

Prioritised challenges and critical success factors for delivering quality education in Malaysian private higher education institutions

Critical success factors

465

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Abstract

Purpose – The purpose of this paper is to develop a hierarchical model to rank the challenges faced by the private Malaysian higher education institutions (HEIs) in the provision of quality education and subsequently their corresponding critical success factors (CSFs) to address those challenges.

Design/methodology/approach – A sequential mix method was adopted in this study. Semi-structured interviews with 29 participants were initially conducted to identify the challenges and CSFs. This was followed by a questionnaire survey involving 158 respondents to prioritise the identified findings. Thematic analysis was conducted in the qualitative stage, uncovering the challenges and their corresponding CSFs. Data for both stages were accumulated from internal and external stakeholders of Malaysian private HEIs. Finally, the four stages of the analytic hierarchy process (AHP) were applied to rank the challenges and CSFs.

Findings – The qualitative stage identified eight challenges, i.e. “academics”, “facilities”, “students”, “programmes and curriculum”, “competition”, “accreditation”, “finance” and “research” together with their corresponding CSFs. The AHP enables the ranking of these challenges. “Finance” has been found to be the most crucial challenge and “high competency in managing the institution’s finance” as the most important CSF to address this challenge.

Research limitations/implications – As the study restricted its focus on Malaysian private HEIs, the results may not be generalised for public HEIs and foreign private HEIs operating in Malaysia.

Originality/value – The hierarchical model developed in this study is deemed important for implementation to resolve the prioritised challenges. It spells out the specific areas in which the resources of Malaysian private HEIs need to be prudently disbursed and properly managed.

Keywords Analytic hierarchy process, Critical success factors, Challenges, Quality education, Malaysian private higher education institutions

Paper type Research paper



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1. Introduction

The literature on the privatisation of higher education institutions (HEIs) has shown that private HEIs have become the fastest-growing sector of higher education in most parts of the world (Li, 2014; Halai, 2013). This expansion is attributed to two key factors:

- (1) First, to the growth of mass higher education resulting in the inability of public HEIs to absorb the increasing demand for tertiary education (Mukherjee and Mukherjee, 2013). This led to the development of private HEIs as prominent education providers in the higher education market, which was previously dominated by public HEIs.
- (2) Second, in recent years, government policies have been encouraging the private sector to provide higher education, seeing such private HEIs as long-term change agents (Shin and Harman, 2009).

It is within this context that the Malaysian Government launched three educational Acts in 1996, namely, the National Council on Higher Education Act 1996, the Private Higher Education Act 1996 and the National Accreditation Board 1996 Act. The objective was to scale up the provision of higher education and to provide support for private education. These are watershed developments in the history of Malaysian higher education and to date, there are 70 private universities (including foreign branch campuses), 34 university colleges and 410 colleges that play a direct role in providing tertiary education (Malaysia Education Blueprint, 2015/2025).

Besides, private HEIs are also recognised as a significant contributor to the country's GDP and economic growth (Marginson, 2018; Arokiasamy *et al.*, 2011; Becket and Brookes, 2008). It is estimated that Malaysian private HEIs alone contributed USD 0.32 billion annually to the national economy. In the Tenth Malaysian Plan, private HEIs were also anticipated to increase their GDP contribution by 1.5 to 2 per cent in 2015, particularly via international students.

The development of private HEIs is particularly beneficial for the Ministry of Higher Education (MOHE) as it strives to transform Malaysia into a centre of educational excellence in the Asian region (Hou *et al.*, 2018; Arokiasamy *et al.*, 2011). Jantan *et al.* (2006) have suggested that the development of private HEIs and maintaining high educational standards are two strategic necessities in achieving this national aspiration. Yet, issues concerning quality education such as negative reports on the private HEIs have influenced public perceptions of the institutions' capabilities. For instance, many have lodged complaints about unaccredited or unapproved programmes that breach the requirements of the regulatory agency, i.e. Malaysian qualification agency (MQA) (Two private institutions in state fined for discrepancies, 2012), inadequate infrastructure, neglect of students' welfare (9 Private Institutions, 2013) and substandard management practices including the registration of unqualified students and problems caused by foreign students (9 Private Institutions, 2013). Unfortunately, most of these malpractices reportedly occurred in Malaysian private HEIs.

Fundamentally, as governed by the private Higher Educational Institutions Act 1996 and the Companies Act 1965, Malaysian private HEIs are funded by private entities aiming for profit. While the owners and administrators of these HEIs are obligated to their shareholders, they are also required to achieve specific quality standards prescribed by the regulatory agencies that incur substantial monetary and non-monetary commitments (Halai, 2013; Mpezamihigo, 2012). Achieving balance between generating profit and providing quality education presents serious challenges for the Malaysian private HEIs. In this light, Shin and Harman (2009) proposed that these challenges be identified so that urgent

measures can be taken to overcome them (Jaladin *et al.*, 2010). Therefore, the research objectives of the present study are as follows:

- Identify the challenges faced in the course of providing quality education and subsequently, determine the critical success factors (CSFs) that serve as practical solutions, with particular focus on Malaysian private HEIs.
- Rank the identified challenges and their corresponding CSFs.

The paper proceeds as follows: Section 2 discusses the concept of quality education, the challenges faced by the private HEIs in the provision of quality education and their corresponding CSFs. Section 3 explains the methods used in obtaining respondent responses. These responses will be further discussed in Section 4, followed by the discussion in Section 5. Conclusion, theoretical and practical implications and recommendations for future research are discussed in Section 6.

2. Literature review

2.1 Quality education

Quality is commonly defined as the ability of a product or service to meet customers' needs. Some interpret quality as "customer satisfaction" (Bornman, 2004), "quality as excellence" and "fitness for purposes" when quality is defined in terms of achievement or outcomes or as "continuous improvement" and "value for money" when quality is related to costs (Harvey and Green, 1993). It can be a confusing concept, partly because people view it according to different criteria based on individual roles in the production-marketing value chain.

The educational sector faces the same problem when defining quality:

- the concept of quality is more complex in HEIs as opposed to the industry where the end products are clearly defined;
- there exists a wide variety of interpretations of quality that are dependent upon the views of different stakeholders (Harvey and Green, 1993); and
- quality is a multi-dimensional concept (Schindler *et al.*, 2015).

While there are extensive published materials and journal articles on the subject of quality originating from the early 1980s, still there has not been any consensus on the concept of quality in HEIs (Doherty, 2008).

Here, it is necessary to clarify the specific meaning of education. Sahney *et al.* (2008) and Cheng and Tam (1997) viewed education as a system that consists of interdependent components working together to achieve specific objectives. The system comprises three important elements – input, processes and output (Figure 1). Inputs are classified as human, physical and financial resources, which endure certain processes such as teaching, learning, research, administration and knowledge transformation. Out of all these processes, it has been said that the quality of teaching and learning is the central process for any education system (Sahney *et al.*, 2004). The outputs – tangible or intangible include examination results, employment, earnings and satisfaction (Becket and Brookes, 2008).

