“The determinants of competitiveness in quality: a study among the Malaysian private higher education institutions”

AUTHORS	Cheng Ling Tan Yen Nee Goh Hon Seng Chan

ARTICLE INFO	Cheng Ling Tan, Yen Nee Goh and Hon Seng Chan (2015). The determinants of competitiveness in quality: a study among the Malaysian private higher education institutions. *Problems and Perspectives in Management*, *13*(2-si), 371-379
RELEASED ON	Tuesday, 28 July 2015
JOURNAL	"Problems and Perspectives in Management"
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES **0**

NUMBER OF FIGURES **0**

NUMBER OF TABLES **0**

© The author(s) 2024. This publication is an open access article.

Cheng Ling Tan (Malaysia), Yen Nee Goh (Malaysia), Hon Seng Chan (Malaysia)

The determinants of competitiveness in quality: a study among the Malaysian private higher education institutions

Abstract

In recognition of the significant contribution of Private Higher Education Institutions (PHEIs) to the Malaysian economy via foreign exchange earnings, it is important to explore the determinants that could enhance the PHEIs competitiveness in quality. The PHEIs, just like other profit organizations, see the dire need to gain competitive edge due to stiff competition and pressure to face globalization. Thus, the PHEIs which intent to gain competitive edge need to search for effective and creative ways to attract, retain and foster stronger relationship with their students. One of the effective ways to raise their competitiveness level is to enhance the quality of their deliveries. Due to this basis, a model linking the determinants (top management support, government support, stakeholders' pressure, faculty support, and regulation compliance) and competitiveness in quality was tested. This study employed Partial Least Squares (PLS) to analyze 138 data collected from PHEIs in Malaysia. The results revealed that five determinants hypothesized in this study significantly influence the PHEIs' competitiveness in quality. This study provides insights for PHEIs on how to increase the educational quality through appropriate methods that could directly enhance their competitiveness level. It also contributes to the growing of literature in the area of competitiveness in quality in PHEIs. Besides, some limitations are identified and discussed.

Keywords: competitiveness in quality, determinants, private higher education institutions, Malaysia.
JEL Classification: I29.

Introduction

Malaysian Higher Education Institutions (HEIs) have played a significant role in the development of the nation's workforce and the economy, particularly after 1996 where Private Higher Education Institutions (PHEIs) were established along with the public-owned tertiary institutions to provide more opportunities for Malaysians to pursue higher education within the country (Ramachandran, Siong & Ismail, 2009). The development of the PHEIs in Malaysia looks encouraging in recent years. Today, there are 33 private universities and university colleges, 4 foreign university branch campuses, and about 500 private colleges established in Malaysia (Ministry of Higher Education, 2013). These PHEIs play an important role in economic development where they provide human resources development, high skills training, and the application and acquisition of new knowledge (Basir, 2010). Besides, these institutions also help Malaysia to be an educational hub in Asian region (Arokiasamy, Ismail, Ahmad & Othman, 2009). The establishment of the Malaysian Ministry of Higher Learning in March 2004 can be considered as a progressive step of the Government in strengthening and developing the tertiary education sector. The policy of this Ministry is closely associated with efforts to improve academic quality and be the core element in the HEIs operation towards the students (Hassan, Asimiran, Rahman & Kamarudin, 2008).

As students have variety of options in selecting the educational institutions nowadays, the determinants that enable PHEIs to attract and retain students should be thoroughly studied. PHEIs, which intent to gain competitive edge in the future, may need to search for effective and creative ways to attract, retain and foster stronger relationships with their students. As a private organization, they have to depend on the interaction and mechanism of the market. Hence, competition to recruit students may become more intense. Additionally, Malaysia aspires to become the regional educational hub in Asia. Thus, Malaysian Government has for long not compromised on the quality of education and enforced the PHEIs to improve their quality of education which is in-synchronization with the current trend in education industry to the students. However, the lack of government's financial support and funding reforms to PHEIs has caused them lack of competitiveness in quality. In addition, there are limited studies on the factors that influence the competitiveness in quality among PHEIs in Malaysia. Most of the researches were conducted in overseas institutions. Hence, this study tends to identify the determinants of competitiveness in quality among PHEIs in Malaysia.

1. Literature review

1.1. Competitiveness in quality. Today, PHEIs competitiveness in quality has started gaining the attention of the policymakers, educational planners, and administrators as well as various stakeholders of the educational system (Sahney, Banwet & Karunes,

© Cheng Ling Tan, Yen Nee Goh, Hon Seng Chan, 2015.
Cheng Ling Tan, Graduate School of Business, Universiti Sains Malaysia, Malaysia.
Yen Nee Goh, Graduate School of Business, Universiti Sains Malaysia, Malaysia.
Hon Seng Chan, Graduate School of Business, Universiti Sains Malaysia, Malaysia.

