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Critical Factor in Optimizing Quality Management System Process Implementation of Private Higher Education in Sulawesi - Indonesia.

[1]Abdul Mail, [2]Pratikto, [3]Sudjito Suparman, [4]Purnomo Budi Santoso

[1]*Indonesian Muslim University, Department of Industrial Engineering, Faculty of Industrial Technology, 90231, Indonesia.*
[2]*Brawijaya University, Department of Mechanical Engineering, Faculty of Engineering, 65145, Indonesia.*
[3]*Brawijaya University, Department of Mechanical Engineering, Faculty of Engineering, 65145, Indonesia.*
[4]*Brawijaya University, Department of Industrial Engineering, Faculty of Engineering, 65145, Indonesia.*

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ABSTRACT

National Accreditation Board for Higher Education (NAB-HE) asserted that college ought to keep education quality as an accountability process to public. This study purpose is to determine factors that significantly affect on implementation optimization of quality management system process at private universities in Sulawesi - Indonesia. Research results showed that research hypotheses (H1a, H1b, H1c, H2, and H3) is accepted. It can be concluded that leadership effectiveness has a positive affect on organizational commitment, internal quality audits and quality culture. Similarly, there is considerable empirical evidence to suggest that organizational commitment and internal quality audits are also have positive and significant effect on quality culture. Relationship between variables of quality assurance optimization process at private universities in Sulawesi - Indonesia is very strong, with average of 83.8% variance extracted (estimate) can explain relationship of leadership effectiveness, organizational commitment and internal quality audits. This reinforces that conceptual model of leadership effectiveness, organizational commitment and internal quality audits simultaneously affect on quality culture.

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INTRODUCTION

Quality issues in higher education have become an international concern. Therefore, Indonesian government, through National Accreditation Board for Higher Education (NAB-HE) asserted that college is obliged to keep education quality as a responsibility toward public. Quality in question is circumstances totality and characteristics of inputs, process, outputs, and outcomes are measured based on a number of standards that have been set. To achieve that objective, college may adopt a quality management system that adapted to cultural and institutional capacity (Sallis, 1993). One concepts of quality management system that can be adopted by college is a total quality management (TQM). Service quality or services expected from TQM are design (designable), controlled (controllable), and managed (manageable) that continuously increase quality system, and oriented on two basic principles, namely customer satisfaction and continuous improvement. According to Oakland (2004); Roa *et al* (1996), Samson and Terziovski (1999), there are several approaches to implement TQM concepts, such as ISO 9000. Shutler and Crawford (1998) said that ISO 9000 as an international standard for quality management systems can be applied in higher education. Most private universities in Sulawesi adopt ISO 9000 quality management system.

Sometimes there are errors of concept understanding as if TQM only task for a person or a few people in organization. TQM does not something that be done only by leaders then gave instructions to his subordinates. Tenner and De Torro (1992) said quality is not only university responsibility but became responsibility of everyone in organization. Ehlers (2009) explain Interesting thing that quality development in higher education is often limited to bureaucratic documentation, but ignores quality development as a holistic organizational culture. This was confirmed by Stravinskiene (2010) that quality assurance process, both from within and from outside institution, does not necessarily mean that higher education institutions have become a quality culture. These opinions can strengthen cultural facts related to low quality culture of ISO 9000 quality management system implementation, particularly in private universities in Sulawesi. Data of NAB-HE accreditation shows that from total 1,166 education program that dispersed in 353 private higher Education (PHE), A accreditation

Corresponding Author: Abdul Mail, Indonesian Muslim University, Department of Industrial Engineering, 90231, Makassar, Indonesia.
Ph: (+62)411 455667

(very good) only 3 (0.26%), B accreditation (good) 146 (12.52%), C (enough) 677 (58.06%) and is not accredited 340 (29.16%).

