Perception of Concerns about the Quality Management System Implementation on Its Levels of Use

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Abstract

In the era of rapid internalization, higher education institutions (HEIs) are striving to gain competitive advantage. One of the most popular ways to do so is through implementing a quality management system (QMS). This study was a quantitative research. The population comprised of all academic and administrative staff. A total of 23 academic and administrative staff were identified as the respondents in the study. All study hypotheses were confirmed. Our analysis revealed several interesting findings on the effect of the stages of concerns and the demographic variables on the use of the QMS. The stages of concerns explained the 45.6% of variance in level of use, while the demographic profile explained the 34.0% of variance in level of use. The relationship between seven stages of concern and level of use were partially supported, but the relationship between the demographic profile and the level of use were not supported in the study. Additionally, implication of our findings and limitations of the study were discussed.

Key Words: *quality management system, concerns-based adoption model, higher education institutions*

1. Introduction

The increasing pressure of globalization and the dynamism of the sector have resulted in the quality frenzy in the higher education sector since the last decade. Greater mobility of students and staff in paired with increasing demands on comparability and transparency on academic programmes (Holma & Pakalna, 2007) have led to the popular adoption and implementation of QMS such as the ISO 9001 that were originally designed for the industry sector (Pratasavitskaya & Sternsaker, 2010) by many higher education institutions (HEIs) with aims of improving their customer services and securing a competitive edge in the sector.

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In response to government initiatives at standardizing and improving the quality of high education, there has been a trend of uniformity in the choice of QMS being implemented in the HEIs, namely the ISO 9001:2008 (Harvey, 2002). The ISO 9001:2008-based QMS is a process orientated system (Michalska-Ćwiek, 2009) that helps to ensure properly written and documented procedures are created and implemented by the organization. These procedures cover all functions of the operations which include the organization structure, responsibilities, procedures, documentation, division competency, processes and resources of the organization (Michalska-Ćwiek, 2009). Studies have been done throughout the years on the adoption and the implementation of the QMS in HEIs and have yielded both positive and negative reviews (Becket & Brookes, 2008; Dobrzański & Roszak, 2007; Mizikaci, 2006; Sohail, Rajadurai & Rahman, 2003; O'Donnell, 1996). Among the positive reviews are on the improvement and standardization on processes and procedures, establishment of systematic record maintenance and filing system, increase of quality awareness among employees with clearly defined job responsibility (Sohail et al., 2003; Dobrzański & Roszak, 2007).

On the other hand, many concerns have been raised among academic staff on how effectively this industrial designed QMS can be fully implemented in the higher education sector due to negative reviews, such as the QMS focuses mainly on administrative and service processes but has neglected the student learning experience (Becket & Brookes, 2008) as well as the effectiveness and appropriateness of the QMS are arguable in satisfying the needs of higher education (Mizikaci, 2006). The ISO 9001 is a widely appraised and accepted quality standard in Malaysia. Consequently, in an effort to improve the service quality provided to the public and increase the image of the public sector, the government has decided to have the entire public sector including HEIs striving towards obtaining the ISO 9001 certification (Sta. Maria & Watkins, 2003). In higher education, Malaysian government wishes to use ISO 9001-based QMS as a tool to enhance the education quality image of HEIs to attract international students to pursue their studies in the country.

This shift has now placed the implementation of QMS in HEIs as one of the main agendas in the universities in Malaysia. With the aggressive initiatives of implementing the ISO 9001-based QMS in HEIs, the administrative and academic staff are going through changes in the operation process. Staff in an organization are sensitive towards changes. Their response towards change is often influenced by their capability to cope with the change and their concerns about the innovation (Hall & Rutherford, 1983), particularly intense personal concern that may be seen as potential resistance that may severely impact the degree of use of the innovation (Matthew, Parker & Wilkinson, 1998). This paper undertakes a study on the early stage implementation of the ISO 9001:2008-based QMS of a graduate school of business in one of the renowned public university in Malaysia. This study focuses on the extent of concerns on the QMS by the staff might affect their degree of use on the QMS.

