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# MEASURING STAGES OF CONCERN OF MANAGEMENT ACADEMIA ABOUT IT BASED EDUCATION: A COMPARATIVE STUDY BETWEEN GOVERNMENT OWNED UNIVERSITY DEPARTMENTS AND PRIVATE B-SCHOOLS

**Sudhindra Bhat**

SS Law, Bengaluru, Karnataka, India

**Dr. Swati Sharma**

Amity University, India

**Dr. Bert Wolfs**

SBS Swiss Business School, Zurich, Switzerland

## ABSTRACT

*In present paper an attempt has been made to compare stages of concern between faculty members of university management departments and private b- schools about the use of information technology based education. This study is based on modified version of Hall et al Concern Based Adoption Model (CBAM). Analysis of variance (ANOVA) and multivariate analysis of variance (MANOVA) were employed in the data analysis. Results show that faculty members have high impact concern and results also demonstrate no significant difference in concern between university department and private b-school faculty members.*

**Key words:** Concern based Model, information technology based Education, ANOVA, MANOVA

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## 1. INTRODUCTION

Management education is a great beneficiary of Indian economic reform, where transformation from state controlled market to free market is imperative. In India, MBA

degree has been perceived as a way of achieving assured careers and sound wages at early stage of life. There is no doubt about popularity of MBA degree in Indian middle class that is cloned from western countries. The demand for managerial manpower is increased sharply. It is essential that Indian management institutions both public and private deliver quality education to meet the new challenges of the growing competition. Teaching methodologies are long felt need in management education to enhance its qualitative utilities. It has been realized that teaching process must incorporate technology to provide students with meaningful activities. The demand for information technology based learning environment is growing substantially over the years and it became one of the dimensions of management education. The main purpose of this study is to assess the readiness of university management department faculty to change from traditional classroom delivery to computer-based delivery in comparison to private b-school faculty. The first objective of this study is to identify the Stages of Concern of the university management department and private b-school faculty members about the use of information technology-based education by measuring faculty members' responses. The second was to compare stages of concern of university management department faculty members with their B-School counterpart.

## **2. CONCERN BASED ADOPTION MODEL (CBAM)**

CBAM is based on the theory that change is a developmental progression of events, many of which may be predictable (Merz, 1996). According to Hord, Rutherford, Huling-Austin, and Hall (1987), "A central and major premise of CBAM is that the single most important factor in any change process is the people who will be most affected by the change". Many researches have showed that individual faculty member has different kinds of concerns about their involvement with an innovation. Hall, et al. (1977) defined concern as "the composite representation of the feelings, preoccupation, thought, and consideration given to a particular issue or task". They conceptualized seven sequential stages: (1) Awareness, (2) Informational, (3) Personal, (4) Management, (5) Consequence, (6) Collaboration, and (7) Refocusing. Faculty concerns about an innovation progress through these seven Stages of Concern (SoC- as per Halls Model). He/she can experience several SoC concurrently, but there are differential degrees of intensity. Hall et al. have proposed that the concerns of a faculty member will shift from one stage to another in a systematic fashion awareness of an innovation into beginning use, and then more highly sophisticated use. The Concern Based Adoption Model (CBAM) was developed from Fuller's (1969) concern theory of teacher development. In this model he identifies the concerns of individuals during the implementation of educational or curriculum change. Mungal and Saha (2017) adopts the Concerns Based Adoption Model (CBAM) to examine the Stages of Concern (SoC) of faculty involved in the implementation of pedagogical reform. The study found the faculty body had high levels of self-concerns, low levels of impact concerns and a willingness to continue with the implementation process. CBAM includes three diagnostic dimensions (Hall, 2013; Hall & Hord, 2001):

- Stages of Concern (SoC), which addresses the personal issues faced by implementers;
- Levels of Use (LoU), which describe the behavioral profiles of users and non-users; and
- Innovation Configurations (IC), which represent the possible forms of the change that can be assessed against the intentions of the designers of the innovation.

The Stages of Concern (SoC) dimension describes the perceptions and emotions of people as they engage in a change process. It was developed from the seminal work of Frances Fuller who found that teachers with different levels of experience have different kinds of concerns

