of a single continuum. The two-factor theory posits Job satisfaction and job dissatisfaction as two orthogonal dimensions and factors influencing job satisfaction are different from

those influencing job dissatisfaction. Hence to motivate employees, organizations have to deal with one sets of factors for increasing job satisfaction and entirely different set of factors for reducing job dissatisfaction. This theory has been very popular among scholars and practitioners because of its simplicity and its common-sense approach. The basic tenets of the two-factor theory provide insight into the areas managers can influence in order to increase the satisfaction of their employees, albeit the empirical support for this conceptualization is scanty, weak and often contradictory.

Plethora of studies conducted during 60s and 70s to test the empirical validity has shown contradictory results and did not convincingly support the two-factor model (Wernimont, 1966; Hulin, 1971 and Korman, 1971). The theory is found to be impractical because distinguishing between hygiene and motivator factors is not so simple and straightforward as they are highly related thus suggesting a single continuum as

opposed to a dual continuum (Ewen, 1964; Wolf, 1967; McGreal, 1968; and Locke, 1976). In a study on retail sales personnel, among factors influencing Job satisfaction only recognition was found to be a motivator as defined by Herzberg's two-factor theory. The other factors include, company policy, and money (Winer & Schiff, 1980; Lucas, 1985).

Many criticisms were directed towards the critical incidence methodology adopted by Herzberg (Brayfield, 1960 and Soliman, 1970). The critical incidence methodology is oversimplified and does not represent general population (Smerek & Peterson, 2006). Subjects' responses to critical incidence method were retrospective and inconsistent (Sachau, 2007). Five different versions of the two-factor theory have been identified and none was found to stand the tests of validity by two or more different methods of testing (King, 1970). The theory generates multiplicity of hypotheses and have to be tested using multiple ways (Gardner, 1977). Herzberg's views on causality of satisfiers and dissatisfiers were questioned by Farr (1977) using new methods suggested in the field of occupational psychology.

Many studies have shown two-factor model as context dependent. Applying this model in an Engineering Construction Company in South India, Joseph (1974) found that factors which cause satisfaction for one employee in one culture need not necessarily be the same in other cultures. Cross-cultural differences were found in the factors influencing job satisfaction. Hygiene factors were seen to influence Job satisfaction among Thai (Sithiphand, 1983) and Yemen (Al-Mekhlafil, 1991) employees. In a study comparing public and private sector employees using a questionnaire method, Maidani (1991) found that in addition to motivator factors hygiene factors were also found to influence job satisfaction questioning the dual continuum concept. Among technical personnel at a U.S Department of Energy Tamosaitis and Schwenker (2002) found that hygiene factors are major factor influencing employee retention which is inconsistent with Herzberg's theory. Islam and Ismail, (2008), found that Malaysian workers when compared with American workers

are generally more concerned about hygiene factors (money and working conditions) than about motivators (full appreciation of work done). Among sales personnel in Malaysia, Teck-Hong and Waheed(2011) observed that hygiene factors had a strong influence on job satisfaction. Similar findings were reported when applied to Korean Army Foodservice operators (Hyun & Oh, 2011). Lower grade employees consider hygiene factors such as pay, incentives, and reward as significant factors for job satisfaction but once they move to a higher grade they don't consider these so much and instead prefer motivator factors like power and status. Job tenure and number of years working as full-time employees also showed differential impact on Job satisfaction (Ahmadi, Jafari & Homauni, 2011).

Do pay and benefits matter?

Many studies have shown that employees give greater emphasis to monetary factors. Pay, one of the Hygiene factor under Herzberg scheme is shown to be strongly related to satisfaction than dissatisfaction (Hullin & Smith, 1967; and Lawler, 1973). Based on a study of 1,000 employees, Kovach (1987) showed that younger workers with low incomes are more concerned about money, whereas older workers with high incomes and management positions are motivated more by job security, interesting work and recognition. A study on Caribbean hotel workers identified higher wages, working conditions and appreciation for their work as primary motivating factors (Charles & Marshall, 1992). Desire for money is rated higher by young workers in Far East and Middle East as compared with those in North America and South America (Furnham, 1994). Sloan, (2002), found that persons who had insufficient money and wanted more money considered money as the most satisfying aspect of job. Tang et al., (2004), argued that love for money reflects an employee's wants and values, and asserted that someone who values money highly will be satisfied with his salary and ultimately his job and end up becoming high productive worker when he receives a desired raise. Extent that an individual is satisfied with his/her work directly depends on the presence of factors such as

pay, bonus, perks, and other circumstances that imply monetary benefits (Furnham & Eracleous, 2009). A study among front-line employees at a retail store in Australia showed that pay and benefits are strongly associated with job satisfaction (Stringer et al, 2011).