2010). Attempts by educational institutions to become more efficient and customer-centric are underway to improve the quality of their services, achieve competitive advantage and move on a path of academic excellence. Quality assurance in higher education is one of the most important priorities for PHEIs (Trivellas & Dargenidou, 2009). They are striving hard to enhance the quality of provision to increase the competitiveness amongst education providers. Balan (1990) and Patrinos (1990) argued that PHEIs provide the type of education most in demand, and graduates typically experience lower unemployment rates, and will be able to get better paid jobs. Quality improvement initiatives have resulted in sustainable competitive advantage (Hadikoemoro, 2002). Higher education is a service that students are now expected to fund themselves at a greater expense. This has made higher education become increasingly competitive in the market (Angell, Heffernan & Megicks, 2008).

1.2. The determinants. *1.2.1. Top management support.* Top management is a set of individuals at the top level of the organization responsible for the strategic and organizational decisions that affect the direction, operations, and performance of the company as a whole (Moore, Konrad & Hunt, 2010). Top management team includes the Chief Executive Officer (CEO), Chief Operating Officer (COO) and other executive levels, such as Executive Vice President and Senior Executive Vice President. Senior or top management support is essential for an institution to perform (Mooney, Mahoney &Wixom, 2008).

1.2.2. Stakeholder pressure. Stakeholder refers to a person, group, or organization that has direct or indirect stake in an organization because it can affect or be affected by the organization's actions, objectives, and policies (Freeman, 1984). Stakeholders include both internal and external stakeholders. External stakeholders, such as customers, government regulators, shareholders, and society, are in general represented by non-governmental organizations who do not have control on the organizational resources (Sharma & Henriques, 2005). Conversely, internal stakeholders include owners, customers, employees, and suppliers who have the direct control on the organization resources. Institutions need to understand the importance of responding to pressure from different stakeholders (Freeman, 1984) to help them to improve their competitive posture. Institutions are also required to manage many conflicting interests among stakeholders. Institutions, which face more pressure from stakeholders, have greater incentives to perform better in order to persuade stakeholders to invest more in their institutions (Al-Tuwaijri, Christensen & Hughes, 2004).

1.2.3. Government support. Government is the administrator, legislator and arbitrator in the administrative bureaucracy who control a state at a given time and in accordance with the system of government by which they are organized (Frank, 1999). Government support in terms of resources, professional expertise development and cooperation between commercializing firms is vital to facilitate the commercialization of higher education institutions (Rasmussen, 2008). These support includes financial and credit assistance, technical and training assistance, extension and advisory services, marketing and market research and infrastructure support (Abdullah, 1999). Synergistic effect can be created by an efficient implementation of continuing government support. Government support affects firms' innovation by stimulating internal R&D and domestic upstream and downstream collaboration. In particular, governmental funding in R&D enables Government to have a good networking with foreign universities and research institutions as well as downstream partners (Kang & Park, 2012).

1.2.4. Faculty support. Faculty is a division within an institute of higher learning, which provides a number of related subject areas for study (Green, Alejandro & Brown, 2009). Generally, faculty is considered the key initiator, supporter and advisor in achieving competitive advantages among HEIs. As acknowledged by previous scholars, faculty plays an important role in the campus long-term success (Betts, 2009).

1.2.5. Regulation compliance. Regulation refers to a set of requirements that the government imposes on private firms and individuals to achieve government's purposes (Darnall, 2009). Regulation compliance means conforming to a rule, such as policy, specification, standard or law. In Malaysia, the Malaysia Qualification Agency (MQA) is responsible for quality assurance of institutions and programmes based on agreed criteria and standards set in Malaysia Qualification Framework (MQF) and establishing a National Reference Centre for recognition and information of qualifications (Fahmi, 2006).

1.3. The relationship between determinants and competitiveness in quality. *1.3.1. Top management support and competitiveness in quality.* Like any other sectors, the PHEIs are under pressure to improve competitiveness. The management needs to cope with fast social, economic and political transitions that place demands on the system and its employees (Bui et al., 2010). The improvement of PHEIs quality depends on the organizations' ability to provide an overall climate and culture change through its various decision-making systems, operating systems, and human resource practices

(Mosadeghard, 2006). A transformation from hierarchical top-down structures to top management commitment is a prerequisite for PHEIs to implement quality systems in educational fields (Mizikaci, 2003). In most of the organizations, top management embraced total quality management (TQM) as a strategy for quality improvement to achieve competitive advantages (Venkatraman, 2007). Top management's commitment and support to the quality management system leads the institutions to continuously improve and achieve competitiveness in quality (Basir, 2012). Therefore, our first hypothesis is formulated as:

H1: Top management support positively influences institution's competitiveness in quality.