In this study, the researchers presume that quality of HEIs is the quality of education provided by the HEIs. The term for quality education in HEIs can also be found in the works of Abdullah *et al.* (2015), Sahney *et al.* (2008) and Cheng and Tam (1997). Essentially, the term embraces the comprehensive functions and activities of HEIs including scientific research and social education. The aim of providing quality education is to provide information, to inspire people, produce human capital equipped with knowledge and skills,

and strong moral values for the benefit of individuals and society at large. Thus, the term quality education in HEIs is used throughout this study, referring to the quality of HEIs.

2.2 Challenges faced by the higher education institutions in the delivery of quality education
HEIs around the world have been striving to uplift educational standards through quality education (Li, 2014; Haider, 2008). The rapid growth, both in terms of enrolment and number of institutions has generated new challenges of maintaining quality of higher education (Singh, 2017). This is because quality education serves as a key success factor in growing competitive, sustainable HEIs in the current global era (Aly et al., 2014). It is within this overall aim that this paper identifies the challenges faced by private HEIs, particularly, in an attempt to guarantee the success of their programmes (Terry and Stanley, 2002). These challenges also need to be critically analysed so that strategies for improvement can be accurately identified (Cheng and Tam, 1997). In essence, the approach of past researchers has been to explore the challenges faced by the private HEIs, focussing on equipping HEI practitioners with better understanding of the types of challenges and types of solutions best suited to address them.

Some researchers highlighted accreditation as the challenge in delivering quality education (Baumgardt and Lekhetho, 2013; Puteh et al., 2009). Baumgardt and Lekhetho (2013), for instance, identified the challenges of quality assurance in South African private HEIs, indicating that proper accreditation mechanisms are essential to ensure the delivery of quality education. Puteh et al. (2009), on the other hand, highlighted the stringent processes encountered by engineering faculties in Malaysia in meeting the requirements of national accreditation (MQA) and engineering professional bodies (Engineering Accreditation Council).

A comprehensive discussion on the challenges faced by private HEIs in the provision of quality education is available in a study conducted by Anis et al. (2018). The authors identified the challenges by using the six stages of thematic analysis introduced by Braun and Clarke (2006) and interpreted the challenges in greater detail. The challenges are academics, accreditation, competition, facilities, finance, programmes and curriculum, students and research.

As a member of the top management team in a private HEI, Mpezamihigo (2012) cited among others, governance of the HEIs, heavy academic workloads, research activities, programmes and curriculum, as well as facilities, specifically ICT infrastructure as some of the challenges. He also identified university financing as one of the greatest requirements for the success of private HEIs, followed by governance and how the institution is managed.

Prior research studies have looked at quality as one of the identified challenges (Haider, 2008; Altbach and Levy, 2005; Oketch, 2003). Oketch (2003), for example, described the

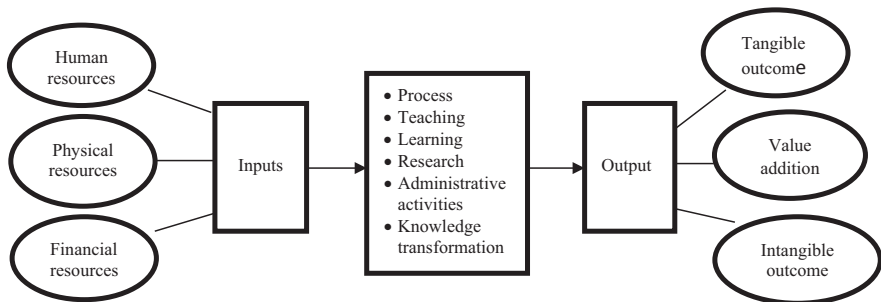


Figure 1.
Schematic
representation of
education by Sahney
et al. (2004)

challenges posed by the quality of students as it was found that most students in private HEIs in Kenya possessed lesser academic qualifications compared to those who entered public HEIs. [Altbach and Levy \(2005\)](#) and [Haider \(2008\)](#), on the other hand, are concerned about the quality of academics in their discussion of quality as one of the identified challenges.

2.3 Critical success factors to address the challenges in delivering quality education

Besides identifying the challenges, HEIs need to address these challenges as one of the strategies to enhance its quality education ([Cheng and Tam, 1997](#)). In the short run, resolving the challenges may lead to increased profit and mitigate financial risks whilst in the long run, it would impact the HEIs' sustainability and increased opportunities to win a larger market share.

The actionable solutions are named as CSFs, a term adopted from the work of [Islam \(2010\)](#), who defined CSFs as "factors that must be implemented to successfully address the challenges". Prior studies have shown the need for investigating practical solutions to resolve the challenges ([Li, 2014](#); [Jaladin *et al.*, 2010](#); [Sarker *et al.*, 2010](#); [Altbach and Levy, 2005](#)). Nevertheless, not many researchers pursued this line of research. A number of researchers such as [Li \(2014\)](#) and [Al-Atiqi and Alharbi \(2009\)](#) have discussed the approaches to resolve the challenges of quality education in greater detail.

[Li \(2014\)](#), for instance, generated the solutions for quality issues in China's private HEIs by relying on existing literature, historical documents, findings of previous publications and the author's own observations. Essentially, the author recommended the "quality assurance triangle" framework comprising three important players – government, market and institutions – to resolve the identified quality issues, which are academics, administrative and relationship quality. Approaches to address the challenges of quality education can also be seen in the work of [Al-Atiqi and Alharbi \(2009\)](#), who recommended the private HEIs in Kuwait to obtain international licensing and accreditation as the best approach to secure a high standard of quality education.

3. Research methodology

A mixed methods approach was applied as a procedure for collecting, analysing and mixing both the qualitative and quantitative data to better address the research problem ([Creswell, 2014](#)). In particular, the sequential exploratory strategy (SES) with a qualitative-quantitative sequence was adopted to achieve the research objectives. In the SES, the qualitative and quantitative approaches were applied sequentially with the qualitative phase being the first to be conducted, analysed and interpreted before moving on to quantitative data collection, analysis and interpretation ([Creswell and Plano Clark, 2011](#)).

In support of the SES, the present study used the qualitative approach specifically to identify the challenges faced by the Malaysian private HEIs in the provision of quality education and their corresponding CSFs. The qualitative approach was used because of its suitability in investigating and exploring the understudied phenomena ([Creswell, 2014](#)) as few literatures have reported on the challenges faced by private HEIs in providing quality education and their corresponding CSFs, particularly in Malaysia. The ranking and priority list of the challenges and their corresponding CSFs, which serve as the second objective of the present study was best achieved by applying a quantitative approach. Even though the findings of the initial qualitative stage presented detailed information about the challenges and approaches to resolve such challenges, yet it remained inadequate without quantitative analysis. Here, the analytic hierarchy process (AHP) methodology was applied to generate the ranking for the challenges and the corresponding CSFs from a larger sample size.

Greene *et al.* (1989) regarded the SES approach as applied in the present study as complementary, as results from one stage, i.e. the qualitative stage, was able to be enhanced, elaborated and clarified in the other stage, i.e. quantitative stage. Figure 2 summarises the research design of the present study.