Currency of two-factor model

The studies reviewed have unequivocally questioned the two-factor model. Cross-loading of attributes across motivators and hygiene dimensions, found in many studies imply either sufficiency of one factor or need to extract more than two factors to explain job satisfaction. Structural invariance of two factor model across geographical, socio-cultural, occupational and demographic divergence has been strongly questioned by many studies. No conclusive evidence can be found with respect to temporal invariance of the model as employees' attitudes and motives have undergone vast and radical changes due to the advent of technology, globalization and shift towards services which creates newer jobs, enhances quality of life. The current study is designed to answer these questions by simply looking at how the attributes used in Herzberg's model are grouping themselves. As this study was conducted in India about 5 decades later than the Herzberg's original study, results similar to that of Herzberg's original model will help to dispel uncertainties regarding dimensionality and invariance of the Herzberg's model. If on the other hand the results differs from the original conceptualization than the model has to be relooked at and revised.

Method

Research Context:

The current study was conducted during 2012-13. The participants were middle level managers drawn from companies located in central and southern India. All these companies are listed companies and professionally managed. Managers who constitute the sample for this research were participants in various management development program organized by a business school in which the first author is a teaching faculty. The managers were predominantly from heavy engineering, FMCGs, Banking and Finance, communication technology companies.

Sample:

The sample consists of 144 middle level managers randomly selected from a list of 690 managers. The distribution of sample is as follows: 102 males and 42 females; 36 marketing, 44 finance and 64 IT organizations. The average age of the sample is 36.96 with a standard deviation of 4.49.

Instrument used:

For assessing the job attributes a 14-item scale, developed by the investigator was used. Each item in the scale characterizes an attribute, which is to be rated in a 5 point Likert scale ranging from 'strongly agree' to 'strongly disagree'. Test-retest reliability administered within a gap of two weeks is .846. Content validity of the scale was assessed by 10 OB and HRM experts. Each item was rated for its relevance for which the measure is to be used. The content validity ratio ranged from 1 to .89 suggesting that a greater majority of judges have rated all items as very relevant.

Data collection and analysis

Data were collected through e-mail. From list of managers participated in the management development programs. About 300 managers were randomly selected and the questionnaires were mailed to them. Managers were asked to rate the attributes in terms of how much important they are in contributing to overall job satisfaction in general. 163 questions were returned and out of which only 144 were fully completed. Factor analysis was used to understand whether the responses to the 14 job attributes can be grouped and reduced to few latent factors. Principle component factoring with varimax rotation was used, on the intercorrelation matrix of 14 variables. Exploratory factor analysis results were further verified by confirmatory factor analysis. Model building approach was followed in confirmatory factor analysis. Based on modification indices and conceptual rationality, few modifications were made to basic model, until satisfactory fit indices were reached. These modifications are mainly in the nature of accounting for error covariance.

Table 1. Inter-correlation Matrix of variables and KMO and Bartlett's Tests

Attributes	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 pay and incentives	1.000													
2 advancement	.020	1.000												
3 working conditions	.138	.288	1.000											
4 recognition	.012	.305	.244	1.000										
5 superior	.141	.271	.161	.129	1.000									
6 feedback	.062	.226	.257	.195	.330	1.000								
7 coworker	.164	.160	.132	-.029	.138	.336	1.000							
8 autonomy	.084	.283	.120	.282	-.051	.289	.208	1.000						
9 company policy	.120	.187	.201	.218	.150	.302	.315	.317	1.000					
10 responsibility	.044	.308	.169	.376	.113	.412	.307	.353	.440	1.000				
11 stock options	.134	.190	.146	.159	.151	.263	.097	.083	.389	.272	1.000			
12 challenging work	-.131	.536	.138	.307	.232	.311	.082	.134	.058	.371	.271	1.000		
13 travel opportunities	.228	.108	.216	-.049	-.076	.016	.047	.005	.153	.076	.340	.079	1.000	
14 learning new skills	-.069	.558	.242	.270	.124	.124	.124	.288	.233	.536	.293	.482	.143	1.000

Kaiser-Meyer-Olkin Measure of Sampling Adequacy: .710

Bartlett's Test of Sphericity : Approx. Chi-Square = 491.249 (df = 91), p = .000

Table 2. Rotated factor matrix with communalities

	Factors			Communalities
	1	2	3	
Challenging work	0.791	0.061	0.044	0.632
Learning new skills	0.765	0.130	0.186	0.636
Advancement	0.734	0.165	0.145	0.587
Recognition	0.528	0.256	-0.052	0.347
Coworker relations	-0.093	0.685	0.105	0.489
Feedback	0.204	0.681	0.056	0.509
Company policy	0.091	0.630	0.330	0.514
Responsibility	0.486	0.572	0.096	0.572
Autonomy	0.243	0.552	-0.061	0.368
Superior relations	0.206	0.313	0.060	0.144
Travel opportunities	0.051	-0.147	0.829	0.711
Stock options	0.276	0.168	0.624	0.494
Pay and incentives	-0.300	0.261	0.524	0.433
Working conditions	0.264	0.206	0.398	0.271
Eigenvalues	2.663	2.333	1.710	6.706
Percentage of trace	19.02	16.67	12.21	47.90