2. Material and Method

2.1 The Concerned Based Adoption Model (CBAM)

CBAM that was developed by Hall, Wallace and Dossett in 1973 represents the complicated change process entailed when educational institutions participate in adopting new innovation (Hall, 1979). CBAM views change as a process rather than as an event and provides an understanding in describing and explaining the change process experienced by these institutions. This study was guided by the CBAM as it has been used extensively to examine and understand change during the implementation of a new innovation (Hall, 1979; Hall & Hord, 1987; Kelly & Staver, 2005). However, studies that have employed CBAM in Malaysia are few and scarce. There are three main key tools of CBAM, namely Stages of Concern (SoC), Levels of Use (LoU), and Innovation Configurations (IC). This study focuses on two of the main key tools which are the SoC and LoU dimensions. SoC was used to perceive the concerns and perceptions the staff may have on this early stage of QMS implementation process whereas LoU were to address what the users are doing with the newly implemented innovation.

2.2 Stages of Concerns (SoC)

The CBAM SoC is a useful tool in assessing in the attitude and concerns of the staff have towards the implementation of a new innovation or change. The SoC describes a possible progression of individuals concerns across the seven stages of concerns that were identified by Hall, George and Rutherford (1977) at different points of time over the innovation and can be measured by using the Stages of Concern Questionnaire (SoCQ). The first stage is Awareness (Stage 0) where individual has little or no knowledge of the innovation and is expressing little or no concern and involvement in the innovation. The second stage is Informational (Stage 1) where individual shows general awareness of the innovation and is expressing positive interest in learning more about it.

The next stage is Personal (Stage 2) where individual is uncertain about the demands of innovation, personal adequacy to meet those demands, and his or her role with the organization. There are also concerns about potential conflicts with existing structures or personal commitments. At stage Management (Stage 3), individual's attention is focused on the processes and tasks related to efficiency, organization, management, scheduling and time demands. The following stage is Consequence (Stage 4) where the individual is concerned about the impact of the innovation on his or her immediate community or associates. At this point, the focus is on relevance of the innovation for associates, evaluation of associate outcomes including performances and competencies, and the changes required to increase these outcomes. Next, at the stage of Collaboration (Stage 5), the focus is on the co-ordination and co-operation with others on the use of the innovation. The final stage is Refocusing (Stage 6) where the focus is on exploration of more universal benefits from the innovation including new alternative to be proposed or major modifications on existing forms of the innovation (Hall, 1979; Hall & Hord, 1987).

During the early stages of introduction and implementation of the innovation is yet to begin, stages of Awareness (Stage 0), Informational (Stage 1) and Personal (Stage 2) concerns are likely to be higher at this point of time. Management (Stage 3) concerns intensify when individuals start to implement the innovation and the early concerns will gradually subsidize. Consequence (Stage 4), Collaboration (Stage 5) and Refocusing (Stage 6) concerns will take place if the innovation is implemented effectively where individuals are concerned about the impact of the innovation and have ideas on how to refine their use of the innovation (Sta. Maria & Watkins, 2003; Anderson 1997). Hall and Hord (1987) suggested that self concerns (Stage 0, Stage 1 and Stage 2) and task concern (Stage 3) are to be addressed during the early stages of the innovation in order for the innovation to be implemented successfully.

2.3 Levels of Use (LoU)

The dimension of LoU examines the behaviour of the users during the implementation of an innovation and in this study, the implementation of the ISO 9001-based QMS. LoU focuses on describing the behaviour that are presented relative to the innovation as perceptions and feeling of individuals regarding the innovation can be rather different that their actions towards it (Hall & Hord, 1987). The LoU dimension attempts to define innovation user behaviour in operation term, which in other words, what the user is doing and the levels of use of the innovation (Hall, Loucks, Rutherford & Newlove, 1975). In this study, GSB staff are expected to be focused at the beginning of the use of QMS and are struggling with the management issues of the implementation. A questionnaire that was developed by Sta. Maria and Watkins (2003) was used in measuring the behaviour of the staff and their levels of use of the QMS during the early stage of the implementation.

