

ORGANISATIONAL INNOVATION: A COMPARATIVE STUDY OF SELECTED IT COMPANIES IN INDIA

Dev Kumar ^{a, *}, Meenu Saini^b

^aResearch Scholar, University school of management, Kurukshetra University, Kurukshetra

^bAssistant Professor, Department of Business Administration, NIT, Kurukshetra

Abstract In recent years, organisational innovation began to receive attention from researchers due to its contribution to the development of innovations in every field. The present study is undertaken to compare the organisational innovation of selected Indian IT companies. The study is descriptive and comparative in nature. The data was collected from managerial employees working in three leading IT players of India (WIPRO, TCS and HCL) located in Delhi and NCR using random sampling and was analyzed by using PASW 18.0. The results of present study revealed that there is no significant difference in the level of organisational innovation of managerial employees of various selected Indian IT players. Further, the results of the study reported that on the basis of gender there is no difference in the organisational innovation level of managerial employees.

Keywords: Organisational innovation, managerial employees, product and service innovation, process innovation, innovative culture.

Introduction

The essential nature of the present day world underlies a very fast and competitive society where the ability to dictate changes and transformation adds the extreme value. A competitive advantage in managing innovation and creativity is the key of this ability (Drucker, 1985; Woodman et. al., 1993).

*Corresponding author- researchzeal@gmail.com, mnsn4390@gmail.com, 9467801664

Innovation has been and continues to be an important topic of study for a number of different disciplines, including business, economics, engineering, science, and sociology. Because of the rapidly changing and uncertain environment enterprises face the biggest challenge that how to capture their competitive advantage in this age of knowledge-based economy. Organisation conducting businesses in the global environment are faced with competition. The search for competitive advantage has led to recognition of innovation as a vital constituent for the survival and profitability in the 'Information Age'.

Today, almost all organizations face a dynamic environment characterized by shortening product life cycles, rapid technological change, and globalization. Organizations, especially technologically driven ones, need to be more creative and innovative than before to survive, to compete, to grow, and to lead (Jung et al., 2003; Tierney et al., 1999). In this sense, Innovation has been considered essential for sustained economic development in the capitalist system, including the change in living standards and new technology creation. As a complex and diversified phenomenon, innovation has been often difficultly organized by researchers. Baumol (2004) emphasizes that while innovation is important for the development of sectors and organizations, the scientific literature on the subject has found it difficult to follow the development of a theoretical view point, particularly when dealing with organizational innovations. Organizational innovations become immensely important, as indicated by Salazar and Holbrook (2003). From a theoretical-conceptual point of view, a discussion about this type of innovation is much reward able, as it can be seen its importance. In the field of Management, this subject can be articulated and verified in the literature on "management innovation" and "organisational innovation".

Concept of organizational innovation

An **innovation** is the implementation of a new or significantly improved product (good or service), or process, a new method of marketing, or a new organizational method in business practices, workplace organization or external relations. The minimum requirement for an innovation is that the process, product, marketing method or organizational method must be new (or significantly improved) to the firm. Organisational innovation, the focus of this research review, is a dynamic and iterative process of creating or modifying an idea and developing it to

produce products, services, processes, structure, or policies that are new to the organisation (Nohria and Gulati 1996).

Organizational innovativeness refers to the innovative abilities needed within an organization and among its employees. Innovativeness is “the overall internal receptivity to new ideas and innovation that is demonstrated through management, individuals and teams, and that enables the formation of an innovative culture” (Wang and Ahmed, 2004). Innovativeness is based on the concept of innovation, the process of creating and delivering new customer value in the marketplace. Drucker (1993) viewed innovation as simply the application of knowledge to produce new thinking. In the organisational innovation, innovation is defined as a multi-stages process whereby organisations transform ideas into new/improved products, services, or processes to advance, complete and differentiate themselves successfully in their market place.

Main Types of Innovation

Product Innovation

Product innovation is the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses. This consists of significant improvements in components and materials, technical specifications, user friendliness or incorporated software other functional characteristics. Product innovations can make the use of new knowledge or technologies, or can be based on new uses or combinations of existing knowledge or technologies.

Process Innovation

Process innovation is the implementation of a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software. Process innovations can be intended to decrease unit costs of production or delivery, to increase quality, or to produce or deliver new or significantly improved products.

