The Impact of Intrinsic Job Satisfaction and Extrinsic Job Satisfaction on Product Innovation: A Case of Iraqi Public Universities

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Abstract: *Higher education sector of any country acts as a backbone for that country as it provides skilled human resource. Job satisfaction play important role in stimulation of creativity among employees and establishment of innovative environment in organization. The higher education in Iraq faces many challenges, such as employee morale, brain drain in the sector, ranking of universities in the world. In academic context, the academic satisfaction has a critical role in achieving success. Therefore, the purpose of this study is to examine the influence of Job satisfaction on innovation in higher education in Iraq. The quantitative data was collected through survey instrument. The population for this study consisted of academic staff in 10 public universities distributed throughout Iraq. The sample consists of 280 academic staff members selected through random sampling technique. The results found that there are significant strong relationships between the academic satisfaction (intrinsic job satisfaction, extrinsic job satisfaction) and the product innovation. Thus, the study contributes to the existing pool of knowledge on the empirical impact of job satisfaction on innovation. Different aspects of these variables were tested, so as to provide a wider and more comprehensive lead to understanding of the factors or elements that affect public universities in Iraqi higher education.*

Keywords: Job Satisfaction, product innovation, Higher Education and Iraq

1. Introduction

Higher education sector today are facing global challenges from a dynamic environment characterized by rapid technological change. Academic institutions need to develop their abilities and respond to these demands like business organizations [1] .Higher education in developing countries like Iraq is facing rapidly changing challenges that require innovation [2] From 1950 till 1990 Iraq had one of the most advanced higher educational systems in the Arab world [3]. Furthermore, Iraqi higher education system suffered brain drain phenomenon as well and many of the intellectuals and scientists left the country. With lack of contact from the outside world Iraq HEIs suffered in terms of research and development [3].Public sector organizations are burdened by an added dimension of restraints and restrictions compared to private sector entities. "Government operates though networks of interdependent organizations rather than through independent organizations which simply pursue their own objectives" [4] .Stringent central agency constraints to minimize corruption and transparency can create barriers to innovation [5]. Public sector organizations and bureaucracies are usually structured for stability, reliability, and consistency and, therefore, are set up to resist change or disruption of status quo [6]. Personnel compensation and incentives in public organizations are generally strictly governed by rules and regulations. Consequently, public sector personnel systems are not optimally structured to reward employees for taking risks associated with innovation, while the systems are traditionally quick to punish them for unsuccessful attempts [7]. [8] claimed that the primary focus of the public sector is to preserve budgets rather than achieve outcomes, because the objective of public sector organizations tends to be too broad and vague. Therefore, public sector employees are not

incentivised to innovate and experiment. According to [9], public sector organizations generally tend to be internally focused and "poor at learning from outside" (p. 28). This behavior seems to emanate from a popular perception that public sector organizations are radically different and distinctive from other types of organizations [10] . The innovative process is often controversial, competes with alternative courses of action, and poses a threat to vested interests [11]. Innovative activities create change, increased risk, uncertainty, and imprecision [12]. As such, most innovations in organizations inevitably experience resistance and "often becomes a subject of debate within an organization" [7]. Therefore, innovators who initiate such effort can be outcast and viewed with distaste within an organization. Phases of Innovation Phases of Innovation Individuals who exhibit 'out of the box' behavior within an organization are often labeled and ostracized as 'rebels' and are frequently marginalized [9]. So, who are these innovators? Why do people innovate in the public sector organizations, "where risks are many and the rewards can be limited?" [13] . Key to the implementation of innovation in any technology organization is the ability of leaders to be open to change, whether originating from within, or as is often the case, being observed and imported from other organizations [14]. This includes technology higher education, which in its overall strategy and goals parallels the industries for which it is preparing tomorrow leaders. The action of leadership guided implementation is in part what distinguishes the novel idea from the actual, successful long-term change program [15, 16]. The research team theorizes that technology higher education, however, faces unique barriers to successful change implementation. Technology industries by their nature rely on rapid responses to new ideas and seek to foster a culture of innovation in order to stay at

the forefront of their field [17], and technologies become both tools and frameworks for the way individuals and societies live [18]. Higher education has traditionally been less able to pursue a rapid pace of change and encourage revolutionary innovation within its functional parameters; this is most often due to regulator/accreditation requirements, overall pace of change within the broader university community, and the nature of universities as more established institutions in the organizational life cycle rather than entrepreneurial in nature [17]. As such, higher education programs in Technology must strike a difficult balance when designing and implementing organizational change efforts, and the nature of the systems at play and the potential factors contributing to success or failure of this balance should be identified and modeled. In line with the view suggested in the literature, the study formulates the research hypotheses as below.