2.4 Stages of Concern (SoC) and Levels of Use (LoU)

The Theory of Planned Behaviour (TPB) posits that staff attitude towards the behaviour, the subjective norm and perceived behavioural control (PBC) affects the behavioural intention which would in turn affect the actual behaviour (Ajzen, 1985, 1991; Ajzen & Madden, 1986). Attitudes as one of the determinants of the intention, is considered as the overall evaluations of the behaviour by the individuals (Conner & Armitage, 1998; Fishbein & Ajzen, 1975). Attributes that may be associated with the forming of attitude toward the behaviour such as the cost incurred and the consequences involved by performing the behaviour will automatically a degree of favourable or unfavourable attitude toward the behaviour. Subjective norm is a social factor that refers to the perceived social pressure to engage or not to engage in the behaviour. PBC is the individual's perception on the degree of difficulty of performing the behaviour (Ajzen, 1991). According to the general rule, the more positive the attitude, and the more favourable subjective norm which will lead to the greater the PBC in regards of the behaviour, and the stronger intention by the individual to perform the behaviour (Ajzen, 1985; 1991).

Based on Hall and Hord (1987), a lot of change initiatives failed when personal concerns are not addressed and attended to in the early stages of the implementation of innovations. Concerns are influenced by participants' feelings about an innovation, thus shaping their attitude towards the innovation. Their perception of their ability to use the innovation and, by the environment in which the innovation occurs contributes to the concerns toward the innovation (Hall & Hord, 1987). Therefore, these concerns or SoC are considered very likely to influence the motivation and the actual behaviour to perform the change initiatives, specifically the levels of use of the QMS. Drawing upon the argument given by Ajzen (1985), we reasoned that the seven stages of concern of the staff would affect the levels of use of the QMS in the graduate school of business. For example, high Personal concern by the staff would create an unfavourable attitude towards the QMS, thus affecting the levels of use of the QMS.

Other than that, we argue that certain demographic attributes would contribute to the depth of motivation and the levels of use of the innovation. Thus, the study was guided by the following research questions:

1. To what extent do the stages of concern toward the QMS affect the staff's levels of use of the QMS?
2. To what extent can the dimension of demographic attributes affect the staff's levels of use of the QMS?

Insert Figure (1) about here

2.5 Methods and Approach

The current study employed a quantitative survey method to investigate the direct relationship between the stages of concern of the GSB staff towards the implementation of the ISO 9001-based QMS and the level of use of the QMS by the staff. This study was carried in two stages. During the first stage of the study, the Stages of Concern questionnaire (SoCQ) was used to access the intensity of concerns of the GSB staff towards the implementation of the QMS. The adapted SoCQ from the CBAM (Hall et al., 1977) consists of a page of brief introduction to the study, demographics information such as age, academic qualification, job tenure in university and, position in GSB, followed by the 35 SoC items for respondents to answer using a 7-points Likert scale ranging from (1) 'strongly disagree' to (7) 'strongly agree'. Other than that, an additional category 0 is provided before the scale for items that are irrelevant to the respondent.

The second stage of the study was conducted with questionnaire that was based on the concept of level of use of innovation in CBAM (Hall & Hord, 1987) and focus on the use of the ISO 9001:2008-based QMS (Sta. Maria & Watkins, 2003). The questionnaire consisted of 14 items for respondents to answer with 7-points Likert scale (1 to 7) according to how well the item was describing the use of the QMS by the respondent at that time. An additional category 0 is also provided in before the scale for items that were irrelevant to the respondent in this questionnaire. This study was done simultaneously during the introduction and initial implementation stage of the ISO 9001:2008-based QMS to the GSB community to gauge their perception and concerns regarding the development and implementation of the QMS in GSB. The targeted respondents were the whole community of GSB, namely 12 members of the administrative staff and 21 academic staff who are all involved in the development and implementation of the QMS.