1.3.2. Government support and competitiveness in quality. The government recognized that higher education is a major building block for national development which has taken continuous steps to enhance PHEIs competitiveness. This comes in line with the recent growth of demands for PHEIs to match their quantitative developments with qualitative improvements to better meet the challenges of today's globalized knowledge-based world (Kim, 2010). The government's support in quality education services has urged the PHEIs to further upgrade their education systems (Rasmussen, 2008). It laid out innovative schemes to ease or abolish regulations so that PHEIs may secure expanded autonomy in administration. Besides, Government implemented income tax exemptions and other official levies to encourage PHEIs to improve their educational quality and infrastructural development for a pleasant academic environment (Maassen, 2008). With these government support and effort, the PHEIs should be able to improve their quality in both education delivery and service, and to achieve the competitiveness. Hence, our second hypothesis is constructed as follows:

H2: Government support positively influences institution's competitiveness in quality.

1.3.3. Stakeholders' pressure and competitiveness in quality. There is an increasing stakeholders' pressure for demanding better service quality from PHEIs due to the global knowledge economy (Duderstadt, 2008). Nowadays, the PHEIs are facing great competition from educational rivals and are under huge pressure from various institutions and stakeholders to become more responsive to customers' needs. Orientation towards competitiveness in quality among PHEIs has started gaining attention from various internal and external stakeholders within the educational system (Sahney et al., 2010). The educational stakeholders initiated the demand for better service quality from PHEIs. In addition, influential stakeholders of the PHEIs are also actively holding open and constructive discussions with institutions for better understanding on the development of education quality and offer proactive suggestions and support towards achieving the goals for gaining competitive advantage (Abukari & Corner, 2010). In line with the above discussion, our third hypothesis is conjectured:

H3: Stakeholders' pressure positively influences institution's competitiveness in quality.

1.3.4. Faculty support and competitiveness in quality. Faculty is viewed as the important factor in enhancing quality in education and as a path towards institutional competitiveness (Trivellas & Dargenidou, 2009). Faculty management is responsible for attracting student-customers and sustaining recruitment by supporting students' development. Faculty needs to prioritize students' needs and concerns in order to gain a competitive edge in the highly competitive global environment (Brown & Oplatka, 2010). Some faculties have provided scholarship for staffs to pursue their studies in order to create quality manpower that can enhance their competitiveness (Venkatraman, 2007). According to Ashraf and Ibrahim (2009), faculty initiatives as perceived by customers (students) are associated with the quality in education that can enhance the PHEIs competitiveness in quality. Consequently, our forth hypothesis is developed:

H4: Faculty support positively influences institution's competitiveness in quality.

1.3.5. Regulation compliance and competitiveness in quality. PHEIs have been required to comply with all sorts of federal and state regulations for years (Crow, 2009). The Government has set regulations to enhance and protect education quality within PHEIs. For instance, a variety of regulators and professional accreditation schemes or codes of conduct within education industry have been regulated to protect the quality of education. Furthermore, accreditation scheme could influence the performance of PHEIs because additional resources could be used to enhance the quality of education (Carrington, Meek & Wood, 2007). When the quality of education is increased, it leads to positive outcomes on firm's competitiveness (Eiadat, Kelly, Frank Roche & Eyadat, 2008). Thus, our fifth hypothesis is postulated as:

H5: Regulation compliance positively influences institution's competitiveness in quality.

2. Research method

2.1. Samples and data collection. The unit of analysis in this study is the Private Higher Education institutions (PHEIs) in Malaysia. The list of institutions was obtained from Ministry of Higher Education (MOE) web portal. There are a total of 452 PHEIs across Malaysia among which there are 28 universities, 21 college universities and 403 colleges. Based on Hair, Black, Babin & Anderson (2010), the minimum number of respondents or sample size is ten-to-one, means a minimum of 60 sample size is required in this study. However, given the small sampling frame available for this study and the possibility of obtaining ow response rate from mailed survey (Sekearan, 2006), the census method for collecting data was used in this study. Questionnaire packets were mailed to the deans of the institutions. Three weeks were given to return their completed questionnaires to us in a sealed envelope. After following up for several times, we managed to collect a total of 138 questionnaires within a period of 2 months. All these completed surveys were found to be useable, therefore, they were subsequently analyzed.

2.2. Measures and analysis. Our independent variables relating to five determinants (top management support, government support, stakeholder pressure, faculty support, and regulation compliance) were adapted from various sources. Top management support comprises of 3 items adapted from Leowand Zailani (2012); government support consists of 4 items adapted from Lin (2008); stakeholders' pressure contains of 6 items adapted from Shriberg (2002); faculty support comprises of 3 items are self-constructed; and regulation compliance consists of 3 items adapted from El Tayeb (2010). Meanwhile, competitiveness in quality was measured using 5 items procured from Li, Nathan, Nathanb and Rao (2006). Respondents answered back to the items using a 5-point Likert-type scale with "1" = "*strongly disagree*" to "5" = "*strongly agree"*. Our five hypotheses were tested with Partial Least Squares (PLS) software developed by Ringle, Wende & Will (2005). In PLS software, the research model should be assessed in two steps, namely, the measurement model and the structural model (Henseler, Ringle & Sinkovics, 2009). The measurement model examines the relations between the observed variables and latent variables using algorithm approach. On the other hand, the structural model examines the relationship between latent variables using the bootstrapping approach. The measurement model is assessed on its reliability (item reliability and internal consistency) and validity (convergent validity and discriminant validity), and the structural model is assessed based on the significance of the path coefficients and R^2 measures.