3.1 Sampling technique

Purposive sampling technique was used for both the qualitative and AHP stage of the study. Purposive sampling technique is suited to qualitative research as the technique enables researchers to obtain information from specific target groups that can provide the desired information, either because they are privy to such information or conform to some criteria set by the researchers (Sekaran and Bougie, 2013). For the AHP stage, using purposive sampling is even more crucial as AHP requires opinions of experts who possess the needed information (Macharia *et al.*, 2015). Purposive sampling technique enables researchers to target and select those who are highly involved in the delivery of quality education in Malaysian private HEIs and possess sufficient insights on the challenges encountered, how to resolve them, as well as in prioritising these challenges and their corresponding CSFs.

3.2 Respondents and data collection

The key informants of the qualitative and AHP stages comprise the stakeholders of Malaysian private HEIs. In the qualitative stage, the stakeholders were deemed to have the best insights on the quality issues of Malaysian private HEIs. Acquiring opinions from different groups of stakeholders also enables exploration of multiple perspectives as well (Macharia *et al.*, 2015; Easterby-Smith *et al.*, 2012). Yen (2005) also supports the view that at the AHP stage, it is advisable to compile opinions from various groups of stakeholders. The varied stakeholders in HEIs include students, employers, teaching and non-teaching staff, the government and its funding agencies, accreditors, validators, auditors, assessors and the community (Sahin, 2009). Nevertheless, this study used the classification established by Fion (2008) and justifications provided by Sahin (2009) in selecting the stakeholders, i.e. the private HEIs, students, parents, government regulatory agencies and employers. Justifications of their selection are as follows:

- *The private HEIs:* they are the responsible parties in the education system process and highly involved in all quality practices implemented in Malaysian private HEIs. Therefore, the data of this study were collected from the quality directors of the

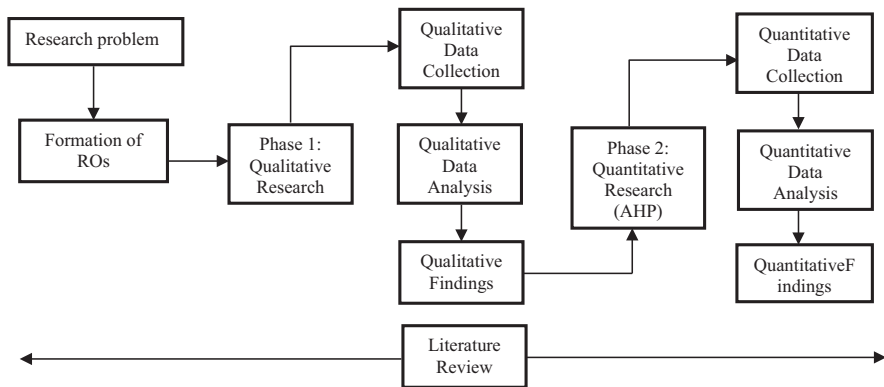


Figure 2.
A summary for the research design

institutions, administrators who hold top and middle managerial positions and various academics including professors, PhD holders and senior lecturers.

- *Students*: they are selected as they have the most interaction with the education system and as direct recipients of the educational services. Students' views were obtained from those who were pursuing PhD, masters and bachelor programmes. The majority were in the midst or final stage of their studies.
- *Parents*: they pay full or part of their children's education expenses in Malaysian private HEIs. Their feedback is valuable as they have invested large amounts of money in their children's education, and thus, expect their children to be employed by the public or private organisations.
- *Government regulatory agencies*: they are accountable for designing and implementing policies besides being responsible for inspection of and safeguarding quality education in Malaysian tertiary education. Data were obtained from the authorised personnel of the relevant departments from the Malaysian tertiary education regulatory agencies who have substantial experience in handling quality issues in Malaysian private HEIs.
- *Employers*: they are selected as they are the receivers of Malaysian private HEI's products. Responses were acquired from the personnel of the private or public organisation who were directly involved in recruiting graduates particularly from the Malaysian private HEIs.

The representatives of the Malaysian private HEIs, students and parents were obtained from the Malaysian private HEIs listed in Tiers 4 and 5 of SETARA 2011 (rating system for Malaysian HEIs, see [Appendix 2](#)). SETARA 2011 was the latest result available at the time of data collection for the present study. In total, 54 universities and university colleges participated in SETARA 2011. Two institutions were excluded because of insufficient data. The outcome of SETARA 2011 indicated that out of 52 universities and colleges universities rated, 35 institutions or 67 per cent of the total population achieved Tier 5 (excellent category) – 18 of them are categorised in Malaysian private HEIs, 16 institutions or approximately 31 per cent of these institutions achieved Tier 4 (very good category) – 10 of them are classified as Malaysian private HEIs and the remaining one (2 per cent) out of the population achieved Tier 3 (good category). The outcomes of SETARA 2011 were used as it represents a formal measurement practice implemented by the regulatory agencies to assess the quality of education provided by the public and private HEIs in Malaysia ([Kaur and Chapman, 2008](#)). The SETARA outcomes provide evidence that these Malaysian private HEIs have taken several initiatives to overcome difficulties in providing quality education, thus enabling them to improve and maintain their performance in SETARA 2011.

A total of 29 and 158 respondents from the various groups of Malaysian private HEI stakeholders participated in the qualitative and AHP stage as presented in [Tables I and II](#), respectively.

Majority of the respondents were men (60.8 per cent). This is because of the fact that majority of the responses were obtained from the individuals of the Malaysian private HEIs, parents, prospective employers, and regulatory agencies where the top and middle management positions are held usually by men. In term of race, the respondents constituted of Malays (67.7 per cent), Chinese (17.7 per cent), Indians (10.1 per cent) and others (4.4 per cent). It is necessary to obtain views from the three different races, i.e. Malays, Chinese and Indians as the nation's population comprises of these three major races. The percentages of respondents based upon race are close to the nation's racial composition. Respondents years

of age 31 years old and above formed the largest proportion. This is considered appropriate as students that years of age between 20 to 30 years old formed only 19 per cent of the total respondents. This is also deemed appropriate as age indicates a person's level of maturity, as well as the respondent's ability in prioritising the challenges and CSFs for each challenge.

Data for the qualitative stage was collected via semi-structured interviews (Easterby-Smith *et al.*, 2012) particularly in ascertaining the challenges faced in the provision of quality education and their corresponding CSFs. As shown in Table I, 29 respondents participated in the interview sessions. This number is considered adequate for the qualitative stage as it encompassed the views of various groups of stakeholders and most importantly, allowed the present study to reach its saturation point of information (Glasser and Strauss, 1967). As for the quantitative phase, a drop and collect survey (DCS) method was adopted in collecting the responses from the respondents (Brown, 1987). By using the DCS method, 240 questionnaires were distributed to the five stakeholder groups of the Malaysian private HEIs. In total, 176 questionnaires were received after aggressive follow-up via phone calls, direct emails and personal meetings. From these 176 questionnaires, 18 questionnaires were excluded because of incomplete responses. As a result, only 158 valid questionnaires were used for further analysis, generating a 73.33 per cent response rate (refer to Table III for detailed information on the respondents' profile).