Various case studies revealed that implementation of ISO 9000 quality management system requires continuous effort and commitment of resources, primarily related to changes in attitudes, and cultural systems work. Kim and Thomas (2012) identifies four main factors for implementation of effective quality management systems in higher education, namely leadership, stakeholder engagement, quality processes implementation and cultural change. Panagiotis and Dimitra (2009) also said that organizational culture and staff satisfaction affect on services quality provided, as well as enhancing successful implementation of quality assurance. This opinion is strengthened by Ali and Musah (2012) findings that there is no statistically significant correlation between quality culture and performance of college staff. While Power (1997) stated that accountability and transparency through the audit process is one important principle to improve academics participation in quality assurance process. This opinion is supported by Shapiro (1987) that control by the audit techniques can provide a guarantee to improve quality assurance.

TQM Basically is a totality to require every person in organization to engage quality improvement efforts. Optimization of ISO 9000 quality management system process requires aspects of effective leadership, organizational commitment, as well as internal quality audits consistently. This process simultaneously is able to establish a quality culture for the entire academic community within organization. Basic principles of ISO 9000 focused on concept of continuous quality improvement with system improvements orientation involving all functions and levels within institution (Goetsch & Davis, 2002).

Based on description above then this paper intends to know:

1. Are leadership effectiveness, organizational commitment and internal quality audit process have significant effect on quality culture in private universities.
2. How correlation between factors of leadership effectiveness, organizational commitment, internal quality audits, and quality culture on optimization process of college quality assurance system.

Theoretical Review:

Sallis (1993) stated that implementation of quality assurance systems in higher education can be developed by adopting a quality management system that adapted to culture and capacity of each institution. Oakland (2004), Roa *et al* (1996), Samson and Terziovski (1999) show several approaches to implement concept of TQM quality management system. ISO 9000, international system for best quality management can be applied to higher education (Shutler and Crawford 1998). Nancy (1994) stated careful planning of ISO 9000 can lead to improve quality by stressing the importance to manage internal processes. Therefore, PDCA concept is a stage to implement ISO 9000 an integrated system, starting from plan (component input), implementation (process components), checking and action (component output).

Venkatraman (2007) stated that quality management frameworks emphasize on continuous improvement of higher education programs through a set of procedures to prevent errors to improve work quality, performance, productivity and effectiveness. Quality assurance process does not necessarily mean that higher education institutions must had a quality culture (Stravinskiene, 2010). Quality assurance process is not only university responsibility but everyone in organization (Tenner and De Torro, 1992). ISO basic principles focus on concept of continuous quality improvement with orientation to system improvements for all functions and levels within institution (Goetsch & Davis, 2002).

Salaheldin (2009) stated that less support from top management was reported as biggest problems to hinder quality management implementation. Kim and Thomas (2012) show four main factors to implement quality management systems effectively in higher education, namely leadership, stakeholder engagement, implementation of quality processes and cultural change. Panagiotis and Dimitra (2009) said that organizational culture and staff satisfaction affect services quality provided.

Adversely, Ehlers (2009) said that quality development in higher education is often limited to bureaucratic documentation. Therefore, accountability and transparency through the audit process becomes an important principle to increase academics participation in quality assurance process (Power, 1997). Shapiro (1987) also uses audit techniques to provide a guarantee of quality assurance improvement.

Research Hypothesis:

Salaheldin (2009) stated that lack support from top management is biggest problem to impede TQM implementation. Therefore, organizations need effective leaders with ability to understand goals themselves and also how they are integrated with broader goals. Koh *et al* (1995); Mowday *et al* (1982) said that effective leadership can help organizations to survive in a situation of uncertainty. Leadership process can affect and capable to direct his subordinates to reduce uncertainty to achieve organizational goals. Very important to remember that a successful quality management is strongly associated with management organization changes namely staff commitment, goal setting, mission development, understanding the process, and monitoring (Oakland, 2004; Andrews, 1987).

Romzek (1990) mentions that an increase in organizational commitment is something that is very important for motivation and staff quality at public sector because the public service requires a good commitment. If staff commitments are good, public service is also good, and vice versa. Basically, staff would like to contribute to achieve organization's goals, although nature and the commitment are different (Meyer and Allen, 1991). Therefore, engagement and loyalty is greatly influenced by how staff job is consistent with their expectations (Babakus *et al*, 1996; Ahire and Dreyfus, 2000). Leadership have role to lead (directive) to provide guidance to staff on what should be done and how to do it, making jobs schedule, and maintain work standards.