Table 3. Confirmatory factor analysis

Manifest variables	Loadings	Latent factors	Construct Reliability	Variance extracted
Challenging work	0.670	Job Content	0.733	0.417
Learning new skills	0.704			
Advancement	0.742			
Recognition	0.414			
Coworker relations	0.445	Organizational Context	0.709	0.296
Feedback	0.609			
Company policy	0.553			
Responsibility	0.712			
Autonomy	0.479			
Superior relations	0.407	Rewards and Entitlements	0.500	0.207
Travel opportunities	0.468			
Stock options	0.577			
Pay and incentives	0.312			
Working conditions	0.424			

Model fit statistics

Model Chi-Square	81.3	df = 64, p = 071
GFI	.931	
CFI	.959	
PCFI	.674	
RMSEA	.044	.000 to .070

Results and Discussion

Tables 1 and 2 show correlation and rotated factor matrices respectively. Bartlett Test of Sphericity (Chi-square = 491.25, df = 91, p = .000) and KMO Measure of sampling adequacy (.710) show the presence of sufficient amount of significant correlation coefficients. Examination of eigenvalues and scree plot suggested extraction of three factors, which put together explain 47.90% of variance of 14 variables. Examination of the factor loadings suggests three distinct factors with variance explained 19.02%, 16.67% and 12.21% respectively. For a sample size of 144, loadings above .30 was considered significant.

Naming of factors was done by assessing the variables that show high loading in each factor. Thus the first factor is loaded with challenging work (.791), learning new skills

(.765), advancement (.734) and recognition (.528). The common underlying latent factor that traverse through these variables seems to be job content. Hence the factor is named so. The variables loaded in the second factor are coworker relations (.685), feedback (.681), company policy (.630), responsibility (.572), autonomy (.552), and superior relations (.313). Since these variables portray important aspects of organizational climate and management style, the name organizational context seems to be appropriate. Variables loaded in the third factor are travel opportunities (.829), stock options (.624), pay and incentives (.524) and working conditions (.398). The variables loaded imply some kind of common thread running through which could be financial and comfort part of work life. Hence, this factor is named as rewards and working conditions.

Validity test on the factor loadings obtained from exploratory procedure were performed using confirmatory factor analysis procedure and the results are displayed in table 3 and the accompanying figure. Model chi-square is 81.3, which at 64 degrees of freedom falls short of significance. Other overall fit indices such as GFI (.931) and CFI (.959) are within the permissible level showing better fit. Model parsimony was assessed by PCFI, which is .674

suggesting simplicity of the model. Badness of fit was assessed by RMSEA. This value is .044 within 90% confidence range between .000 and .070. All fit indices show excellent fit of model. Construct reliability of the three latent factors are .733, .709 and .500 respectively and the variance extracted are .417, .296 and .207 respectively.

The findings reveal that job attributes can be grouped under three broad categories, namely job content, organizational context and rewards and working conditions. These findings are at variance with the original conception of Herzberg and consistent with many studies cited in the literature. We began our investigation by questioning two important contentions of Herzberg's theory namely its dimensionality and its structural invariance. The results imply that the questions we raised are legitimate at least in the present research context and needs deeper examination. The factorial structure of job motivation need not strictly be confined to two factors and the number of factors and job attributes that go into each factor are context dependent.

According to our results a separate factor to account for employees' attitude towards monetary aspects of job is needed to explain job satisfaction at workplace. In the classical theory, the monetary attributes were classified under hygiene factor and the presence of which were considered essential for preventing the employees from becoming dissatisfied with their jobs. However, in the present study rewards and working conditions have emerged as a separate factor along with job content (motivators) and organizational context (hygiene) factors. It accounts for 12.21% of the variance in all 14 variables and explains 25.49% of the total variance explained by all the three factors. The findings reflect the mood of the people in the current context. Money is considered as status symbol and a measure of achievement. In the present socio-economic milieu, rewards and working conditions are no longer a part of contextual factors but qualify as a separate factor highlighting the importance given by both the employees and the employers to economic status and well being. Organizations use attractive

compensation packages to attract, motivate and retain talented employees. The old dictum 'money does not matter' is changed into 'money does matter'. Importance of money in motivation employees has been documented by many recent researches (for example: Tang et al, 2004 and 2008; Piccolo et al, 2010; Young, Beckman & Baker, 2012). Escalating compensations packages and offers made by companies to their senior level managerial employees reinforce the importance of money. The very fact that rewards and working conditions emerged as a separate factor does not necessarily mean that it will have a direct effect on job satisfaction. It could have moderating or mediating influence on job satisfaction. Studies on Love of Money by Tang and his coworkers have aptly brought out this possibility. Well designed and controlled cross cultural investigations are needed to fully understand the role of salary and other monetary factors associated with job satisfaction and work motivation.