3.3 Data analysis

Thematic analysis (Boyatzis, 1998) was chosen as a method to analyse the qualitative data specifically in identifying the challenges and the corresponding CSFs (refer to Appendix 1 for the identified challenges and CSFs together with their definitions). Thematic analysis was used as it allowed themes that represent patterned responses or meaning within the related data set to be captured. In particular, Braun and Clarke's (2006) six stage thematic analysis was applied to analyse the interview data set. The stages are:

- (1) familiarising oneself with the data;

Table I.
Summary of
respondents for the
qualitative stage

Group of stakeholders	No.	(%)
The institution – Malaysian private HLIs	16	55.4
Regulatory agencies	3	10.3
Students	3	10.3
Parents	3	10.3
Prospective employer	3	10.3
Relevant member of NAPEI (non-profit organisations related to Malaysian education)	1	3.4
Total	29	100

Table II.
Summary of
respondents for the
AHP stage

Group of stakeholders	No.	(%)
The institution – Malaysian private HLIs	48	30
Regulatory agencies	19	12
Students	30	19
Parents	30	19
Prospective employer	31	20
Total	158	100

Demographic profile	Frequency	(%)	Critical success factors
<i>Gender</i>			473
Male	96	60.8	
Female	62	39.2	
<i>Ethnicity</i>			
Malay	107	67.7	
Chinese	28	17.7	
Indian	16	10.1	
Others	7	4.5	
<i>Age group</i>			
Less than 20 years	1	0.6	
21-30 years	26	16.5	
31-40 years	49	31.0	
41-50 years	48	30.4	
51 year and above	34	21.5	
<i>Educational level</i>			
SPM/STPM ^a	5	3.2	
Certificate ^b	12	7.6	
Diploma	2	1.25	
Professional ^c	2	1.25	
Bachelors	70	44.3	
Masters	51	32.3	
PhD	16	10.1	
Total	158	100	

Notes: Notes: ^aSchool leaving examination; ^bbetween school leaving examination and diploma; and ^cprofessional qualification, i.e. ACCA – Association of Chartered Certified of Accountants, CILT –Chartered Institute of Logistics and Transport, CIM – Chartered Institute of Marketing

Table III.
Detailed information on respondents' profile in the AHP stage

- (2) generating initial codes;
- (3) searching for themes;
- (4) reviewing themes;
- (5) defining and naming themes; and
- (6) producing the report.

Braun and Clarke's (2006) six stages were used because of its systematic approach in identifying the themes and wide application in various contexts including HEIs (Kirkwood and Price, 2014). Qualitative data analysis software named ATLAS.ti was also employed to facilitate the data analysis process.

The challenges and corresponding CSFs identified in this qualitative stage were then deployed to develop the instrument for the AHP stage by following the specifications suggested by Creswell and Plano Clark (2011). At the AHP stage, the challenges were classified as the criteria, whereas the CSFs to address each challenge were categorised as the sub-criteria placed at Levels 2 and 3 of the AHP hierarchy, respectively, (Table IV and Figure 3). The ranking and priority list of the identified challenges/criteria and their corresponding CSFs/sub-criteria were generated by applying the four steps of AHP (Saaty, 2008), which are:

- (1) define the problem and determine the kind of knowledge sought;

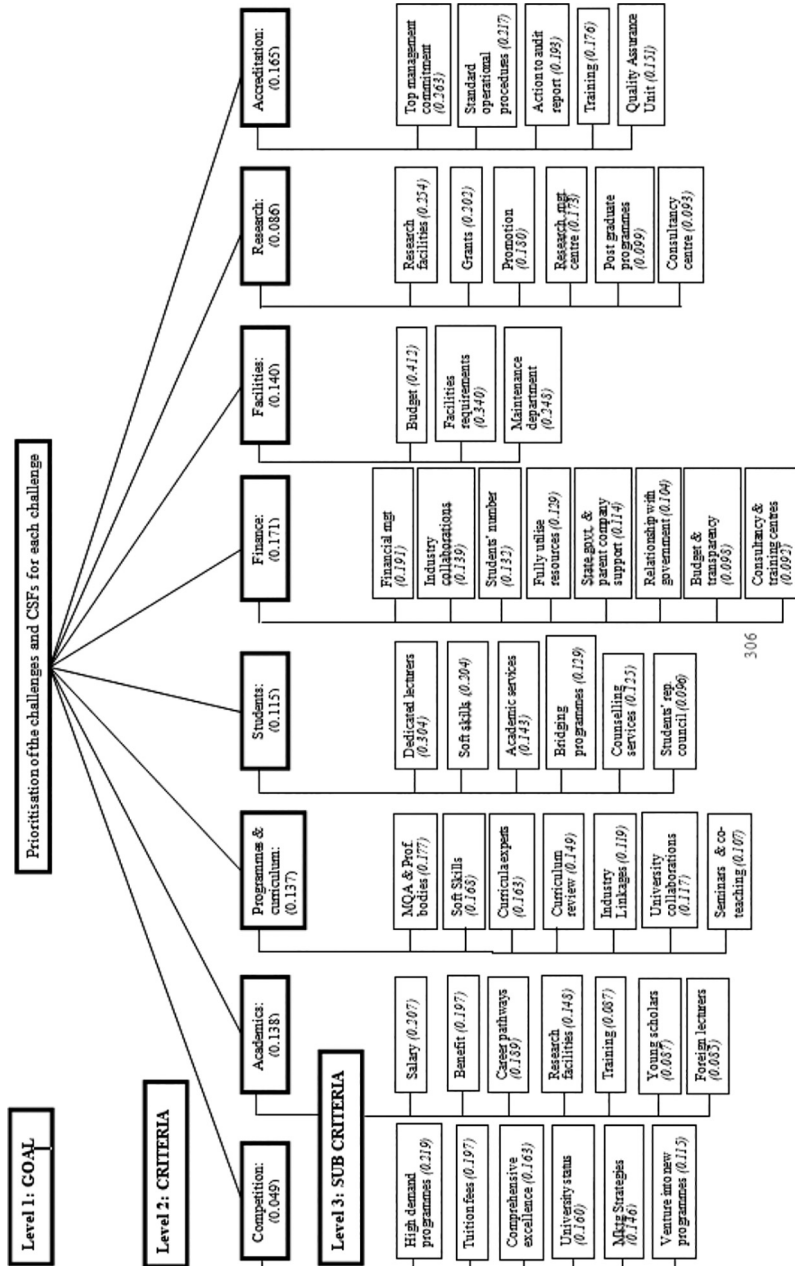


Figure 3. Hierarchical model for the challenges and CSFs in the provision of quality education provided by Malaysian private HLIs

- (2) structure the hierarchy;
- (3) construct the pair-wise comparison matrices; and
- (4) use the priorities obtained from the comparisons to weigh the priorities in the level immediately below.

The AHP was chosen because of its advantages as a decision making tool (Saaty, 1980) and wide range of applications in various industries and contexts including HEIs (Anis and Islam, 2015). Besides, the AHP was used as it allows a group of individuals to participate in a decision making process (Saaty, 1990). The software Expert Choice was used to perform the synthesis and compute the consistency ratio for all the pair-wise comparison judgements for all the criteria/challenges and sub-criteria/CSFs.