H1: There is significant relationship between Intrinsic Job Satisfaction and product innovation.

H2: There is significant relationship between extrinsic Job Satisfaction and product innovation

H3: There is significant impact between Intrinsic Job Satisfaction and product innovation.

H4: There is significant impact between extrinsic Job Satisfaction and product innovation.
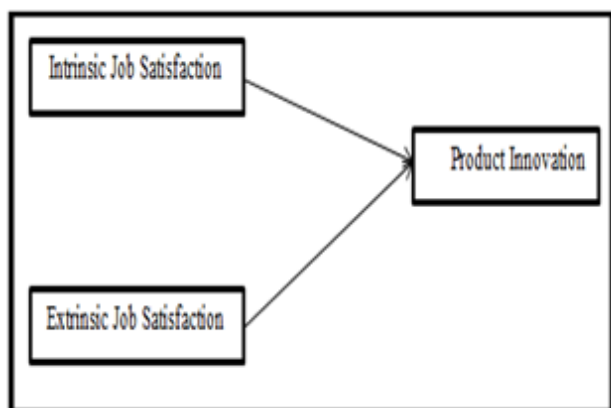

Figure 1: the Proposed Model of Study

2. Methodology

2.1 Sample and Data Collection

This correlation research attempted to describe the relationship among the variables. The quantitative data was collected through survey instrument. The population for this study consisted of academic staff in 10 public universities distributed throughout Iraq. The sample consists of 280 academic staff members selected through random sampling technique. The questionnaire applying five-point Likert scale.

2.2 Job Satisfaction Questionnaire

To measure the job satisfaction of the academicians the short form of the Minnesota Satisfaction Questionnaire [19], was used. The Minnesota Satisfaction Questionnaire (MSQ) is one of the most widely used instruments in the measurement

of job satisfaction [20] and its validity and reliability has been proven over the 40 years that it has been in use. The MSQ short form consists of 20 items/facets which measures of job satisfaction, [21] found that a two factor model (intrinsic and extrinsic job satisfaction) is superior to a one-factor model (total job satisfaction). [22] confirmed a two-factor model of job satisfaction, consisting of Intrinsic and Extrinsic Job Satisfaction, in a sample of South African Police Service (SAPS) members. Alpha coefficients for the two scales of the MSQ short form were 0,84 and 0,89 respectively [22]. namely intrinsic satisfaction, and extrinsic satisfaction. Of these 20 facets, 12 measure intrinsic factors/occupational conditions (ability utilization, achievement, activity, authority, creativity, independence, moral values, responsibility, security, social status, social service, and variety) and 8 of them measure extrinsic factors/environmental conditions (advancement, organization policies and practices, compensation, recognition, supervision-human relations, and supervision-technical) [23, 24]. Respondents were asked to express the extent of their satisfaction with each of the 20 items on a five point likert scale ranging from 1=very dissatisfied to 5= very satisfied.

2.3 Product Innovation Questionnaire

Questionnaire has been measured using 6 items adapted from [25]. Using a 5-point Likert scale, Respondents are asked to indicate the extent of their agreement with each item ranging from 1 (strongly disagree) to 5 (strongly agree).

3. Findings

Reliability was tested for each variable of job satisfaction (intrinsic job satisfaction, extrinsic job satisfaction and product innovation). To measure the consistency of the scale, Cronbachs alpha was used as a measure of reliability. After factor loading was carried out, , reliability coefficients of 0.7 or more are considered adequate for social studies table 1 showed an acceptable range of reliability where the results score.

Table 1: The Reliability result variables

No.	Variables	Number of items	Cranach's Alpha
1	Intrinsic job satisfaction	12	.85
2	Extrinsic job satisfaction	8	.79
3	Product innovation	4	.77

3.1 Correlation Analysis

In this section, Pearson Correlation Coefficient was used to determine the relationship among the study variables. In addition, it identifies significant that opposites the potential value of the error from first type, and it is the amount probability uncertainty value is at significance (.05) and (.01) to determine the moral differences between the study variables. The statistical results given in Table2 show that there are significant correlations between the job satisfaction (extrinsic job satisfaction, intrinsic job satisfaction) and product innovation. The details are as in the following.