3. Results

3.1 Profile of Respondents

A total of 23 sets of SoCQ were sent out and, all the SoCQ was collected back representing a response rate of 100.0%. The profile of the respondents is shown in Table 1. Table 1 shows that a majority of respondents were with age range from 30 to 39 years old (43.5%) and 40 to 49 years old (26.1%), followed by respondents that were under 30 years old (21.7%) and 50 years old and above (8.7%). In terms of respondents' job tenure in university, 52.2 percent of the respondents had less than 5 years experience working in university, 26.1 percent had 5 to 10 years in university, 21.7 percent too for respondents that had more than 10 years in university respectively. In regards of type of employment, 83.3 percent of the academic respondents were permanent staff in GSB while 16.7 percent were contract based staff. As for type of employment of the administrative respondents, 81.8 percent were permanent staff while 18.2 percent were contract based staff.

Insert Table (1) about here

3.2 Reliability of the Study Instruments

As shown in Table 2, the Cronbach's alpha for Stages of Concerns variables were in the range of 0.65 to 0.80, which exceed Sekaran's (2003) minimum accepted level of 0.60. The reliability coefficient for the levels of use was relatively high, which was 0.87. As a result, the measures used in this study were considered reliable.

Insert Table (2) about here

3.3 Descriptive Statistics

The descriptive statistics of this study were tabulated in Table 3. The Consequences stage of concern was rather high (M = 5.03, SD = 0.99) whereas stages of concern in terms of Personal concern (M = 4.77, SD = 1.11), Management concern (M = 4.55, SD = 1.13), Informational concern (M = 4.48, SD = 0.92), Collaboration concern (M = 4.48, SD = 1.24), Refocusing concern (M = 4.26, SD = 0.84) and Awareness concern (M = 3.16, SD = 0.79) were all considered moderate. Other than that, the mean score for levels of use of QMS was also calculated (M = 4.41, SD = 1.09). In other words, the levels of use were rather moderate.

Insert Table (3) about here

3.4 Multiple Regressions

Table 3 illustrates the regression results for levels of use of the QMS. The model tested by regressing the 7 stages of concern as the independent variables and levels of use as the dependent variables. As shown in Table 4, all stages of concern have no significant effects on the levels of use of the QMS ($p > 0.05$), except consequences stage which is significantly related to the levels of use ($p < 0.05$). The R^2 value was found to be 0.456, which means that 45.6 % of the variance in LoU was explained by the stages of concerns.

Insert Table (4) about here

As shown in Table 5, the three demographic variables, namely position in GSB, type of employment and whether or not the staff are in the ISO Steering Committee have no significant effects on the levels of use of the QMS ($p > 0.05$). On the other hand, the R^2 value had a value of 0.34 which means that 34.0% of the variance in the LoU was explained by the demographic variables.

Insert Table (5) about here

4. Discussion

In this study, we attempted to examine the relationship between to what extent the SoC would affect the LoU of the QMS, as well the effect of demographic variables on the LoU. Our statistical results provided weekly support of for the effect of SoC on LoU. Consequences concern (Stage 4) alone was found to have a positive and significant effect on the levels of use of QMS. In other word, the higher level of the staff's Consequences concern, the higher level of their levels of use of QMS. The staff concerned about the effect of the QMS on their immediate colleagues and communication effectiveness within the organization, all of which will be able to stimulate their levels of use of QMS.

Contrary to expectation, the concern of stage 0, 1, 2, 3, 5 and 6 of the staff do not have any significant effect on the levels of use of QMS although concerns or attitudes are considered as one of the factors that would influence the actual behaviour of an innovation (Azjen, 1991). However, the results of the regression analysis do showed that SoC explained 45.6% of the variance in the levels of use of the QMS which means that SoC had a relatively strong explanatory power in the matter of the levels of use of QMS. Other than that, despite that the three demographic variables were expected to have significant effect on the LoU of the QMS, all of them have been found to have no effect on the LoU. It was assumed that the different positions of the staff (academic or administrative), the type of employment (permanent position or contract based) and whether the staff are in the ISO steering committee would affect the commitment of the staff towards the QMS and in turn influencing the actual use of QMS. However, the results have showed otherwise. The regression analysis depicted that the demographic variables has a relatively moderate level of explanatory power over the use of QMS with 34% of the variance in the LoU explained by the demographic variables.