4. Results

The qualitative stage applied surfaced the eight challenges as follows: competition, academics, programmes and curriculum, students, finance, facilities, research and accreditation, as well as their corresponding CSFs that act as practical solutions to address each challenge. Refer to Appendix 1 for the listing and definitions of the challenges and their corresponding CSFs. The challenges and CSFs were defined according to the overall responses provided by the respondents during the interview sessions. These identified challenges and CSFs enable achievement of Research objective 1 of the present study.

Research objective 2, on the other hand, is attained by applying a decision making method named AHP. The AHP four steps (Saaty, 2008) enabled the ranking and preparation of the priority list of the challenges and their respective CSFs from two perspectives: firstly, by all groups of stakeholders/all respondents and secondly, for each group of stakeholders. As mentioned before, the stakeholders ranged from the practitioners of Malaysian private HEIs (represented by the quality director, administrators and senior academics), to the students, parents, related regulatory agencies and prospective employers. The summary of ranking and priority values of the challenges and CSFs by all groups of stakeholders from the most to the least important can be seen in Table IV, as well as in a hierarchical model presented in Figure 3. On the other hand, the ranking and priority value of the challenges and their corresponding CSFs assigned by each group of stakeholder is exhibited in Tables V and VII.

4.1 Analysis of ranking of the challenges and critical success factors by all groups of stakeholders

Results from Table IV and Figure 3 indicate that finance (C5) – establishing financial capabilities for the institution's self-sustainability was ranked most important, followed by accreditation (C8) – complying with the rules and regulations of regulatory agencies and professional bodies and facilities (C6) – providing facilities to ensure the delivery of quality education were ranked second and third in importance. The priority values of these challenges are 0.171, 0.165 and 0.140. The least important three challenges ranked by all the stakeholders are students (C4) – moulding and transforming students from poor academic backgrounds and low soft skills, research (C7) – cultivating a research culture among academics, and finally, competition (C8) – gaining competitive advantage in a highly competitive environment with priority values 0.115, 0.086 and 0.049, respectively.

For the CSFs, it was found that to resolve the top most important challenge, i.e. finance (C5) – establishing financial capabilities for the institution's self-sustainability', Malaysian private HEIs should consider the three CSFs that were ranked first, second and third in importance by all groups of stakeholders. The CSFs are financial management (C58) – high

No.	Challenges and CSFs	Challenges and their CSFs	Rank (priority value)	
1.	Level 2: Criteria/challenge Level 3: Sub-criteria/CSFs	<i>Finance (C5)</i>	1 (0.171)	
		Financial management (C58)	1 (0.191)	
		Industry collaborations (C56)	2 (0.139)	
		Student number (C53)	3 (0.132)	
		Fully used resources (C52)	4 (0.129)	
		Government and state government support (C55)	5 (0.114)	
		Relationship with government (C57)	6 (0.104)	
		Budgeting transparency (C51)	7 (0.098)	
		Consultancy and training centres (C54)	8 (0.092)	
	2.	Level 2: Criteria/challenge Level 3: Sub-criteria/CSFs	<i>Accreditation (C8)</i>	2 (0.165)
			Top management commitment (C82)	1 (0.263)
			Standard operating procedures (C85)	2 (0.217)
			Actions to audit report (C84)	3 (0.193)
			Training (C83)	4 (0.176)
		Quality assurance unit (C81)	5 (0.151)	
		Facilities (C6)	3 (0.140)	
3.	Level 2: Criteria/challenge Level 3: Sub-criteria/CSFs	Budget (C61)	1 (0.412)	
		Facilities requirements (C63)	2 (0.340)	
		Maintenance department (C62)	3 (0.248)	
		Academics (C2)	4 (0.138)	
4.	Level 2: Criteria/challenge Level 3: Sub-criteria/CSFs	Salary (C22)	1 (0.207)	
		Benefits (C23)	2 (0.197)	
		Career pathways (C26)	3 (0.189)	
		Research facilities (C27)	4 (0.148)	
		Training (C21)	5 (0.087)	
		Young scholar (C24)	6 (0.087)	
		Foreign lecturers (C25)	7 (0.085)	
	5.	Level 2: Criteria/challenge Level 3: Sub-criteria/CSFs	<i>Programmes and curriculum (C3)</i>	5 (0.137)
			MQA and professional bodies requirements (C35)	1 (0.177)
			Soft skill (C32)	2 (0.168)
		Curricula experts (C37)	3 (0.163)	
		Curriculum review (C34)	4 (0.149)	
		Industrial linkages (C31)	5 (0.119)	
		University collaborations (C33)	6 (0.117)	
		Seminars and co-teaching (C36)	7 (0.107)	
6.	Level 2: Criteria/challenge Level 3: Sub-criteria/CSFs	<i>Students (C4)</i>	6 (0.115)	
		Dedicated lecturers (C45)	1 (0.304)	
		Soft skills (C42)	2 (0.204)	
		Academic services (C44)	3 (0.143)	
		Bridging/foundation programmes (C41)	4 (0.129)	
		Counselling services (C46)	5 (0.125)	
		Students' representative council (C43)	6 (0.096)	
		Research (C7)	7 (0.086)	
7.	Level 2: Criteria/challenge Level 3: Sub-criteria/CSFs	Research facilities (C76)	1 (0.254)	
		Grants (C74)	2 (0.202)	
		Promotion (C75)	3 (0.180)	
		Research management centre (C73)	4 (0.173)	
		Post graduate programmes (C71)	5 (0.099)	
		Consultancy centre (C72)	6 (0.093)	
	8.	Level 2: Criteria/challenge Level 3: Sub-criteria/CSF	<i>Competition (C1)</i>	8 (0.049)
			High demand programmes (C12)	1 (0.219)
		Tuition fees (C14)	2 (0.197)	
		Comprehensive excellence (C13)	3 (0.163)	
		University status (C15)	4 (0.160)	
		Marketing strategies (C11)	5 (0.146)	
		Venture into new programmes (C16)	6 (0.115)	

Table IV.
Summary of the
ranking for the
challenges and their
corresponding CSFs

Table V.
Ranking of the challenges by each group of stakeholder

Type of stakeholders CR	Regulatory agencies 0.05		Parents 0.03		Students 0.03		Malaysian private HLIs 0.02		Employers 0.02	
	Priority value	Rank	Priority value	Rank	Priority value	Rank	Priority value	Rank	Priority value	Rank
Challenges										
Competition (C1)	0.038	8	0.029	8	0.073	8	0.057	8	0.052	8
Academics (C2)	0.096	6	0.207	1	0.115	5	0.136	3	0.143	3
Programmes (C3)	0.140	3	0.164	3	0.107	6	0.127	4	0.132	5
Students (C4)	0.107	5	0.132	5	0.101	7	0.110	6	0.112	6
Finance (C5)	0.224	1	0.185	2	0.161	2	0.146	2	0.134	4
Facilities (C6)	0.114	4	0.139	4	0.140	3	0.120	5	0.170	1
Research (C7)	0.064	7	0.070	7	0.120	4	0.068	7	0.108	7
Accreditation (C8)	0.217	2	0.075	6	0.184	1	0.237	1	0.150	2

R-P	R-S	R-MPHLIs	R-E	P-S	P-MPHLIs	P-E	S-MPHLIs	S-E	MPHLIs-E
0.500	0.690	0.833 ^a	0.619	0.238	0.619	0.548	0.738 ^a	0.714 ^a	0.738 ^a

Table VI.
RCC for the challenges by various stakeholder groups

Notes: ^aSignificant at 5 per cent level; R: regulatory agencies; P: parents; S: students; MPHILs: Malaysian private HLIs; and E: employers

competency in managing the institution’s finance, industry collaborations (C56) – collaborate with the industries by commercialising and innovating their products, as well as improving their services and students number (C53) – obtain the right number of students with priority values of 0.191, 0.139 and 0.132, respectively.