3. Results

3.1. Participating institutions' profile. Of 138 PHEIs that participated in the survey, majority of the PHEIs are local based (83.3%), followed by joint ventures between local and foreign (8.7%), and fully foreign owned (8.0%). In terms of types of PHEIs, 55.8% are college level, 30.4% are university level, and 13.8% are college university level. Besides, the descriptive statistics of the participating institutions was also compiled. The average years of operation, number of employees, and number of students for the sample are 17.5 years (SD = 11.0), 562 people (SD = 825), and 4408 people (SD = 75596), respectively.

3.2. Measurement model results. The factor loadings, composite reliability (CR), and average variance extracted (AVE) were used to assess convergence validity. Convergent validity examines if a particular item measures a latent variable which it is supposed to measure (Urbach & Ahlemann, 2010). While running PLS Algorithm, all item loadings were above the threshold value of 0.70 proposed by Chin's (1998), except for ALUP (item of stakeholder pressure) with a loading of 0.675. Therefore, the loading for this particular item is deleted. We rerun the PLS Algorithm again after deleted item ALUP. As presented in Table 1, all items loadings were above 0.70. The AVE measures the variance captured by the indicators relative to measurement error, and it should be greater than 0.50, means on average, the construct explains more than half of the variance of its indicators. In this study, the AVE ranged from 0.560 and 0.728 which meet the minimum cut off values of 0.50. Regarding CR, Fornell and Larcker (1981) specify 0.70 as the minimum value for internal consistency for the latent variables. In this study, the composite reliability values ranged from 0.838 to 0.889. Therefore, it can be concluded that the measurement model is reliable and demonstrates adequate convergent validity.

Table 1. Measurement model

Construct	Item	Loading	AVE	CR
Stakeholder pressure	ACTP	0.806	0.634	0.838
	DONP	0.735		
	GOVP	0.845		
Faculty support	FA1	0.824	0.688	0.869
	FA2	0.816		
	FA3	0.848		
Government support	GOV1	0.746	0.564	0.838
	GOV2	0.706		
	GOV3	0.775		
	GOV4	0.775		

Table 1 (cont.). Measurement model

Construct	Item	Loading	AVE	CR
Regulations compliance	RC1	0.813	0.614	0.864
	RC2	0.713		
	RC3	0.789		
	RC4	0.813		
Top management support	TM1	0.807	0.728	0.889
	TM2	0.887		
	TM3	0.863		
Competitiveness quality	Q1	0.777	0.560	0.864
	Q2	0.728		
	Q3	0.731		
	Q4	0.758		
	Q5	0.745		

The measurement model was then tested for discriminant validity. Discriminant validity is the extent to which a construct is truly distinct from other constructs by empirical standards (Hair, Hult, Ringle and Sarstedt, 2013). Two measures of discriminant validity have been proposed by Hair et al. (2013). One method for assessing discriminant validity is by examining the cross loadings of the indicators. The second method which is more conservative compares the square root of the AVE values with the latent variable correlations. As presented in Table 2, all items indicated sufficient convergent validity and discriminant validity as the loading of each item is greater than all of its cross-loadings (Hair et al., 2013). Table 3 presents the square root of the average variance extracted (AVE) of the latent variable. The result shows that the square root of each construct's AVE is greater than its highest correlation with any other constructs. In total, the measurement model demonstrates adequate discriminant validity.

Table 2. Cross loadings

	Faculty support	Government support	Regulations compliance	Stakeholder pressure	Top management support	Competitiveness quality
FA1	**0.824**	0.433	0.317	0.404	0.276	0.483
FA2	**0.816**	0.422	0.446	0.302	0.323	0.464
FA3	**0.848**	0.379	0.446	0.428	0.446	0.540
GOV1	0.258	**0.746**	0.331	0.322	0.365	0.474
GOV2	0.321	**0.706**	0.348	0.355	0.412	0.505
GOV3	0.447	**0.775**	0.292	0.413	0.412	0.512
GOV4	0.444	**0.775**	0.389	0.409	0.426	0.542
RC1	0.389	0.362	**0.813**	0.323	0.396	0.441
RC2	0.338	0.289	**0.713**	0.330	0.314	0.435
RC3	0.408	0.327	**0.789**	0.280	0.346	0.429
RC4	0.388	0.435	**0.813**	0.437	0.375	0.478
ACTP	0.428	0.409	0.386	**0.806**	0.475	0.484
DONP	0.268	0.350	0.350	**0.735**	0.291	0.356
GOVP	0.385	0.432	0.391	**0.845**	0.299	0.511
TM1	0.225	0.465	0.364	0.299	**0.807**	0.531
TM2	0.404	0.458	0.429	0.389	**0.887**	0.596
TM3	0.447	0.458	0.375	0.394	**0.863**	0.573
Q1	0.546	0.599	0.383	0.489	0.551	**0.777**
Q2	0.443	0.442	0.426	0.479	0.416	**0.727**
Q3	0.450	0.475	0.491	0.367	0.498	**0.732**
Q4	0.325	0.498	0.446	0.376	0.487	**0.759**
Q5	0.459	0.508	0.398	0.420	0.525	**0.745**

Note: FA denotes the items for faculty support; GOV denotes the items for government support; RC denotes the items for regulation compliance; ACTP, DONP, and GOVP denote the items for stakeholder pressure; TM denotes the items for top management support; and Q denotes the items for competitiveness in quality.