Ehlers (2009) stated that quality development in higher education is often limited to bureaucratic documentation, but ignores quality development as a holistic organizational culture. This was confirmed by Stravinskiene (2010) that quality assurance processes, both from within and from outside the institution, does not necessarily mean that higher education institutions have become a quality culture. Therefore, we need an internal audit process to monitor consistency of overall process. Norman (1997) said that higher demands toward quality evaluation accountability makes audit capacity development become very important.

Referring to discussion above, it can be said that stimuli (effective leadership and consistent quality audits) can create commitment, which then causes affective, cognitive or behavioral reactions. In other words, if constellation of values internalization has happened, then a staff consciously or unconsciously will become a standard or criterion that affects a person's actions that permanently created into a culture.

Based on frameworks above, research hypothesis are formulated as follows:

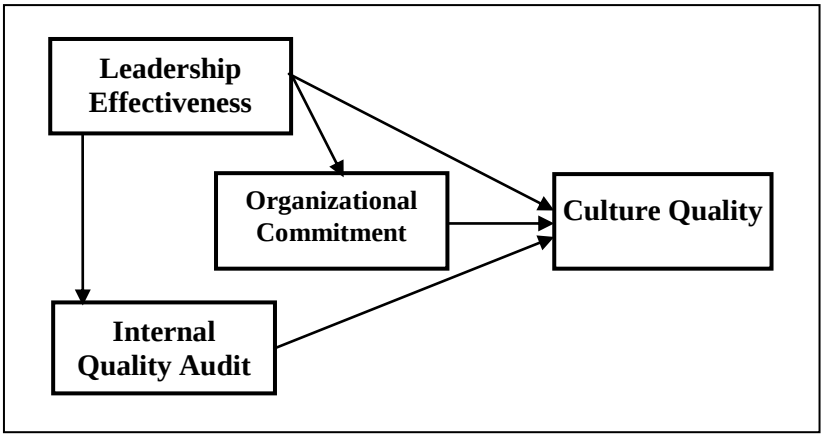

Fig. 1: Multidimensional Structural Model.

H1a: Leadership effectiveness significantly affect on organizational commitment
H1b: Leadership effectiveness significantly affects internal quality audits
H1c: Leadership effectiveness significantly affects quality culture
H2: organizational commitment significantly affect on quality culture
H3: Internal audit quality significantly affect on quality culture

Methodology:

Data:

Data was collected through random direct visits and delivery to several private universities in Sulawesi, Indonesia. Demographic characteristics of colleges sample were not differentiated by a particular group. Questionnaires contain questions related to leadership effectiveness, organizational commitment, internal quality audits process and quality culture in higher education. Total 300 questionnaires were sent randomly, there are 193 questionnaires were returned. Total of 15 questionnaires were incomplete. Valid questionnaire is 178, with 59,3% response level. This study using confirmatory factor analysis toward exogenous and endogenous variables. Structural equation model was used to test causal relationship between leadership effectiveness, organizational commitment, internal quality audits and quality culture. Ferdinand (2002) stated that maximum likelihood estimation techniques need 100-2000 samples 100-200. Table 1 shows technical characteristics of this study samples.

Measurement instrument:

Data is collected from indicators and measured by Likert scale five point ranging from "1 = strongly disagree" and "5 = strongly agree" (Likert, 1932). These measurement instruments were adopted from some relevant research and references. Leadership effectiveness variable was measured by six indicators namely institutions leadership role to dinamize organization, directing, influencing, skills development and staff

capabilities. Organizational commitment was measured by four indicators namely attitudes that reflecting loyalty, staff attention to organization success and sustainable progress. Audit system variable consists of four indicators namely to assess whether institution has a system to realize goals, programs, plans and commitments. Audit system variable consists of four indicators to assess whether institution has implemented procedures, work instructions and plans consistently. Product audit variable is measured by four indicators that aim to assess whether product in accordance with specifications as degree attainment of customer satisfaction. Quality culture variable measuring instrument consists of four indicators to analyze the pattern of habits, beliefs, behavior and attitude towards quality (Table 2).