The challenge accreditation (C8) – complying with the rules and regulations of regulatory agencies and professional bodies, which was placed second in importance, recommended the Malaysian private HEIs to focus on the most important CSF, which is top management commitment (C82) – top management commitment and support with a priority value of 0.263. For the challenge facilities (C6) – providing facilities to ensure the delivery of quality education, data in Table IV and Figure 3 also reveal that budget (C61) – allocate certain percentage of the institution’s annual budget to build and improve the facilities was ranked first in importance with a priority value of 0.412 by all groups of stakeholders as the main CSF to address this challenge.

4.2 Analysis based on individual stakeholder’s group

The ranking assigned by each group of stakeholder and priority values for the challenges and their corresponding CSFs were also obtained. The results are presented in Tables V and VII.

Table V exhibits that different groups have ranked the top most important challenge differently. For instance, the academics (C2), finance (C5) and facilities (C6) challenges were ranked as the topmost important by parents, regulatory agencies and employers, whereas students and Malaysian private HEIs assigned maximum importance to accreditation (C8). Nevertheless, several challenges illustrate a fair amount of consensus in their ranking patterns such as finance (C5), wherein the majority of the stakeholders such as regulatory agencies, parents, students and Malaysian private HEIs assigned similar rankings of 1-2-2-2, respectively. Note that the issue of finance is well-known to the various stakeholders of the

Type of stakeholders	Regulatory agencies		Parents		Students		Malaysian private HLIs		Employers	
	Priority value	Rank	Priority value	Rank	Priority value	Rank	Priority value	Rank	Priority value	Rank
CSFs										
C11	0.127	4	0.205	2	0.116	5	0.165	5	0.114	6
C12	0.241	1	0.306	1	0.144	3	0.203	1	0.190	2
C13	0.236	2	0.143	4	0.111	6	0.183	3	0.150	5
C14	0.119	6	0.171	3	0.317	1	0.169	4	0.229	1
C15	0.154	3	0.106	5	0.174	2	0.192	2	0.154	4
C16	0.123	5	0.07	6	0.138	4	0.089	6	0.163	3
C21	0.076	6	0.065	7	0.164	2	0.075	6	0.067	7
C22	0.222	2	0.252	1	0.112	6	0.278	1	0.182	3
C23	0.199	3	0.233	2	0.153	5	0.190	2	0.185	2
C24	0.112	4	0.068	6	0.067	7	0.079	5	0.100	5
C25	0.052	7	0.128	4	0.156	4	0.049	7	0.074	6
C26	0.229	1	0.111	5	0.159	3	0.190	3	0.252	1
C27	0.111	5	0.144	3	0.188	1	0.139	4	0.140	4
C31	0.129	5	0.063	7	0.136	4	0.120	5	0.149	3
C32	0.137	4	0.325	1	0.132	5	0.125	4	0.151	2
C33	0.086	6	0.147	3	0.129	6	0.093	7	0.120	7
C34	0.143	3	0.156	2	0.127	7	0.171	2	0.129	6
C35	0.267	1	0.092	5	0.156	2	0.225	1	0.167	1
C36	0.068	7	0.078	6	0.164	1	0.096	6	0.135	5
C37	0.171	2	0.139	4	0.156	3	0.170	3	0.149	4
C41	0.140	3	0.066	6	0.166	2	0.107	5	0.179	3
C42	0.270	2	0.258	1	0.099	5	0.211	2	0.200	2
C43	0.058	6	0.214	3	0.090	6	0.069	6	0.086	6
C44	0.124	4	0.126	4	0.147	3	0.121	4	0.166	4
C45	0.326	1	0.245	2	0.354	1	0.322	1	0.232	1
C46	0.083	5	0.092	5	0.144	4	0.170	3	0.138	5
C51	0.100	5	0.106	5	0.095	6	0.084	8	0.090	8
C52	0.103	4	0.227	1	0.112	5	0.085	7	0.132	3
C53	0.150	3	0.141	2	0.057	8	0.210	2	0.128	4
C54	0.091	6	0.066	8	0.092	7	0.091	6	0.115	5
C55	0.080	7	0.132	4	0.134	4	0.104	4	0.108	6
C56	0.156	2	0.093	7	0.188	1	0.101	5	0.161	1
C57	0.061	8	0.098	6	0.145	3	0.112	3	0.104	7
C58	0.259	1	0.137	3	0.177	2	0.213	1	0.161	2
C61	0.425	1	0.463	1	0.390	1	0.400	1	0.373	1
C62	0.200	3	0.268	3	0.285	3	0.216	3	0.277	3
C63	0.375	2	0.269	2	0.325	2	0.384	2	0.350	2
C71	0.076	5	0.078	6	0.182	3	0.094	5	0.084	6
C72	0.059	6	0.111	5	0.090	6	0.086	6	0.116	5
C73	0.163	4	0.153	3	0.233	1	0.127	4	0.187	3
C74	0.268	1	0.138	4	0.112	5	0.307	1	0.219	2
C75	0.170	3	0.228	2	0.179	4	0.142	3	0.160	4
C76	0.264	2	0.292	1	0.204	2	0.244	2	0.235	1
C81	0.229	2	0.088	5	0.123	5	0.139	4	0.211	2
C82	0.239	1	0.394	1	0.209	2	0.266	1	0.207	3
C83	0.164	5	0.230	2	0.192	4	0.139	5	0.151	5
C84	0.192	3	0.129	4	0.209	3	0.229	2	0.186	4
C85	0.175	4	0.158	3	0.267	1	0.227	3	0.245	1

Table VII.
Ranking of the
corresponding CSFs
by each group of
stakeholder

Malaysian private HEIs. Likewise, accreditation (*C8*) also obtained fairly similar rankings by the regulatory agencies, students, Malaysian private HEIs and employers with rankings of 2-1-1-2, respectively. However, it was ranked differently, at sixth place by the parents' group. Competition (*C1*) and research (*C7*) on the other hand, were assigned lower by most of the stakeholder groups.