Market Innovation

Marketing innovation is the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing. Marketing innovations are aimed at better addressing customer needs, opening up new markets, or newly positioning a firm’s product on the market, with the objective of increasing the firm’s sales.

Organisation Innovation

Organizational innovation is the implementation of a new organizational method in the firm's business practices, workplace organization or relations in external environment. Organizational innovations can be intended to increase a firm's performance by reducing administrative costs or transaction costs, improving workplace satisfaction (and thus labor productivity), gaining access to non-tradable assets (such as non-codified external knowledge) or reducing costs of supplies.

Literature review

The organizational innovation is the introduction of new organizational business management methods in the workplace and / or the relationship between a company and external agents (Hamel, 2006, 2007, 2009). Crossan and Apydin (2010), in their study a multi-dimensional framework of organisational innovation a systematic review of the literature consolidate the state of academic research on innovation and synthesize various research perspectives into a comprehensive multi-dimensional framework of organisational innovation linking leadership, innovation as a process, and innovation as an outcome. The organizational innovation is considered a source of sustainable competitive advantage (Mol et Birkinshaw 2009).

Affes, et. al. (2015) in their study the relationship between organisational innovations, internal sources of knowledge and organizational performance examined the importance of internal sources of knowledge and its relationship with organizational innovation and organizational performance. The results of study confirmed the relationship between external and internal sources of knowledge with organisational innovation and organisational performance and to infirm the relationship between organisational innovation and organisational performance. The performance is far from being a simple phenomenon; it is a complex and multidimensional concept (Cameron 1986; Chakravarthy 1986; Venkatraman et Ramanujam 1986).

Vries, et. al. (2006) examined the effect of mentoring relationship on the mentor and found that mentors report significant benefits for themselves and the mentee as well as the organisation itself as a result of their participation. The findings suggest that a long-term mentoring programme for women has potential to be an effective organisation change intervention. Mikl-Horke (2004) identifies the following determinants of the diffusion of management innovations: informal networks among managers, informal networks between managers and other actors in the political and social power and motivation of investors, structure

and strategies of multinational companies, policies state and tacit knowledge and attitude of managers, workers and consumers. Maktabi and Khazaei (2014) in their study checked the impact of organisational learning on organisational performance and organisational innovation evidence from bank industry of Iran investigated the impact of organisational learning on organisational innovation and performance. The results showed that organisational learning has positive impact on organisational innovation and organisational performance.

Hence by taking into account the perspective of literature present study is undertaken to compare the organisational innovation of selected Indian IT companies.

Objectives of the study

1. To analyze and compare the organisational innovation level of the managerial employees of selected Indian IT players.
2. To compare the level of organizational innovation on the basis of gender of the managerial employees of selected Indian IT players.

Hypothesis

Ho 1. There is no significant difference of level of organisational innovation among the selected Indian It players.

Ho 2. There is no significant difference between male and female managerial employees on organizational innovation level.

Research methodology

Research Design

Descriptive research “is designed to provide a picture of a situation as it naturally happens”. It may be used to justify current practice and make judgment and also to develop theories. In descriptive studies, the researcher must be able to define clearly, what researcher want to measure and must find adequate methods for measuring it along with a clear cut definition of population researcher wants to study. Present research is comparative, descriptive and empirical in nature.

Sample

Managerial employees working in three leading IT players of India (WIPRO, TCS and HCL) located in Delhi and NCR. In total researcher contacted 150 managers to whom the questionnaires' was distributed, out of which 120 were received complete in all respects. Therefore, the exact sample was 120.

Tools used for Data Collection

Organizational Innovation scale was used for data collection. The scale consists of 18 items, each to be rated on the five point scale. Out of 18 items 17 are 'True-Keyed' and only 1 is 'False-Keyed'. The items are related to almost all relevant types of organisational innovation like product and service innovation, process innovation and innovative culture.

Reliability of the Scale

Cronbach's alpha coefficient for the scale as whole and as per standardized items were found to be 0.763 and 0.789 respectively. In general, in psychology researches, a good measure should have a Cronbach's Alpha of at least 0.60 and preferably closer to 0.90. Therefore, in the present study the scale can also be considered reliable.