about teaching. Fuller (1969) originally conceptualized a two stage developmental model of concerns: benefits to self and benefits to pupils. Self-concerns involved factors such as personal adequacy and teacher efficacy whereas pupil concerns focused on the learning and progress of the students. The two-stage model was later refined by Fuller, Parsons and Watkins (1973) to a three-stage model that included task concerns such as concerns about teaching methods and teaching performance. Hall (1979) expanded the three-stage model of self, task and impact concerns into a seven-stage model that increased the sensitivity of the model. The SoC identifies seven levels, through which teachers progress as they adapt and collaborate in the implementation of new innovations. The seven stages of concern, as outlined by George, Hall, and Stiegelbauer (2006), are unconcerned, informational, personal concerns, management, consequences, collaboration and refocusing. The SoC in the CBAM model has proven to be a useful framework for explaining teachers' responses to change and providing guidance to those leading educational change (Cruz, 2014; Khoboli & O'Toole, 2012). In a study of teacher change in the implementation of active learning in Bangladesh, Park (2012) highlighted the importance of teachers' prior experience, the context of innovation, as well as the presence of networks of teachers and support staff to the change process. In another study, Roach, Kratochwill, and Frank (2009) used the SoC to support the implementation of research-based practices in colleges and schools. The SoC is therefore a valid way to make claims about implementing pedagogical innovations. It is also a useful mechanism for assessing and addressing faculty or supply side preparedness, as well as other important contextual, demand side factors such as student preparedness for implementation of pedagogical innovation. Khoboli and O'toole (2011) study results indicated that these teachers' development and change through action research corresponded with the seven levels of the Concerns-Based Adoption Model (CBAM) which are awareness, information, personal concerns, management, consequences, collaboration and refocusing. In school settings, the notion of change is associated with school improvement and reform. According to Hall (1981), change as a process involves the adoption of new ideas about improving educational outcomes. The process of effective change requires the provision of many supportive factors to facilitate and move change to a point of successful implementation. According to Boyd (1992), change must be seen as having a comprehensive impact on all areas of the school context; the development of a supportive school context would facilitate the change process. Boyd further identified factors of the school context that either foster or inhibit the process of effective change. Mendez-Morse (1993) recommended that the school should develop its own vision as a guide for what it wishes to attain, and this vision should be developed and shared by all staff in the school if change is to be effective. According to Sashkin and Egermeier (1992), three perspectives are most influential in educational change: (a) the rational-scientific perspective, which is based on the idea that change occurs by the dissemination of innovation techniques; (b) the political perspective, which believes that change is best made by top-down decisions, from federal-level to state-level reforms; and (c) the cultural perspective (bottom-up approach), which emphasizes change by encouraging changes in meanings and values within the organization. Cuban (1988) identified two kinds of reforms: first-order and second-order change. First-order change concerns improving the existing system and structure in the school, whereas second-order change involves rearranging, restructuring, and altering the existing organizational structure. Cuban concluded that the history of school reforms indicates that first-order changes have succeeded because they aimed to improve the quality and efficiency of what already existed. Second-order changes have not been successful because they are difficult to adopt and even harder to implement. Sarfo et al.(2017) conducted a study aimed at assessing information and communication technology on teachers' stages of concern regarding the implementation of information and communication technology (ICT) curriculum in basic schools. The study also

examined the effects of teachers' personal factors such as gender and teaching experience on their stages of concern towards the implementation of ICT curriculum. The results indicates that teachers generally had their first and second high concerns at informational and consequence stages respectively and with low concern at awareness stage. However, according to the results, teachers' stages of concerns were not related to their teaching experience. The importance of helping students to develop ICT skills for learning and to cope with the requirements in the 21st century has compelled governments, educational leaders and innovators both in developed and developing countries to plan and implement ICT curriculum at all levels and areas of education. Alshammari (2000) study findings shows that teachers had first and second high concerns related to collaboration and personal stages respectively. The result also indicates that teachers also reported low concerns at the management and awareness stages. Roxie (2005) also used CBAM stages of concern to investigate public high school teachers' concern regarding the implementation of the phase three software program – CLASSROOM xp, Inter Grade Pro and Blackboard 5.5. Results indicated that teachers had three high concerns related to awareness, personal and management.

### 3. RESEARCH QUESTIONS

- What is the composite stage of concern of university management department and private B-school faculty about information technology based education?
- Do university management department faculty members and private B-school faculty members differ significantly in stage of concern about information technology based education?

### 4. PROCEDURE

The present study is based on a modified form of the Hall et al model. It has been found that 7 stage model of Hall et al did not fit real management faculty data. By using confirmatory factor analysis an alternative model of 3 stages and 15 items, has been developed. This 3-stage model found best fit to faculty data (see Appendix). The faculty members were asked to express their level of perception on a 7-point scale ranging from not relevant to most relevant with respect to statements included in the present study.

### 5. RELIABILITY AND VALIDITY OF STAGES OF CONCERN QUESTIONNAIRE

The Cronbach's alpha was calculated for the scale used in this study. Higher values of alpha indicate that the scale used for measuring Stage of concern was consistent in measurement. For the purpose of validity, the questionnaire was shown to few senior faculty members. They identified the point of vagueness and suggested some changes.

**Table 1** Reliability of Stages of Concern Questionnaire

Stage	No. of Items	Cronbach alpha
1	5	0.642
2	5	0.632
3	5	0.756
Total	15	0.653

## 6. DATA COLLECTION AND ANALYSIS

Only 100 faculty members (fifty from the University Department and fifty from the Private B-school) had returned a completely filled questionnaire. They were selected from Gujrat and Chhtishgarh states.