Rank correlation coefficients (RCCs) specifically the Spearman's RCC can be used to ascertain the similarity of rankings assigned by the five groups of stakeholders (Table VI) (Macharia *et al.*, 2015). The information in Table VI reveals a significant similarity in the ranking of challenges by the regulatory agencies and Malaysian private HEIs, students and Malaysian private HEIs, students and employers, and finally, between Malaysian private HEIs and employers at 5 per cent significance level. The parents' group on the other hand, shows no significant similarities with all other stakeholder groups, thus demonstrating that the ranks assigned by the parents' group is different from the ranking assigned by the other group of stakeholders. This is evidently shown in Table V where the parents' group ranked the challenge academics (*C2*) and accreditation (*C8*) differently from the other groups of stakeholders.

The ranking of the CSFs in addressing each challenge assigned by each group of stakeholders is presented in Table VII and the RCCs are provided in Table VIII. Information in Table VII reveals that the groups of stakeholders have ranked the CSFs differently for several challenges. Notably, divergent views were expressed by each group of stakeholder in the ranking of the CSFs for the challenge finance (*C5*), academics (*C2*) and research (*C7*).

The challenge finance (*C5*), fully use resources (*C52*) – fully use the institution's physical assets and multi-tasking of the manpower, for instance, has captured the attention of the parent's group, which consider this CSF as the most important to resolve the challenge finance (*C5*). Students and employers, on the other hand, assigned industries collaboration (*C56*) – collaborate with the industries by commercialising and innovating their products, as well as improving their processes the highest priority. However, the regulatory agencies and Malaysian private HEIs contend that the institution should place higher priority on financial management (*C58*) – high competency in managing the institution's finance compared to the other CSFs for the challenge finance (*C5*).

Besides the differences, there are some CSFs that show relatively similar ranking patterns between the five groups of stakeholders. The CSF for the challenge competition (*C1*), high demand programmes (*C12*) – offer programmes that have high demand in the industry/market, for example, was ranked 1-1-1, respectively, by the regulatory agencies, parents, Malaysian private HEIs but it was ranked third and second in importance by students and employers, respectively. The CSF for the challenge programmes and curriculum (*C3*), MQA and professional bodies (*C35*) – comply with the requirements of MQA and professional bodies was also ranked similarly with rankings of 1-2-1-1 by the regulatory agencies, students, Malaysian private HEIs and employers, respectively. It was however, ranked lower by the parents (at fifth rank). Table VII shows the ranking pattern of the CSFs for the challenge facilities (*C6*) assigned by the five groups of stakeholders is similar. All groups of stakeholders were of the same opinion for budget (*C61*) – allocate certain percentage of the institution's annual budget to build and improve the facilities, facilities requirement (*C63*) – comply with the facilities requirements as prescribed by the regulatory agencies (MOHE and MQA) and relevant professional bodies and maintenance department (*C62*) – establish an efficient facility/maintenance department as they ranked these CSFs first, second and third in addressing the challenge facilities (*C6*).

Ranks of the CSFs assigned by each group of stakeholder have been further synthesised with RCC as presented in Table VIII.

The most striking result to emerge from the data in [Table VIII](#) is that the RCC for all the CSFs for the challenge facilities (C6) were perfectly correlated at 1 per cent significant level. This strongly indicates that all the groups of stakeholders have achieved full consensus in assigning the priorities for the CSFs or obtained perfectly similar ranking pattern for the CSFs for the challenge facilities (C6).

It is also found that none of the RCCs for the CSFs was statistically significant for any combination of stakeholders for competition (C1) and accreditation (C8). This means, each group of stakeholder has assigned different priorities for the CSFs, thus indicating the differing perspectives held by each group in ranking the CSFs to resolve the challenge competition (C1) and accreditation (C8).

In total, 3 out of 10 RCCs for the challenge academics (C2) and research (C7) show a statistically significant similarity between two groups of stakeholders. For the challenge academics (C2) for instance, the ranking of CSFs by the regulatory agencies and Malaysian private HEIs, regulatory agencies and employers, as well as Malaysian private HEIs and employers have attained some level of agreement at 5, 1 and 5 per cent significant level, respectively. The RCC values shared by these groups indicate that these groups have achieved some amount of consensus on how the CSFs should be ranked in addressing the challenge academics (C2) and research (C7) in Malaysian private HEIs.

The results in [Table VIII](#) shows that the regulatory agencies and employers have some degree of agreement in ranking the CSFs for the challenges academics (C2), finance (C5), research (C7) and have perfect correlation in prioritising the CSFs for students (C4) and facilities (C6). In contrast, [Table VIII](#) reveals that no significant coefficients emerged from the combinations of parents and students with other stakeholder groups [except CSFs for the challenge facilities (C6)]. Moreover, negative RCC indicates wide differences in the ranking of the CSFs assigned by parents and students for the challenges academics (C2), programmes and curriculum (C3), students (C4) and finance (C5). In particular, these findings suggest the agreement of judgements between the regulatory agencies and employer groups, as well as differing views between the parent and student groups that require further exploration.

5. Discussion

The eight challenges faced by the Malaysian private HEIs in the provision of quality education and their corresponding CSFs are identified and presented in [Appendix 1](#). The challenges and CSFs were subsequently ranked using the AHP. The CSFs provide important information on how the problems faced by the educational institutions should

Table VIII.
RCC for the CSFs of each challenge by various groups of stakeholders

Challenges	R-P	R-S	R-MPHLIs	R-E	P-S	P-MPHLIs	P-E	S-MPHLIs	S-E	MPHLIs-E
C1	0.371	-0.371	0.771	-0.257	0.029	0.429	0.086	0.257	0.771	0.200
C2	0.357	-0.321	0.857 ^a	0.893 ^b	-0.214	0.714	0.536	-0.286	-0.143	0.821 ^a
C3	0.214	0.000	0.929 ^b	0.536	-0.679	0.179	-0.179	0.036	0.464	0.536
C4	0.429	0.657	0.771	1.000 ^b	-0.257	0.543	0.429	0.429	0.657	0.771
C5	0.333	0.238	0.262	0.810 ^b	-0.190	0.214	0.190	0.262	0.429	0.310
C6	1.000 ^b	1.000 ^b	1.000 ^b	1.000 ^b	1.000 ^b	1.000 ^b	1.000 ^b	1.000 ^b	1.000 ^b	1.000 ^b
C7	0.600	0.143	1.000 ^b	0.829 ^a	0.429	0.600	0.771	0.143	0.314	0.829 ^a
C8	0.000	0.000	0.700	0.300	0.500	0.300	-0.300	0.600	0.400	0.200

Notes: ^aSignificant at 5 per cent level; ^bsignificant at 1 per cent level; R: regulatory agencies; P: parents; S: students; MPHILIs: Malaysian private HLIs; and E: employers

be addressed. These were identified by closely examining the suggestions made by the stakeholders of Malaysian private HEIs.

The ranking of the challenges and CSFs was obtained from two perspectives: firstly, from all the groups of stakeholders collectively; and secondly, by considering each individual stakeholder separately.

