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Scale Validation of TQM Construct in Management Education

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ABSTRACT

In the wake of service competition and increasing students expectations, management institutes have realised the importance of implementing quality practices to attract new customers,boosting student loyalty, increasing student contentment and amplifying share in the market. In the present paper leadership & commitment of top management, faculty competence & skill, innovative & updated curriculum, infrastructure facilities, library services, supporting services and interaction with stakeholders constructs have been developed and validated in predicting overall service quality in public and private management institutes in J&K State. These measures are tested for reliability and validity using perceptual data collected on census basis from 166 students of five management institutes. The results apart from providing validated construct, enticed several practical implications for management of the institutes.

Keywords : Validation, reliability, validity

1.1 INTRODUCTION

Total quality management has generally been recognized as a major innovation in management thought and has gained widespread acceptance in business and industry. The importance of quality services in management education for the development of dedicated, committed, devoted and professionally sound personnel is imperative for organisational productivity, decrease in cost, building customer satisfaction & profits to organisations (Sanchez et al., 2007 and Cua et al., 2001). Quality management in education sector is an important competitive priority which has shifted from manufacturing to service arena (Pariseau & McDaniel, 1997) and now being widely practised by educational institutes, banking, finance, health services, restaurant etc. for gaining edge over their competitors (Mizuno, 1988), customer attraction (Mahapatra & Khan, 2007),customer satisfaction (Soderlund, 1998) and customer retention (Keaveney, 1995). Sustainability of an organisation is affected by its ability to meet customer-perceived service quality (Ling et al., 2010). Many quality awards such as Deming Prize in Japan, the Malcolm Baldrige National Quality Award in U.S.A. and the European Quality Award (EQA) in Europe are being awarded annually for achieving excellence in quality. Mizikaci (2006) opined that, quality systems adapted from business and industry operations need to be reoriented and reinstalled for professional education conditions as education of the student is the product and its successful completion requires employability as manager, worker or co-managing the learning process. Feigenbaum (1993) believes that quality is "invisible" and is reflected in the action, decision-making and thoughts of managers, engineers, workers and faculty members. Campell and Rozsnayi (2007) have defined the concept of quality of professional education in excellence, zero errors, transformation , enhancement and improvement.

1.2 REVIEW OF LITERATURE

The three pillars of any higher education institution are: quality of faculty, infrastructure facilities and learning environment. Venkatraman (2007) opined that customer in professional education must be regarded stakeholders' such as students and society. Chen et al. (2006) have adapted Importance – Satisfaction model (I-S model) in higher education illustrating

quality improvement in terms of faculty satisfaction. Kimini et al. (2011) found administrative quality, academic quality, program quality, students support and availability of resources are the most important dimensions that determine the service quality.

Ling et al. (2010) considered reputation of the tertiary institution & academic programme as the most important & influential antecedent in affecting the overall students' perceived quality. Kwek (2010) suggested various strategies like prompt handling of students queries by librarians, increasing staff responsiveness towards students' requests, maintenance of the practicability of the curriculum and increasing the amount of students' recreational activities for improving perceived service quality among the students. Aqlan et al. (2010) emphasised on strategic plan for improving quality of teaching-learning process. Tsinidou et al. (2010) enticed the various factors like communication skills, approachability, clear guidelines & advice, friendliness, availability of textbooks & journals, easy borrowing process, variety in elective modules, spacious classrooms & laboratories, regular career counselling and linkages with businesses influencing quality of academic staff & administration. Mahralizadeh and Safaeemoghaddam (2010) concluded acceptance of responsibility for quality by the top management, customer orientation, high level of employee participation, open & effective communication, fact based management and strategic quality planning for improving quality in higher education. In the present paper leadership & commitment of top management, faculty competence & skill, innovative & updated curriculum, infrastructure facilities, library services, supporting services and interaction with stakeholders constructs have been developed and validated in predicting overall quality in management institutes in J&K State.

1.4 RESEARCH METHODOLOGY

Both primary and secondary source of information are used in order to collect the pertinent information and literature. Total of 200 questionnaires are distributed to 1 public and 4 private management institutes in J&K State. However, 172 questionnaires are received back but only 166 are found to be complete which makes the effective response rate of 83%

and so they were used for further analysis. The collected responses are reduced into few manageable and meaningful sets through factor analysis (SPSS, 16.0 version) carried with Principal Component Analysis along with Orthogonal Rotation procedure of Varimax for summarising the original information with minimum factors and optimal coverage. The statements with factor loading less than 0.5 and Eigen value less than 1.00 are ignored for the subsequent analysis (Hair et al., 2006). The statements retained after purification are leadership & commitment of top management (6), faculty competence & skill (6) innovative & updated curriculum (4), infrastructure facilities (5), library services (4), supporting services (8) and interaction with stakeholders (6). To operationalise the constructs, the following properties of the measures are considered: reliability (internal consistency of operationalisation) and validity (content, construct, convergent and discriminant validity). The instrument that will be developed in this study consists of 7 scales (45 items). Table 1 presents the descriptive statistics for the scales that are empirically tested and validated.