Table 1: Technical Specifications of Confirmatory Analysis

Samples	Lecturers of Private Higher Educations
Location	Sulawesi - Indonesia
Samples Type	178 respondent from 25 private Higher Education (HE), consisting of: 12 (48.0 percent) universities; 3 (12.0 percent) institutes; 6 (24.0 percent) of higher school; 4 (16.0 percent) academy. 11 (44.0 percent) PHE in South Sulawesi; 3 (12.0 percent) PHE in West Sulawesi, 4 (16.0 percent) PHE in Central Sulawesi, 4 (16.0 percent) PHE in North Sulawesi and 3 (12.0 percent) PHE in Southeast Sulawesi.
Sampling method	Stratified random sampling
Sampling error	6,55 percent
Confidence level	99 percent;
Data collection	Direct visit + post mailing
Date of fieldwork	January 2013 - April 2013

Validation and reliability of measurement:

Pre-test was done to get feedback on content, format, comprehensibility and accuracy of measurement instruments. Although this measurement instrument adopt various reference but still can become a new instruments measurement. Initial phase was to test validity of homogeneity. Item-total correlations were used to assess measurement consistency (Anderson and Gerbing, 1988). Score of each item correlated with total score of question items in one variable. If item scores have positive correlation with total score items and higher than intercorrelations between items, it means that instrument is valid. Indicator with lower item-total correlation and factor loading should be discarded (Bagozzi, 1981). This correlation uses Pearson product moment correlation> 0.4 (Santoso, 2000) (Table 3). Reliability measurements was evaluated by Cronbach alpha> 0.8 (Nunnally, 1979). Based on Table 4, the instrument's measurements are very reliable where statistical tests value were exceeding minimum required value.

Table 2: Instrument Measurement (Main Characteristic).

Measurement	Items	Adapted from	Concept
Leadership Effectiveness	6	*Stoner et al, (1996)*	The role of institutions to dynamize organization, directing, influencing and emphasizes the development of skills and abilities of staff
Organizational Commitment	4	*Luthans, (2006)*	An attitude that reflects the loyalty and attention of staff to organization success as well as continued progress
Audit System	4	*Quality Management System-Guidelines for the Application of ISO 9001: 2000.*	To determine whether the institution has systems in operations (target institutions, programs, plans, procedures, commitments)
Feasibility Audit	6	*Quality Management System-Guidelines for the Application of ISO 9001: 2000.*	To ascertain whether the procedures, work instructions and consistently implemented (planning)
Product Audit	4	*Quality Management System-Guidelines for the Application of ISO 9001: 2000*	To determine whether the products conform to specifications as the degree of achievement of customer satisfaction.
Quality Culture	4	*Watson M.A.*, and *Gryna, F.M., (2001)*	To measure the habits, beliefs, behaviors and attitudes of staff towards quality.

Confirmatory Factor Analysis:

Model fit was tested through structural equation modeling (SEM), using the statistical software AMOS 18 based on maximum likelihood method (Anderson and Gerbing, 1988). Various psychometric instruments properties such as reliability, dimensional, convergent and discriminant validity were also tested. The confirmatory factor analysis showed good model fit based on following criteria: Cmin/df = 1.467; RMR = 0.021; RMSEA = 0.046; PNFI = 0.556; NFI = 0.656; RFI = 0.594; IFI = 0.857; TLI = 0.821; CFI = 0.849, and Chi-square = 376.52, as recommended by Anderson and Gerbing (1988) and Yilmaz (2004).

Table 3: Validity Measurement.