Despite the rather strong explanatory power over the matter of the QMS LoU, the concern of stage 0, 1, 2, 3, 5 and 6 of the staff, as well as all three demographic variables have no significant effect on the LoU. One explanation to this may be the use of QMS has been made mandatory in GSB; the staff have to use it even though they are having personal concerns and doubts over the QMS. Under such circumstances, personal concerns, level of commitment or any other attributes would have no impact over the actual use of QMS. Another reasonable explanation over these insignificant results may be the one year time span of this study was too short to gain enough data to produce the significant results. A key assumption of an innovation is that change as a process rather than a decision-point (Hall, 1978; Hall et al., 1975). In addition, the stages of concerns and levels of use of an innovation present a possible developmental progression through the innovation (Kelly & Staver, 2004; Hall et al., 1975). This study was conducted during the early stage of the QMS implementation in GSB. The time constraint has prevented us to make a more intensive, in-depth examination throughout the QMS adoption and implementation process, thus hindering the examination of the effects of SoC and demographic variables on the LoU.

5. Conclusion

This study set out to investigate the depth of effects of stages of concern and demographic variables: position in GSB, type of employment and whether the staff are in the ISO steering committee will have on the use of the ISO 9001:2008-based QMS in a graduate school of business.

Surprisingly, the analysis results showed all of the independent variables (except Consequences concerns) have no significant effect on the use of QMS. This contradicted Azjen's (1985) theory of planned behaviour (TPB) where attitude, subjective norm and PBC would have effect on behaviour intention which in turn would affect the actual behaviour. Nonetheless, although the majority analysis results were not significant, it is still very important for the top management to understand the concerns that the staff are experiencing throughout the QMS implementation and take on adequate intervention measures to prevent their lack of involvement in the QMS. In this regard, the school's top management may organize continuous training on the ISO 9001:2008 and implement a reward system that would encourage the staff to fully incorporate the use of QMS into their routine job process. These initiatives may be vital to sustain the ISO 9001:2008-based QMS for long term as the innovation is mandatorily imposed rather than actively self-participated. This shows that the staff are using the innovation despite their personal concerns and reservation toward it, thus this indicates that the QMS can be short-lived should the concerns are not addressed properly.

The insignificant results have raised issues on the factors that could affect the use of an innovation; specifically the relationship between the stages of concern and the levels of use of the innovation in an organization is put into question. Several limitations of this study may give ways to some suggestions for future research. First, the period of time in conducting this study was limited; as such the effects of the stages of concern may not show immediately. A longitudinal study is recommended to fully understand the relationship and developmental progression between the stages of concern and levels of use of an innovation. Next, the use of QMS was made mandatory to the staff. Thus, the staff are using the innovation disregard of their concerns. A new and more appropriate method can be undertaken to measure the effect of the imposition on the actual behaviour and motivation level of the staff. Finally, this study has employed only questionnaires that could capture only objective data from the staff throughout this study. It will be more interesting to use structured interview approach to be included in future studies to examine further in depth of the actual perception and levels of use of the staff in the organization.

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Figure 1: Research framework of the study