1.4 : ITEM ANALYSIS
It was carried to ascertain whether items have been appropriately assigned to scale. This has been judged through correlation of each item with the scale. Table 2 presents the correlation matrix for the 7 scales and their measurement items. As is readily apparent from the table, the items are highly correlated with the scales they intend to measure. Any correlation score of less than 0.5 indicates that the associated item can not explain adequately the variance with the rest of the items in that scale.

1.5: REALIBILITY
Reliability is the extent to which a variable or set of variables is consistent in what it is intended to measure

(Hair et al., 2005). The reliability of scale items have been tested by checking the internal consistency of the data with the help of Cronbach's alpha values. Cronbach's alpha value of 0.70 or above implies strong scale reliability (Cronbach, 1951) The Cronbach's alpha of all the scale items are above 0.70 (Table 3) and varies between minimum of 0.766 (Innovative & updated curriculum) to highest 0.871 (Supporting services)

CONCLUSION AND MANAGERIAL IMPLICATION
Private management institutes should encourage its faculty to undergo some research work in their specialised areas and for this, duty leave & reimbursement of travelling expenses at least once in a year should be borne by the institute. In addition, some annual increment in salary ought to be linked with research work of faculty. Curriculum must be divided into subject based time table and weekly work plan be distributed among students well in advance. Smart classrooms, video conferencing facilities, EDUSAT facilities, industry-linkage programmes, collaboration with reputed national management institutes be established for knowledge sharing and getting best of their experiences. The institutes should have internal Academic Performance Analysis Cell (APAC) for enhancing quality in the educational process. All institutes should have web based portal which can be accessed by the students and faculty of the institutes for timely dissemination of information & knowledge sharing. Public management institutes should not prepare students from academic point of view only but also enable them to face competitive exami-

nations. They should organise workshops once in a semester to make students aware about various opportunities that are available to them and tell them about various strategies which can help them to perform well in competitive exams. Faculty and student exchange programmes with reputed management national and international institutes be initiated for knowledge acquisition & exchange. The syllabus should be framed according to the needs of business & society and course content should equip students with entrepreneurial skills towards job orientation & creation than becoming mere job seekers.

Table 1 : Descriptive characteristics

Scale		Items							
		1	2	3	4	5	6	7	8
Leadership & commitment of top management	Mean	2.91	2.77	2.89	2.70	2.82	2.73		
	S.D	1.17	1.91	1.16	1.36	1.27	1.24		
Faculty competency and skill	Mean	3.34	2.99	3.47	3.14	2.52	3.52		
	S.D	1.2	1.2	1.2	1.2	1.18	1.10		
Innovative and updated curriculum	Mean	3.6	3.29	3.35	3.75				
	S.D	1.16	1.08	1.10	1.19				
Infrastructure facilities	Mean	3.53	3.30	3.33	3.15	3.3			
	S.D	1.15	1.12	1.16	1.02	1.08			
Library services	Mean	3.5	3.4	3.28	3.31				
	S.D	1.15	1.24	1.05	1.13				
Supporting service	Mean	3.20	2.92	2.94	3.05	3.26	2.96	3.15	3.18
	S.D	1.18	1.23	1.15	1.17	1.20	1.25	1.10	1.22
Interaction with stakeholders	Mean	2.99	3.08	3.19	3.3	3.19	2.88		
	S.D	1.19	1.14	1.2	1.18	1.17	1.18		

Table 2 : Item to scale correlation matrix

Scales	Item No							
	1	2	3	4	5	6	7	8
1	.609	.724	.719	.788	.761	.826		
2	.772	.287	.640	.706	.718	.721		
3	.837	.780	.799	.654				
4	.784	.697	.738	.809	.786			
5	.749	.814	.787	.729				
6	.681	.710	.790	.756	.677	.684	.753	.757
7	.845	.795	.711	.714	.747	.707		

Table 3: Internal consistency of the scale

Description	No. of items	Croanbach 's Alpha
Leadership & commitment of top Management	6	.835
Faculty competency and skill	6	.776
Innovative and updated curriculum	4	.766
Infrastructure facilities	5	.819
Library services	4	.771
Supporting service	8	.871
Interaction with stakeholders	6	.848

Table 4: Factor analysis of each scale

Scale	No. of factors	MSA*	Total eigen value	Factor loading								% of variance explained
				1	2	3	4	5	6	7	8	
1	1	.800	3.292	.829	.781	.761	.725	.724	.604			54.873
2	1	.791	2.732	.762	.604	.733	.749	.741	.549			45.536
3	1	.704	2.381	.854	.792	.807	.610					59.625
4	1	.819	2.921	.777	.677	.736	.822	.801				58.425
5	1	.712	2.376	.752	.809	.799	.720					59.345
6	1	.872	4.235	.673	.709	.798	.762	.668	.675	.763	.761	52.939
7	1	.853	3.421	.852	.808	.708	.708	.742	.699			57.015

*Kaiser-Meyer –Olkin Measure of Sampling Adequacy

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