Estimator							
Leadership Effectiveness	Indicator	X1.1	X1.2	X1.3	X1.4	X1.5	X1.6
	Pearson correlation	0,837	0,932	0,857	0,683	0,722	0,716
Organizational commitment	Indicator	X2.1	X2.2	X2.3	X2.4		
	Pearson correlation	0,811	0,871	0,885	0,547		
Audit System	Indicator	X3.1	X3.2	X3.3	X3.4		
	Pearson correlation	0,805	0,764	0,891	0,875		
Feasibility Audit	Indicator	X4.1	X4.2	X4.3	X4.4	X4.5	X4.6
	Pearson correlation	0,902	0,810	0,738	0,953	0,825	0,871
Product Audit	Indicator	X5.1	X5.2	X5.3	X5.4		
	Pearson correlation	0,793	0,827	0,810	0,841		
Quality Culture	Indicator	Y1	Y2	Y3	Y4		
	Pearson correlation	0,826	0,872	0,781	0,765		

Correlation is significant at 0.01 levels (2-tailed)

Table 4: Reliability measurement.

Estimator	Leadership Effectiveness	Organizational Commitment	System Audit	Feasibility Audit	Product Audit	Quality Culture
Cronbach α	0,874	0,787	0,779	0,840	0,821	0,910
Valid (%)	96,3	96,3	77,8	77,8	77,8	96,3
Excluded (%)	3,7	3,7	22,2	22,2	22,2	3,7

Construct validity test was used to assess whether these indicators can explain constructs. Table 5 show most of factor loadings above 0.7 and all of them were above 0.5. These results support for dimensions, convergent and discriminant validity (Anderson and Gerbing, 1988). In addition, if variance extracted value > 0.5, it means that the relationship between constructs are quite close (Table 6).

Table 5: Convergent and discriminant validity (n = 187).

Estimator	Indicator	Estimate (factor loadings)	Estimator	Indicator	Estimate (factor loadings)
Leadership Effectiveness	Visionary (X1.1)	0,769	Feasibility Audit	Process Management (X4.1)	0,723
	Motivator (X1.2)	0,776		Personnel (X4.2)	0,726
	Integrator (X1.3)	0,819		Learning (X4.3)	0,701
	Braveness (X1.4)	0,789		Improvement (X4.4)	0,752
	Skill (X1.5)	0,618		Feedback (X4.5)	0,744
	Abstraction (X1.6)	0,853		Sustainable Process (X4.6)	0,691
Organizational Commitment	Desire (X2.1)	0,719	Product Audit	Main Competence (X5.1)	0,772
	Responsibility (X2.2)	0,668		Excel Competence (X5.2)	0,764
	Loyalty (X2.3)	0,734		Other Competence (X5.3)	0,717
	Certainty (X2.4)	0,771		Softskill (X5.4)	0,740
System Audit	Organization Goal (X3.1)	0,803	Quality Culture	Habits (Y1)	0,711
	System Approach (X3.2)	0,796		Beliefs (Y2)	0,735
	Process Interaction (X3.3)	0,733		Behavior (Y3)	0,709
	Quality Standard (X3.4)	0,758		Attitude (Y4)	0,703

Table 6: Variance extracted.

			Estimate
Organizational commitment	<-->	Leadership Effectiveness	0,779
Internal quality audits	<-->	Leadership Effectiveness	0,718
Internal quality audits	<-->	Organizational Commitment	0,861

Results:

Table 7 and Figure 2 shows hypothesis testing results that significant at 95 percent confidence level using AMOS 18. As defined in model, there is no sufficient reason to reject research hypothesis (H1a, H1b, H1c, H2, and H3). Therefore, it can be said that leadership effectiveness has a positive effect on organizational commitment, internal quality audits and quality culture. Similarly, there is considerable empirical evidence to suggest that organizational commitment and internal quality audits are also have positive and significant effect on quality culture. Table 7 indicated that structural equation for quality culture can be explained 83.8% by leadership effectiveness, organizational commitment and internal quality audits. This confirms that conceptual model of leadership effectiveness, organizational commitment and internal quality audits simultaneously affect on quality culture. This goodness of fit result for causal model shows a reasonable match between model and data:

Table 7: Hypothesis Testing Result of Structural Coefficients.