Using the SPSS program, univariate analysis of variance (ANOVA) was used to analyze whether means of university management department and private B-School faculty members were significantly different. A series of ANOVAs determined whether or not the various groups differed in their individual stage scores. Further, multivariate analysis of variance (MANOVA) was then used to determine whether the means of the SoC variables for groups of management faculty were significantly different from each other. MANOVA was employed because the SoC variables were correlated (Cheung et al., 2000). If the dependent variables are uncorrelated with each other, it may be that a series of univariate ANOVA tests would be acceptable. Where the dependents are correlated (most of the time), MANOVA is superior. This is because ANOVA only tests differences in means, whereas MANOVA is sensitive not only to mean differences but also to the direction and size of correlations among the dependents.

**Table 2** Mean Score at Various Stages

	Stage 1	Stage 2	Stage 3
University department	10.30	19.80	25.80
Private b-school management	10.10	19.10	26.80
Faculty			

**Table 3** ANOVA (Stage 1)

	Value	F	Hypothesis DF	Error DF	Sig.
		<b>Ratio</b>			
Pillai's Trace	0.008	0.257	3	96	0.856
Wilks' Lambda	0.992	0.257	3	96	0.856
Hotelling's Trace	0.008	0.257	3	96	0.856
Roy's largest			3	96	0.856
Root	0.008	0.257			

**Table 4** Mean Score at Various Stages

	Stage 1	Stage 2	Stage 3
University department	10.30	19.80	25.80
Private b-school management	10.10	19.10	26.80
Faculty			

**Table 5** ANOVA (Stage 1)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.619	5	.524	2.200	.061
Within Groups	22.381	94	.238		
Total	25.000	99			

<b>Table 6 ANOVA (Stage 2)</b>					
	<b>Sum of</b>		<b>Mean</b>		
	<b>Squares</b>	<b>df</b>	<b>Square</b>	<b>F</b>	<b>Sig.</b>
Between	1.897	4	.474	1.950	.108
Groups					
Within Groups	23.103	95	.243		
Total	25.000	99			

  

<b>Table 7 ANOVA (Stage 3)</b>					
	<b>Sum of</b>		<b>Mean</b>		
	<b>Squares</b>	<b>df</b>	<b>Square</b>	<b>F</b>	<b>Sig.</b>
Between	.833	3	.278	1.103	.352
Groups					
Within Groups	24.167	96	.252		
Total	25.000	99			

**Table 8 MANOVA**

	<b>Value</b>	<b>F</b>	<b>Hypothesis DF</b>	<b>Error DF</b>	<b>Sig.</b>
		<b>Ratio</b>			
Pillai's Trace	0.008	0.257	3	96	0.856
Wilks' Lambda	0.992	0.257	3	96	0.856
Hotelling's Trace	0.008	0.257	3	96	0.856
Roy's largest			3	96	0.856
Root	0.008	0.257			

## 7. RESULT AND DISCUSSION

Separate ANOVAs are listed for each stage of concern in Table 3. Group differences were not found significant. A MANOVA was conducted using the same two independent variables (university management department and private b-school faculty) and all three dependent variables (the 3 stage scores). Though all four MANOVA statistics, Wilks' Lambda, Roy's Greatest Root, Hotelling-Lawley Trace, and Pillai Trace were not significant (Table 4). The Pillai Trace criterion was used in this analysis to determine and evaluate multivariate significance. The Wilks' Lambda statistic may be the most widely used among the four (Pedhazur, 1982), but the Pillai Trace is more robust than the other three when used with small sample sizes (Olson, 1976).

Since main effects were not significant, there was no need to check for interactions, contrasts, or step- own analyses (Tabachnick & Fidel, 1989). The ANOVA, and MANOVA suggest no significant differences in the Stages of Concern about information technology based education between university management department and private b-school faculty. Based on the results it may be concluded that

- Faculty members of both university departments and private b-schools have high score at stage 3. It indicates that faculty members have impact concern.
- No significant difference was found between university management departments and private b-schools faculty members about their concern.

The result of paper can be discussed as management faculty both university department and private B-School displayed user profile. The stages of concern profile for all faculty members shows high intensity at the second and third stage. The high stage 3 score indicates that faculty members are most worried about issues such best use of resources and consequences of innovation. It implies that faculty members have impact concern. Score of

stage 2, implies that faculty members are also concerned about issues like efficiency, time demand. It means still IT based education is not fully implemented in the management institutions. One of the most important reasons may be lack of time. It has been found that faculty members are ready to adopt innovation. However, they have not adequate time due to other academic and non-academic work. Therefore faculty members like use of IT as a means to completing assigned duties rather than end itself.

## 8. LIMITATIONS OF STUDY

The purpose of this study is to identify faculty members' Stages of Concern about information technology-based education. This is very difficult to isolate of faculty concerns related to this particular change. Other ongoing changes in the environment like organizational policies would certainly play a role in shaping faculty attitudes and concerns. Furthermore, due to differences in faculty composition between university department and private b-school, results from this survey may have only limited applicability in generalization to other business schools.

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