Table 2: The Correlation result

Variable	1	2	3	Mean	SD
IJS	(.85)			3.56	.55
EJS	.67**	(.79)		3.56	.56
PT	.46**	.47**	(.77)	3.29	.78
NO. of items	12	8	4		

**significant < 0.01

(IJS Intrinsic job satisfaction, EJS Extrinsic job satisfaction,
PT product innovation, SD Standard Deviation)

As the statistical results shown in table 2, Pearson Correlation Coefficient value on the relationship between (Intrinsic job satisfaction and Extrinsic job satisfaction) and product innovation is (Intrinsic job satisfaction= .46**, Extrinsic job satisfaction= .47**) at a significance smaller than 0.01. It is a significant positive correlation. This means (Extrinsic job satisfaction, intrinsic job satisfaction) has strong significant relationship with product innovation. This in turn supports the first hypothesis mentioned below.

3.2 Testing Hypothesis

H1: There is significant relationship between Intrinsic Job Satisfaction and product innovation.
H2: There is significant relationship between Extrinsic Job Satisfaction and product innovation

Pearson Correlation Coefficient value on the relationship between Intrinsic job satisfaction and product innovation was (.46**) at a significance smaller than 0.01. It is a significant positive correlation. This means intrinsic job satisfaction has strong significant relationship with product innovation. This in turn supports the hypothesis mentioned above. Pearson Correlation Coefficient value on the relationship between Extrinsic job satisfaction and product innovation was (.47**) at a significance smaller than 0.01. It is a significant positive correlation. This means extrinsic job satisfaction has strong significant relationship with product innovation. This in turn supports the sub hypothesis mentioned above.

3.3 Regression Analysis

A series of linear regression analyses was conducted to measure the impacts between the independent variables and the dependent variable. The regression results are shown in table 4. R square is the square of the multiple correlation coefficients; it indicates the proportion of the variance of the dependent variable explained by the independent variables. The closer R square near to 1, the better the linear regression model is. The F-value is computed as the ratio of the mean sums of squares of the regression equation and the residual. The coefficient indicates the number of units of increase in the dependent variable caused by an increase of one unit in the independent variable. The detailed verifications of the second hypothesis are provided in the following.

Table 3: Regression Analysis Results

variables	Standard Beta	Sig.	Model Summary
Intrinsic job satisfaction	.46	.000	R^2= .21 Adjusted R^2= .20 Standard Error = .70 F statistics= 72.41 p-value = .000
Extrinsic job satisfaction	.47	.000	R^2= .22 Adjusted R^2= .22 Standard Error = .50 F statistics= 78.94 p-value = .000

4. Testing Hypothesis

H3: There is significant impact between Intrinsic Job Satisfaction and product innovation.
H4: There is significant impact between extrinsic Job Satisfaction and product innovation.

Statistical results in Table 4 illustrate the impact of intrinsic job satisfaction on product innovation. Statistical results illustrate the relations between Intrinsic job satisfaction and product innovation were acceptable. As indicated in the test (F) the calculated (F) value is 72.41 which are the largest of the indexed value (F) at significance less than 0.01. As a result, value of the adjusted coefficient (interpretation) R2 is 0.21. This means the Intrinsic job satisfaction explain and interpret 0.21 from the gained changes product innovation. In addition, the value of the coefficient Beta (B) for the Intrinsic job satisfaction an explanatory (independent) variable for the respondent (dependent) variable of product innovation is 0.46 at a significant less than 0.01. In other word, the change of one unit in the Idealized Influence Attribute is followed by an increase of 0.46 in the product innovation.

Statistical results illustrate the relations between Extrinsic job satisfaction and product innovation were acceptable. As indicated in the test (F) the calculated (F) value is 78.94 which are the largest of the indexed value (F) at significance less than 0.01. As a result, value of the adjusted coefficient (interpretation) R2 is 0.22. This means the Extrinsic job satisfaction explain and interpret 0.22 from the gained changes product innovation. In addition, the value of the coefficient Beta (B) for the Extrinsic job satisfaction an explanatory (independent) variable for the respondent (dependent) variable of product innovation is 0.47 at a significant less than 0.01. In other word, the change of one unit in the Extrinsic job satisfaction is followed by an increase of 0.47 in the product innovation.

5. Conclusion

This study tested the relationships among academic staff in Iraqi public universities, job satisfaction, and product innovation using 280 questionnaires. The above statistical results prove that there are significant strong relationship between the both intrinsic job satisfaction and extrinsic job satisfaction and product innovation. More importantly, in others words. This indicates that all of the Intrinsic job satisfaction and extrinsic job satisfaction and product

innovation emerged as the contributing factor and play important roles in enhancing academic staff.

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