Table 3. Discriminant validity

	Faculty support	Government support	Regulations compliance	Stakeholder pressure	Top management support	Competitiveness quality
Faculty support	**0.830**					
Government support	0.494	**0.751**				
Regulations compliance	0.486	0.454	**0.783**			
Stakeholder pressure	0.461	0.502	0.472	**0.796**		
Top management support	0.424	0.539	0.457	0.449	**0.853**	
Competitiveness quality	0.600	0.678	0.570	0.575	0.665	**0.748**

Note: diagonals value represents the square root of AVE while the off-diagonals value represents the correlations.

Figure 2 illustrates the results of the direct effect hypothesized in this study. The R^2 value of competitiveness in quality is 0.672 suggesting that 67.2% of the variance in competitiveness in quality can be explained by faculty support, top management support, stakeholders' pressure, government support, and regulation compliance.

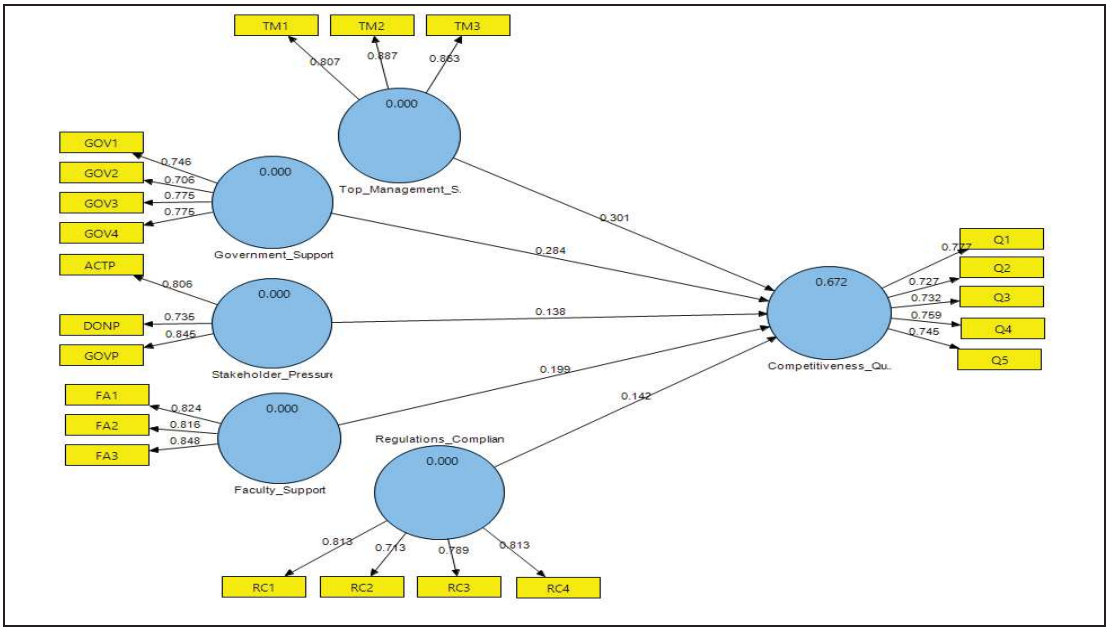


Fig. 2. Measurement model

3.3. Structural model results. In the next step, we proceeded with the path analysis to test our hypotheses. Bootstrapping procedure with 500 resamples to test the significance of the regression coefficient was run. The results show that top management support (β = 0.301, p < 0.01), government support (β = 0.284, p < 0.01), faculty support (β = 0.199, p < 0.01), regulation compliance (β = 0.142, p < 0.05), and stakeholders' pressure (β = 0.138, p < 0.05) were positively related to competitiveness in quality. Therefore, all five hypotheses, H1, H2, H3, H4, and H5 are supported.