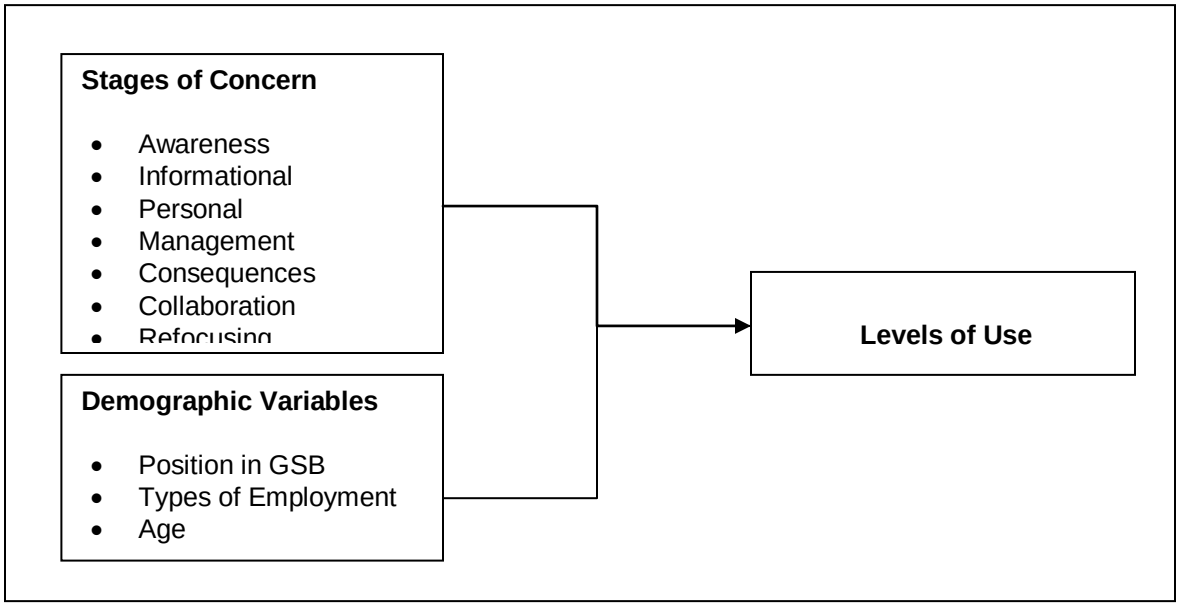

Table 1: Profile of Respondents

Variable	Frequency	%
Age (years)		
Under 30	5	21.7
30 – 39	10	43.5
40 – 49	6	26.1
50 and above	2	8.7
Job Tenure (years)		
Less than 5	12	52.2
5- 10	6	26.1
More than 10	5	21.7
Type of Employment		
• **Academic staff**		
Permanent	10	83.3
Contract	2	16.7
• **Administrative staff**		
Permanent	9	81.8
Contract	2	18.2

Note: N=23.

Table 2: Reliability Coefficients for the Study

Variables	Cronbach Alpha
Awareness (Stage 0)	0.66
Informational (Stage 1)	0.76
Personal (Stage 2)	0.69
Management (Stage 3)	0.71
Consequences (Stage 4)	0.74
Collaboration (Stage 5)	0.80
Refocusing (Stage 6)	0.65
Levels of Use	0.87

Note: N=23.

Table 3: Mean Scores and Standard Deviations for the Study Variables

Variables	Mean (M)	Standard Deviation (SD)
Awareness (Stage 0)	3.16	0.79
Informational (Stage 1)	4.48	0.92
Personal (Stage 2)	4.77	1.11
Management (Stage 3)	4.55	1.13
Consequences (Stage 4)	5.03	0.99
Collaboration (Stage 5)	4.48	1.24
Refocusing (Stage 6)	4.26	0.84
Levels of Use	4.41	1.09

Note: N=23.

Table 4: Regression Results of the Relationship between the Stages of Concerns and the Levels of Use

Independent Variables	Std. β
Awareness (Stage 0)	-0.20
Informational (Stage 1)	-0.39
Personal (Stage 2)	-0.04
Management (Stage 3)	-0.03
Consequences (Stage 4)	0.74*
Collaboration (Stage 5)	-0.35
Refocusing (Stage 6)	0.38
R^2	0.46
Adjusted R^2	0.20
ΔR^2	0.46
F- value	1.79
Δ F-value	1.79

Note: *p<0.05, **p<0.01

Table 5: Regression Results of the Relationship between Demographic Profiles and the Levels of Use

Independent Variables	Std. β
Position in GSB	-0.36
Type of Employment	0.37
ISO Steering Committee	-0.34
R^2	0.34
Adjusted R^2	0.24
ΔR^2	0.34
F- value	3.28
Δ F-value	3.28

Note: *p<0.05, **p<0.01