Result and discussion

In order to meet the objectives of the study, a comparison of organizational innovation level of managerial employees of selected Indian IT players has been done with the help of various statistical methods like arithmetic mean, standard deviation (descriptive statistic), independent sample t-test and one way ANOVA. SPSS (statistical package for social sciences) was used for the data analysis. The results of all these analyses are described following.

SECTION – (I) ANALYSIS OF VARIANCE

Since the objective no 1 of study was to study and the compare the organisational innovation level of the managerial employees of selected Indian IT players. ANOVA was considered as one of the most pertinent statistics. This section has deals with the multiple comparisons of multiple factors included in the study.

Hypothesis (Ho) 1: There is no significant difference in the level of organisational innovation of the managerial employees of the selected Indian IT players.

I) Comparison on the basis of organisational innovation

Table No 1(a). ANOVA

OI	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.45	2	5.725	0.266	0.767
Within Groups	2514.25	117	21.489		
Total	2525.7	119			

Source: Managers Survey.

Table No 1 (b). Descriptive statistics of managerial employees of Wipro, TCS and HCL.

Organisation	N	Mean	Std. Deviation
Wipro	40	72.525	4.326
TCS	40	73.075	4.932
HCL	40	73.25	4.628
Total	20	72.95	4.606

Source: Managers Survey.

Table No 1 (c). Multiple Comparisons

Company (J) Company	Mean Difference (I-J)	Std. Error	Sig.
LSD Wipro TCS	-0.55	1.036	0.597
HCL	-0.725	1.036	0.486
TCS Wipro	0.55	1.036	0.597
HCL	-0.725	1.036	0.866
HCL Wipro	0.725	1.036	0.486
TCS	0.175	1.036	0.866

Source: Managers Survey.

The mean difference is significant at the 0.05 level. The Organizational Innovation was subjected to one way ANOVA. When there are more than two categories i.e. three IT companies in the present study to compare, one way ANOVA is applied. Wherever the significant difference were found ($p\text{-value} < 0.05$), the mean scores were compared to see the responses of the various categories. Further Post hoc analyses were performed wherever independent variable contained more than 2 categories. Tukey method is considered as the best method when there is homogeneity of variance.

From the above table no 1 (a) it was found that the significant-value for Organizational Innovation was greater than 0.05. This indicates that there is no significant difference of the mean scores of organizational innovation among the various companies. Table no 2 (b) Indicates the organizational innovation scores for Wipro (mean score 72.52), TCS (mean score 73.07) and HCL (mean score 73.25).

Hence, $p\text{-value} (.767) > 0.05$, so null hypothesis there is no significant difference of level of organisational innovation and it's constructs among the selected Indian IT players was accepted.

Hypothesis (Ho) 2: There is no significant difference of level of organisational innovation and it's constructs among the selected Indian IT players.

II) Comparison on the basis of organisational innovation's construct

According to the result of first objective, it was found that there is no significant difference in the level of Organizational Innovation of managerial employees in the various selected IT companies. A thorough analysis of the construct of organizational innovation reveals that two constructs (product and service innovation, process innovation) are different and one construct (innovative culture) is same.

Table No 2 (a) ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	73.617	2	36.8	3.594	0.031
PSI Within Groups	1198.18	117	10.24		
Total	1271.79	119			
Between Groups	13.617	2	6.808	2.952	0.056
PI Within Groups	269.85	117	2.306		
Total	283.467	119			
Between Groups	2.717	2	1.358	0.668	0.515
IC Within Groups	237.875	117	2.033		
Total	240.592	119			

Source: Managers Survey.

Where PSI = product and service innovation, PI= process innovation and IC = innovative culture

Table No 2 (b). Descriptive statistics of managerial employees of Wipro, TCS and HCL companies.

	N	Mean	Std. Deviation
PSI Wipro	40	35.7	3.314
TCS	40	37.175	3.241
HCL	40	37.5	3.038
Total	120	36.791	3.269
PI Wipro	40	17.225	1.367

TCS	40	16.65	1.747
HCL	40	16.425	1.412
Total	120	16.766	1.543
PI Wipro	40	19.6	1.614
TCS	40	19.25	1.334
HCL	40	19.325	1.308
Total	120	19.391	1.421

Source: Managers Survey.