Table 4. Hypothesis testing

Hypothesis	Relationship	Beta	Standard error	*t*-value	Decision
H1	Top_Management_Support -> Competitiveness_Quality	0.301	0.093	3.240**	Supported
H2	Government_Support ->Competitiveness_Quality	0.284	0.092	3.095**	Supported
H3	Stakeholder_Pressure ->Competitiveness_Quality	0.138	0.073	1.894*	Supported
H4	Faculty_Support ->Competitiveness_Quality	0.199	0.077	2.588**	Supported
H5	Regulations_Compliance ->Competitiveness_Quality	0.142	0.074	1.919*	Supported

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

On top of the path analysis, the predictive capability for the model was examined via the Q^2 statistic. Q^2 value more than zero means that the model has predictive relevance, whereas Q^2 value less than zero means that the model lacks predictive relevance (Fornell & Cha, 1994). There are two types of Q^2 statistics estimates, which are cross-validated communality (H^2_j) and cross-validated redundancy (F^2_j). Both H^2_j and F^2_j values should be greater than the threshold of zero (Fornell & Cha, 1994). By performing blind folding, our results revealed that H^2_j = 0.563 and F^2_j = 0.374. Therefore, it can be concluded that competitiveness in quality was well-explained by faculty support, top management support, stakeholders' pressure, government support, and regulation compliance.

4. Discussions

The objective of this study was to examine the influence of five specific determinants (top management support, government support, stakeholders' pressure, faculty support, and regulation compliance) on competitiveness in quality. In general, the statistical results provide support for all our hypothesized relationships. Top management support in quality improvement activities could increase the institution's overall total quality management system and program quality. Consequently, the improvement of the program quality and service delivery increases the institution's competitiveness in quality. Our finding concurs with previous studies conducted by Fotopoulos and Psomas (2009), Islam and Ahmed

(2005), and Talib, Rahman and Qureshi (2010). Government support has beenfound to have a strong influence on the competitiveness in quality. Government support in terms of resources, developing professional expertise, and facilitating cooperation between commercializing firms is vital to facilitate the commercialization of institutions to provide quality education services. Our finding is consistent with the findings obtained by Maassen (2008). Stakeholders' pressure has a similar influence on the competitiveness in quality. Stakeholders exert pressure on the top management of the institution to engage in competitive strategies that can lead to customers' satisfaction, high organizational performance, and increased competitiveness among rival businesses. Our result is consistent with the results from Murasiranwa, Nield and Ball (2010), and Zeshen (2010). Besides, faculty support has shown a significant and positive influence on the institution's competitiveness. Active faculty participation and effort is viewed as a critical factor in the development of high quality academic program. Institution that is reputable with its high quality program will be able to remain competitive in the market. Our finding is congruent with the findings by Leem and Lim (2007), and Jung (2011). Regulation compliance has been found to have a significant and positive influence on the institution's competitiveness in quality. Institution that complies with the regulations, in particular the accreditation standard for the academic program could continually innovate and deliver differentiated offerings, search for new markets, and improve its operational efficiencies. This, in turn, will increase its competitiveness among its rivalry. Our results are in convergence with the previous study by Sharma and Loh (2009).

Several limitations have been identified in the study. Firstly, the factors that predict the competitiveness in quality were limited in scope. Particularly, only five factors were examined which suggests future researchers may include other factors, such as service quality (Hasan et al., 2008), knowledge management processes (Ramachandran et al., 2009), campus and research facilities (Ashraf & Ibrahim, 2009). Secondly, this research is limited to PHEIs in Malaysia. A further study should be carried out to include public HEIs so that a comparison between both institutions can be made. This would also improve the generalizability of the findings in higher education sectors.

Conclusions

The study was mainly aimed to examine the relationship between the determinants and competitiveness in quality within the context of the PHEIs in Malaysia. This study revealed that top management support, government support, stake-holders' pressure, faculty support and regulation compliance significantly influence the institution's competitiveness in quality. Thus, it can be concluded that these five determinants are vital to influence the competitiveness in quality of PHEIs in Malaysia.

References

1. Abdullah, M.A. (1999). The accessibility of the government-sponsored support programmes for small and medium-sized enterprises in Penang, *Pergamon*, 16 (2), pp. 83-92.
2. Abukari, A. and Corner, T. (2010). Delivering higher education to meet local needs in a developing context: The quality dilemmas, *Quality Assurance in Education*, 18 (3), pp. 191-208.
3. Al-Tuwaijri, S.A., Christensen, T.E. and Hughes, K.E. (2004). The relations among environmental disclosure, environmental performance, and economic performance: A simultaneous equations approach, *Accounting, Organizations and Society*, 29 (5-6), pp. 447-471.
4. Angell, R.J., Heffernan, T.W. and Megicks, P. (2008). Service quality in postgraduate education, *Quality Assurance in Education*, 16 (3), pp. 236-254.
5. Arokiasamy, L, Ismail, M., Ahmad, A. & Othman, J. (2009). Background of Malaysian private institutions of higher learning and Challenges faced by academics, *The Journal of International Social Research*, 2 (8), pp. 60-67.
6. Ashraf, M.A. and Ibrahim, Y. (2009). Quality education management at private universities in Bangladesh: An exploratory study, *Jurnal Pendidikdan Pendidikan*, 24 (1), pp. 17-32.
7. Balan, J. (1990). Private Universities within the Argentine higher educational system, trends and prospects, *Higher Education Policy*, 3 (2), pp. 13-17.
8. Basir, S.A. (2012). Complying quality management system ISO 9000 requirements within higher education institutions (HEIs) in Muslim countries, *World Journal of Islamic History and Civilization*, 2 (1), pp. 30-43.
9. Betts, K. (2009). Online Human Touch (OHT) Training & Support: A Conceptual Framework to Increase Faculty Engagement, Connectivity, and Retention in Online Education, Part 2, *MERLOT Journal of Online Learning and Teaching*, 5 (1), pp. 29-48.
10. Brown, J.H. and Oplatka, I. (2010). Market orientation in universities: A comparative study of two national highereducation systems, *International Journal of Educational Management*, 24 (3), pp. 204-220.
11. Carrington, R., Meek, V.L. and Wood, F.Q. (2007). The role of further government intervention in Australian international education, *Higher Education*, 53 (2), pp. 561-577.