Hypothesis			Estimate	S.E.	C.R	P
Quality Culture	<--->	Leadership Effectiveness	0,798	0,319	2,503	0,012
Quality Culture	<--->	Organizational Commitment	0,940	0,354	2,657	0,008
Quality Culture	<--->	Internal Quality Audit	0,893	0,426	0,217	0,028
Organizational Commitment	<--->	Leadership Effectiveness	0,852	0,226	3,776	***
Internal Quality Audit	<--->	Leadership Effectiveness	0,711	0,209	3,408	***

Note: *** show significant at P <0.05.

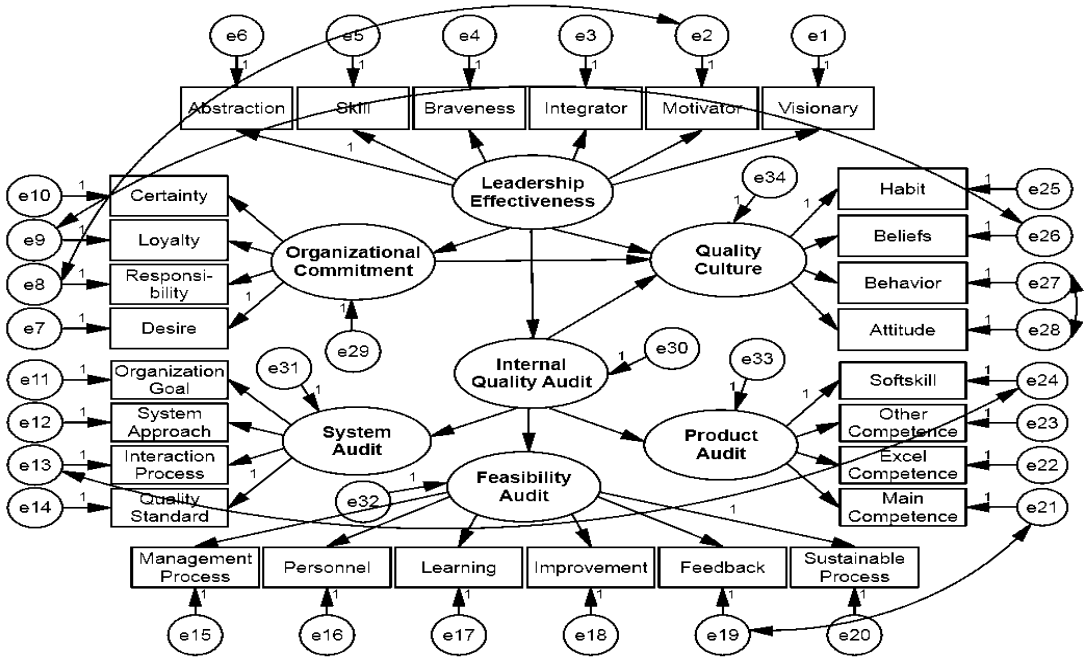

Fig. 2: Model overalls (Final model).

Discussion:

TQM Literature review for higher education is still limited and still little to discuss about obstacles of optimization process implementation. Sometimes attention is more focused on training tools and techniques compared to understand human factors. Kevin *et al* (2011) said that cultural dimension of teamwork is most important factor to improve TQM implementation. This study contributes to literature on how process of internal quality audits, supported by effectiveness leadership and organizational commitment can support quality culture in higher education.

1. Effect of leadership effectiveness on organizational commitment:

Stoner *et al* (1996) said that leadership role for organization are dramatizing, directing, influencing and emphasizing the skills development and staff capabilities. This process is believed will affect organizational commitment. Organizational commitment is an attitude that reflects staff loyalty intention to organization and sustainable process through attention to organizational success and sustainable progress (Luthans, 2006). Test results showed that hypothesis H1a is accepted with 0.852 factor loading. This value indicates that relationship of leadership effectiveness on organizational commitment is strong enough. Manifest of Braveness variables (0.789) has the largest factor loading, followed by abstraction (0.853), visionary (0,769), and motivators (0.776). This indicates that leadership effectiveness will depend on willingness to take risks in any decision that supported by ability to interpret trends and events into future perspectives in relation to vision, mission and goals of organization. This leadership factors simultaneously can increase staff commitment with a strong belief to organization values and willingness to strive for organization, feeling of being part of organization and there is no intention to change job, and a strong awareness of each individual in organization toward risks faced.