Table No 2 (c). Multiple Comparisons

(I) Company	(J) Company	Mean Difference (I-J)	Std. Error	Sig.
PSI	Wipro TCS	-1.4750*	0.7155	0.041
	HCL	-1.8000*	0.7155	0.013
	TCS Wipro	1.4750*	0.7155	0.041
	HCL	-0.325	0.7155	0.651
	HCL Wipro	1.8000*	0.7155	0.013
	TCS	0.325	0.7155	0.615
PI	Wipro TCS	0.575	0.3395	0.093
	HCL	.8000*	0.3395	0.02
	TCS Wipro	-0.575	0.3395	0.093

Source: Managers Survey.

IC Wipro TCS	0.35	0.3188	0.275
HCL	0.275	0.3188	0.39
TCS Wipro	-0.35	0.3188	0.275
HCL	-0.075	0.3188	0.814
HCL Wipro	-0.275	0.3188	0.39
TCS	0.075	0.3188	0.814

Source: Managers Survey.

The various construct of the organizational innovation viz. product and service innovation, process innovation and innovative culture were subjected to one way ANOVA. When there are more than two categories i.e. three constructs in the present study to compare one way ANOVA is applied.

From the above table no 2(a), it was found that the sig-values for product and service innovation (0.031) and process innovation (0.05) were less than 0.05. This indicates that on the basis of these two constructs (product and service innovation and process innovation) there is significant difference of the mean score of product and service innovation and process innovation among the various IT companies. Table no 2(b) indicate that product and service innovation scores for TCS (mean score 37.175) and HCL (mean score 35.500) were more than that of Wipro (mean score 35.700) and process innovation score for Wipro (mean score 17.225) was greater than the process innovation scores of TCS (mean score 16.650) and HCL (mean score 16.425).

To check whether all the banks have significantly different for their mean score, Post hoc analysis (Paired Comparison) was applied with Tukey Method. Results indicate that on the basis of product and service innovation Wipro company differs significantly from TCS (sig. value

0.041) and HCL (sig. value 0.013) and on the basis of process innovation Wipro company differs significantly from HCL (sig. value 0.020). No other differences were found to be significantly. In other words the innovative culture level among Wipro, TCS and HCL found almost same.

INDEPENDENT t-test

Since the 2nd objective of study was to compare the level of organizational innovation of the managerial employees on the basis of gender in selected Indian IT players. Independent sample t-test was considered as one of the most applicable statistics to compare the managerial employees on the basis of gender.

Hypothesis (Ho) 3: There is no significant difference between male and female managerial employees on organizational innovation level.

Comparison of Organizational Innovation on the basis of gender

Table No 3(a) Independent Sample Test

Group Statistics:

Gender	N	Mean	Std. Deviation	Std. Error Mean
OE Male	82	72.79	4.85	0.535
Female	38	73.28	4.06	0.659

Whereas OE= Organizational Effectiveness. Source: Managers Survey.

Table No 3(b) Independent Sample Test

Variable		t-test Equality of Means				
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Organizational Innovation.	Equal variance assumed	-0.548	118	0.585	-0.496	0.906

Source: Managers Survey.

Table no 3(a) and 3 (b) presents the mean and S.D. of both the groups along with the t-values of observed variables. T-test was applied to compare the level of organizational innovation of Male and Female employees and results are shown in table no 3 (a,b). The p-value (sig.) of .585 is greater than alpha .05, there for the null hypothesis “Ho 2” that there is no significant difference between Male and Female managerial employees on organizational innovation level was accepted. Mean score of male (72.79) and female (73.28) employees and S.D. score of male (4.85) and female employees (04.06) show almost equal level of organizational innovation.

Conclusion

The research compares the level of organisational innovation of managerial employees of selected Indian IT players (WIPRO, TCS and HCL) located in Delhi and NCR. From the above analysis it can be concluded that organisational innovation exists in the selected Indian IT players of Delhi and NCR. But there is no significant difference in the level of organisational innovation of managerial employees of various selected Indian IT players. Further, a thorough analysis of the construct of organisational innovation reveals that two constructs (Product and Service innovation, Process innovation) are different and innovative culture is same in the managerial employees of various selected Indian IT players. The results of the study reported that on the basis of gender there is no difference in the organisational innovation level of managerial employees.

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