12. Chin, W.W. (1998) *The Partial Least Squares Approach for Structural Equation Modeling*. United States: Lawrence Erlbaum.
13. Crow, S. (2009). Musings on the future of accreditation. In O'Brien, P.M. (Ed.), *Accreditation: Assuring and Enhancing Quality. New Directions for Higher Education*, No. 145, San Francisco: Jossey-Bass, pp. 47-58.
14. Darnall, N. (2009). Regulatory stringency, green production offsets and organizations' financial performance. *Public Administration Review*, 69 (3), pp. 418-434.
15. Duderstadt, A. (2008). Changing university missions and profiling, *International Journal of Educational Management*, 25 (6), pp. 204-220.
16. Eiadat, Y., Kelly, A., Frank Roche, F. and Eyadat, H. (2008). Green and competitive: An empirical test of the mediating role of environmental innovation strategy, *Journal of World Business*, 43 (2), pp. 131-145.
17. ElTayeb, T.K., Zailani, S. and Jayaraman, K. (2010). The examination on the drivers for green purchasing adoption among EMS 14001 certified companies in Malaysia, *Journal of Manufacturing Technology Management*, 21 (2), pp. 206-225.
18. Fahmi, Z.M. (2006). *Malaysia Quality Assurance in Higher Education.*Lembaga Akreditasi Negara-ZITA/06, 1-6. Retrieved on 30 September, 2013 from: http://siteresources.worldbank.org/EDUCATION/Resources/malaysia-qa-system.pdf.
19. Fornell, C. and Cha, J. (1994). Partial least squares. In R.P. Bagozzi (Ed.), *Advanced methods of marketing research*. Cambridge, England: Blackwell, pp. 52-78.
20. Fotopoulos, C.B. and Psomas, E.L. (2009). The impact of "soft" and "hard" TQM Elements on quality management results, *International Journal of Quality and Reliability Management*, 26 (2), pp. 150-163.
21. Frank, B. (1999). *Government*, The Blackwell dictionary of political science: A user's guide to its terms. Wiley-Blackwell.
22. Freeman, R.E. (1984). *Strategic Management: A Stakeholder Approach.* Boston: Pitman.
23. Green, T., Alejandro, J. and Brown, A.H. (2009). The retention of experienced faculty in online distance education programs: understanding factors that impact their involvement, *The International Review of Research in Open and Distance Learning*, 10 (3), pp. 1-8.
24. Hadikoemoro, S. (2002). *A Comparison of Public and Private University Students' Expectations and Perceptions of Service Quality in Jakarta, Indonesia.* Unpublished D.B.A., Nova Southeastern University, United States: Florida.
25. Hair, J.F., Black, W.C., Babin, B.J. & Anderson, R.E. (2010). *Multivariate Data Analysis (7th Ed.).* Upper Saddle River, New Jersey: Prentice Hall.
26. Hair, J.F., Hult, G.T.M. Ringle, C.M. and Sarstedt, M. (2013). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM).* United Stated: SAGE Publication, Inc.
27. Hassan, A., Asimiran, S., Rahman, F.A. and Kamarudin, N. (2008). Analyzing the application of national philosophy of education (NPE) throughout learning process in higher education institution (HEI): The students' perspectives, *European Journal of Social Sciences*, 7 (2), pp. 148-157.
28. Henseler, J., Ringle, C.M., and Sinkovics, R.R. (2009). The use of Partial Least Squares Path Modeling in international marketing. In R. R. Sinkovics and P. N. Ghauri (Eds.), *Advances in International Marketing*, 20, Bingley: Emerald, pp. 277-320.
29. Islam, N. and Ahmed, E. (2005). A measurement of customer service quality of banks in Dhaka City of Bangladesh, *South Asian Journal of Management*, 12 (1), pp. 37-57.
30. Jung, I. (2011). The dimensions of e-learning quality: From the learner's perspective, *Educational Technology Research and Development*, 59 (4), pp. 445-464.
31. Kang, K.N. and Park, H. (2012). Influence of government R&D support and inter-firm collaborations on innovation in Korean biotechnology SMEs, *Technovation*, 32 (1), pp. 68-78.
32. Kim, Y.G. (2010). A shift of higher educational paradigm with scientific development from isolation to integrative/holistic global education in the twenty-first century, *Education Research*, 1 (4), pp. 75-87.
33. Leem, J. and Lim, B. (2007). The current status of e-learning and strategies to enhance educational competitiveness in Korean higher education, *International Review of Research in Open and Distance Learning*, 8 (1). Retrieved 30, September, 2013 from: http://www.irrodl.org/index.php/irrodl/article/viewArticle/380/763.
34. Leow, K.S. and Zailani, S. (2012). Determinants of the green quality practices towards sustainable quality management, *International Journal of Productivity and Quality Management*, 9 (2), pp. 194-216.
35. Li, S., Nathan, B.R., Nathanb, R. and Rao, S.S. (2006). The impact of supply chain management practices on competitive advantage and organizational performance, *Omega*, 34 (2), pp. 107-124.
36. Lin, C.Y. (2008). An empirical study on logistics service providers' intention to adopt green innovations, *Journal of Technology Management & Innovation*, 3 (1), pp. 17-26.
37. Maassen, P. (2008). The Modernisation of European Higher Education. National Policy Dynamics", in A. Amaral, I. Bleiklie and C. Musselin (eds.), *From Governance to Identity, Festschrift for Mary Henkel*, London: Springer, Dordrecht, pp. 95-112.
38. Mizikaci, F. (2003). Quality systems and accreditation in higher education: An overview of Turkish higher education, *Quality in Higher Education*, 9 (1), pp. 95-106.
39. Mooney, A. and Mahoney, M. and Wixom, B. (2008). Achieving top management support in strategic technology initiatives, *Current Issues in Technology Management*, 12 (2), pp. 221-240.