The attributes that go with motivators and hygiene factors in classical Herzberg's theory also needs a relook. The organizational contextual factor in the present study is characterized by an assortment of variables such as coworker relations, feedback, company policy, responsibility, autonomy and superior relations. Among these feedback, responsibility and autonomy are variables that characterized the job motivators (Job content factor) in Herzberg's original conceptualization. But in this study they are grouped under context factors (Hygiene factors of Herzberg). These three variables namely, feedback, responsibility and autonomy, if seen in the present context are more organization related than job related. They manifest more in the way organizations policies, systems and procedures are conceived and executed. They are embedded in culture and governance patterns of the organizations than merely experienced by doing the job. (Argyris & Schon, 1978; Schein, 1997; Kreiner & Ashforth, 2004). Changing organizational structures and governance patterns do have an impact on what one can derive from doing a job and what is given by the organization. Aspects that determine job satisfaction may change depending on what

organizational form in which one operates. Studies are needed to examine these aspects in depth.

In line with plethora of previous studies, this study also negates structural invariance contention of classical Herzberg's theory. The study highlights the contextual nature of job satisfaction in organizations. It questions 'one right way' approach and suggest that organization have to understand the context within which their employees work and try different ways to motivate employees to bring out their full potential. Employees' needs and desires may be influenced by the socio-cultural milieu within which they are embedded and the understanding of this is very important for human resource managers in designing jobs, managing and rewarding performance.

Conclusions

Two-factor approach of Herzberg is insufficient to explain the job satisfaction and work place motivation. Monetary factors do play a significant role in job satisfaction.

The clustering of job attributes as motivators and hygiene factors is context dependent and organizational forms may have a greater impact on what one can derive from the job itself and what organizations have to provide in terms of culture and governance patterns.

Determinants of job satisfaction are not context invariant and the socio-cultural milieu within which an organization operates influences what attributes are perceived as valuable and what are not.

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Designing a Feedback Questionnaire for the Evaluation of Postgraduate Courses

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We discuss the development of a feedback questionnaire for course participants at the Austrian Academy of Psychology (AAP). The proposed German language questionnaire is suitable for all kinds of courses in adult education, although it was developed primarily to be used in postgraduate courses of Clinical and Health Psychology. It is divided into three main components (P-E-T): "Participants" (interests, goals, meaningfulness of the course content, social conditions in the learning group and practical relevance), "Environmental conditions" (room, provider of the course, course material) and "Teacher" (social competence and skills in teaching). The dimensions meet the quality criteria of objectivity, reliability and validity and they are economic and useful. Therefore, the developed questionnaire is a sound possibility to gather the participants' attitudes and thus to maintain a high level of quality in the teaching process.

Keywords: Postgraduate training, evaluation, questionnaire.

The main goal of this study was to develop a sound feedback questionnaire for postgraduate courses in adult education. It was important that the questionnaire shows good psychometric qualities and it fulfils criteria of feasibility and practicability. Due to lack of motivation feedback questionnaires at great length are not filled out properly. Our target group in the Austrian Academy of Psychology (AAP) are mainly psychologists who do postgraduate in-depth courses and seminars in various fields of psychology (e.g., Clinical and Health Psychology, Traffic Psychology, etc.).

Postgraduate education has been gaining importance over the past decades, especially in the various fields of psychology and psychotherapy. From a review of the literature it was evident, however, that there is a lack of instruments for evaluating postgraduate courses on a scientifically sound basis. Frequently, evaluation questionnaires had been developed intuitively by a training institution and are used without examination of their psychometric qualities. However, such instruments cannot be expected to fulfil their purpose properly.

The use of proper evaluation or feedback instruments is an important asset to the quality of the educational programme and can substantially contribute to continuous improvement of the courses (Palmer, 2012; Wright & Jenkins-Guarnieri, 2012). An important asset of "good teaching" is the enhancement of the students' learning motivation. According to Self-Determination Theory (Deci & Ryan, 1993), intrinsic motivation can be achieved if an individual is willing and able to reach his or her goals by a certain action. Thus, motivation is being influenced by an individual's need for autonomy, competence but also by his or her need for social involvement or attachment (Deci & Ryan, 1993). All these factors contributing to learning motivation also depend on situational influences (Schaper, 2004) and on a teaching style focussing on a balance between challenging tasks and the skill level of participants (Csikszentmihalyi & Schiefele, 1993).

In summary, the important factors for education are the teacher (Kraft, 2005; Rindermann, 2001, 2003), the course topic and