2. Effect of leadership effectiveness on internal quality audits:

Generally, effective leadership must be able to interpret future tendency and then poured into vision, mission and organization goals. Therefore, internal quality audit is a reflection of leadership process to assess whether all processes optimally can implement the planned quality to realize the vision, mission and organization goals. Norman (1997) stated that higher demands on accountability and Audit quality evaluation were very important. Kettunen (2012) said that an audit can help organizations take corrective action to describe process change or to maintain process. Test results showed that hypothesis H1b is accepted with factor loading of 0.711. This value indicates that leadership effectiveness has strong affect on internal quality audits. Indicators of organizational goals (0.803) and system approach (0.796) have highest factor loading. These mean that quality audit process needs to evaluate organization goal to know these has reflect leader efforts to realize vision, mission and organization goals.

Effect of leadership effectiveness on quality culture:

Cameron and Sine (1999) stated that quality culture should be seen as a cultural phenomenon that consists of values, expectations, and behavioral tendencies that involve ideological principles of instruments quality, processes, or quality technical aspects according to criteria. Therefore, top management should contribute through strategic planning (Juran, 1989), while staff can participate through empowerment and human resource involvement (Ahire and Dreyfus, 2000). Therefore, we believe that life experiences and environment process within organizations can encourage habits, then translated into behavior and eventually became a belief. Organization experience will also create attitude. Test results showed that hypothesis H1c is accepted with factor loading of 0.798. It means leadership effectiveness have significant effect on quality culture.

Effect of organizational commitment on quality culture:

Ghobadian & Gallear (1997) stated that commitment to quality and attitude towards quality assessment can encourage individuals or groups within organization to behave and follow rules or regulations of quality system. Stimuli can create commitment, which then cause certain reactions as affective, cognitive or behavioral. If value constellation has been internalized, then a staff consciously or unconsciously become a cultural or criterion that affects a person's actions. The test results showed the hypothesis H2 is accepted with a value factor loading of 0.940. This suggests that organizational commitment have significant effect on quality culture.

Effect of Internal Quality Audit on Quality Culture:

Power (1994) stated that audit has been increasingly viewed as an instrument that can be used to make institution, at least formally, more accountable to their stakeholders. However, Power (1997) stated that audit may only limit "rituals of verification", but it expects can control and giving certainty guarantee (Shapiro, 1987). Therefore, audit becomes requirement for all affective supervision. Planned and orderly quality audit process will create sustainable improvement process until it is internalized into a quality culture. Culture creation within a person need a process as a trigger from outside. Research results show that hypothesis H3 is accepted with factor loading of 0.893. It shows a significant effect of internal quality audits on quality culture.

Conclusions and Recommendations:

It can be concluded from explanation above that leadership effectiveness has a positive effect on organizational commitment, internal quality audits and quality culture. Similarly, empirical evidence suggests that organizational commitment and internal quality audits are also have positive and significant effect on quality culture. The relationship between variables of optimization process of quality assurance in Private Higher Education in Sulawesi - Indonesia is very significant, where average of 83.8% of variance extracted (estimate) can be explained by effect of leadership effectiveness, organizational commitment and internal quality audits.

This study results study have practical implications for a number top management of Private Higher Education to encourage consistency and processes optimization to implement ISO 9000 quality management system. It recommended to Higher Education to be able to further enhance leadership effectiveness, encourage increased commitment of staff and facilitate quality audit process in a planned and systematic.

This study limitations are samples only at Private Higher School in Sulawesi and does not involve public universities. These findings may not be generalizable to other universities. Further study is recommended to fill this gap. This can help in strengthening this study results to make the research result can be generalized.

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