40. Moore, M.E., Konrad, A.M. and Hunt, J. (2010). Creating a vision boosts the impact of top management support on the employment of managers with disabilities. The case of sport organizations in the USA, *Equality, Diversity and Inclusion: An International Journal*, 29 (6), pp. 609-626.
41. Mosadeghard, A.M. (2006). The impact of organizational culture on the successful implementation of total quality management, *The TQM Magazine*, 18 (6), pp. 606-630.
42. Murasiranwa, E.T., Nield**,** K., and Ball**,** S. (2010). Hotel service quality and business performance in five hotels belonging to a UK Hotel Chain (July 28, 2010). International CHRIE Conference-Refereed Track.Paper 11. Retrived on 30 September, 2013 from: http://scholarworks.umass.edu/refereed/CHRIE_2010/Wednesday/11.
43. Patrinos, H.A. (1990). The privatisation of higher education in Columbia, effects on quality and equity, *Higher Education*, 20 (2), pp. 161-173.
44. Ramachandran, S.D., Siong, C.C. and Ismail, H. (2009). The practice of knowledge management processes: A comparative study of public and private higher education institutions in Malaysia, *VINE*, 39 (3), pp. 203-222.
45. Rasmussen, E. (2008). Government instruments to support the commercialization of university research: Lessons from Canada, *Technovation*, 28 (August), pp. 506-517.
46. Ringle C.M., Wende, S., Will, A. (2005). SmartPLS 2.0: www.smartpls.de.
47. Sahney, S., Banwet, D.K. and Karunes, S. (2010). Quality framework in education through application of interpretive structural modelling, *The TQM Journal*, 22 (1), pp. 56-71.
48. Sekaran, U. (2006). *Research Methods for Business: A Skill Building Approach* (4th Ed.). New York: John Wiley & Sons Inc.
49. Sharma, S. and Henriques, I. (2005).Stakeholder influences on sustainability practices in the Canadian forest products industry, *Strategic Management Journal*, 26 (2), pp. 159-180.
50. Sharma, A. and Loh, P. (2009). Emerging trends in sourcing of business services, *Business Process Management Journal*, 15 (2), pp. 149-165.
51. Shriberg, M. (2002). Institutional assessment tools for sustainability in higher education: Strengths, weaknesses, and implications for practice and theory, *Higher Education Policy*, 15 (2), pp. 153-167.
52. Talib, F., Rahman, Z. and Qureshi, M.N. (2010). The relationship between total quality management and quality performance in the service industry: A theoretical model, *International Journal of Business, Management and Social Sciences*, 1 (1), pp. 113-128.
53. Trivellas, P. and Dargenidou, D. (2009). Leadership and service quality in Higher Education: The case of the Technological Educational Institute of Larissa, *International Journal of Quality and Service Sciences*, 1 (3), pp. 294-310.
54. Urbach, N. and Ahlemann, F. (2010). Structural equation modeling in information systems research using Partial Least Squares, *Journal of Information Technology Theory and Application*, 11 (2), pp. 5-40.
55. Venkatraman, S. (2007). A framework for implementing TQM in higher education programs, *Quality Assurance in Education*, 15 (1), pp. 92-112.
56. Zeshen, A. (2010). Assessing service quality in business schools: Implications for improvement, *3rd International Conference on Assessing Quality in Higher Education*, 6-8 December, 2010. Lahore, Pakistan.