Table IV and Figure 3 show the challenge finance (C5) – establishing financial capabilities for the institution's self-sustainability as the topmost in importance in the provision of quality education by all groups of stakeholders, with a priority value of 0.171. This corroborates prior research by Li (2014), Otto and Musinguzi (2013) and Mpezamihigo (2012), all of whose findings include finance (C5) as one of the major challenges in managing and providing quality education by private HEIs.

It was crucial to obtain ranking based on each group of stakeholder because of their different perceptions and as each stakeholder may possess different views and varying expectations from private HEIs (Aly *et al.*, 2014; Becket and Brookes, 2008). It is important for the HEIs to get a complete and formalised overview of problems and solutions that may arise from various groups of stakeholders who are affected by the HEIs' operations. It is advisable for the HEIs to obtain feedback from their stakeholders to successfully manage the HEIs for greater efficiency and quality.

The findings presented in Table V proved that the most important challenge, i.e. finance (C5) was ranked at 1-2-2-2-4 by the regulatory agencies, parents, students, Malaysian private HEIs and employers, respectively. The ranking of the challenges specified either by all groups of stakeholders or each group of stakeholder categorically illustrates that a satisfactory level of quality education demands substantial financial investment on the part of Malaysian private HEIs (Sarker *et al.*, 2010). Providing competitive staff remuneration, ensuring adequate facilities to support the teaching and learning processes, besides administrative costs, constitute substantial operating costs that have to be effectively and efficiently managed by the institutions (Halai, 2013). A director in a government tertiary education agency reiterated the significance of finance (C5) for Malaysian private HEIs:

Finance is the biggest challenge and the key success factor to everything. With financial capability, the private HEIs are able to get the best for them; the best lecturers, the best facilities and they are capable to conduct relevant marketing activities to get the best students. This is a major issue for us in the Ministry of Higher Education.

As such, it can be emphasised that without adequate funding, Malaysian private HEIs can neither expand sufficiently nor improve the quality of education (Altbach, 2014).

The most critical CSF that act as a practical solution to address the challenge finance (C5) was also assessed from the views of all the groups of stakeholders, as well as each group of stakeholder. Table IV and Figure 3 illustrate that financial management (C58) – high competency in managing the institution's finance was the most important strategy that has to be considered by the Malaysian private HEIs in resolving the challenge finance (C5) with a priority value of 0.191. Table VII also shows similar outcomes in which financial management (C58) was ranked moderately similar by the regulatory agencies, parents, students, Malaysian private HEIs and employers with a ranking of 1-3-2-1-2, respectively.

However, this finding does not provide support for previous research, which commonly associated the challenge finance (C5) with tuition fees, closely related to student numbers (C53) – obtain the right number of students (Li, 2014; Altbach and Levy, 2005). This might be because of the perception that higher student enrolment means higher earnings by the Malaysian private HEIs. This contradictory finding might be attributed to the circumstances as observed by Oketch (2003) that too much dependence on tuition fees has

brought other implications for the private HEIs. For instance, there is little breath of research and programme diversification because of limited funding, as well as the unintended impact of the student composition (in light of their social status) at private HEIs where fees are high (Oketch, 2003). Also, caution has to be exercised so that the increasing number of students is matched with the capacity of the institution's infrastructure and staff availability (Otto and Musinguzi, 2013).

The implications of over dependence on the students' tuition fees may have caused the respondents to rank financial management (C58) – high competency in managing the institution's finance as the top most CSF in addressing the challenge finance (C5). The Malaysian private HEIs are also advised to operate on a business model and should be more creative and aggressive in seeking and obtaining funds for its operations. The authorities should also have detailed projections particularly in determining its break-even point, i.e. 10 or 15 or 20 years, as determination of time when the profit can be realised will enable the institution to plan and execute pertinent financial management strategies to remain competitive in the marketplace. This approach will also provide Malaysian private HEIs with a strong footing, as it can credibly demonstrate the ability to bring innovation and quality education into the market. As such, as stressed by Mpezamihigo (2012), financial management or high competency in managing the institution's finance is one of the prime requirements for successful provision of quality education by Malaysian private HEIs.

6. Conclusion

Delivering high-quality education is the single most important way in which HEIs can serve their students. This study has developed a hierarchical model that can be used as a guide for Malaysian private HEIs in their efforts to provide quality education. This was made possible by generating important empirical findings via the ranking of the list of challenges and their corresponding CSFs by each group of stakeholder of Malaysian private HEIs.

In particular, this study appeals to those who are tasked with providing education, especially the management team of Malaysian private HEIs about the significant challenges in providing quality education. For them, further analysis of the challenges and CSFs will result in a focus on solving their right problems. Prioritising the CSFs for the identified challenges is vital as it highlights the practical aspects that need to be overcome to increase chances of success in delivering quality education. The ranking of the challenges and the priority list of the CSFs will assist the management team in allocating their limited resources in addressing their most critical challenges. This suggests that questions about ensuring high-quality education, which is the single most important service that HEIs provide, especially with projected increase in student numbers, can be addressed by implementing the CSFs that were ranked higher by the internal and external stakeholders of these private HEIs. Implementation of the proposed strategies will provide an opportunity to advance the economic and social upgrading of private HEIs, as resources and capabilities will be efficiently and effectively used. In essence, the present study has highlighted the areas and their corresponding priorities for Malaysian private HEIs so that necessary resources can be disbursed accordingly and this will help enhance the overall quality of education provided these institutions.

6.1 Theoretical implications

The main contribution of the present study is the establishment of a hierarchical model that serves as a guide in enhancing the provision of quality education in Malaysian private HEIs. Findings of the present study have demonstrated a systematic process in developing the

hierarchical model by collecting and analysing information from internal and external stakeholders of Malaysian private HEIs.

The study extends existing work on the provision of quality education by adopting the absence of problems model within the hierarchical framework developed in the present study. The absence of problems model is one of the seven quality education models proposed by [Cheng and Tam \(1997\)](#) that places considerable emphasis on analysing the challenges faced by the educational institutions as a determinant of effective strategies for improvement. In this light, the challenges faced by the Malaysian private HEIs in the provision of quality education are identified and analysed. The identified challenges, as mentioned before are academics, facilities, students, programmes and curriculum, competition, accreditation, finance and research. This study then provides important information on the CSFs that act as practical solution in addressing each challenge by closely examining the suggestions of the stakeholders.

Furthermore, the hierarchical model established in the present study seems to improve the “classification of higher education challenges” created by [Sarker *et al.* \(2010\)](#). The deficiencies of the model is rectified in the present study by applying a powerful decision making tool, the AHP. By applying the four stages of the AHP as suggested by [Saaty \(2008\)](#), the challenges and approaches to resolve the challenges can be structured more systematically in a hierarchical format. The application of the AHP allows development of a valid and reliable model in classifying the challenges and CSFs for each of the challenges.

6.2 Practical implications

The hierarchical model established in the present study provides private HEIs with a distinctive advantage: they can use the model as a tool in structuring and simplifying complex processes with regard to the delivery of quality education, and subsequently, use it to address any issues they face. Specifically, the benefits are as follows:

- The ranking generated can help the authorities of Malaysian private HEIs in efficiently allocating their resources. As stressed by [Srijuntub \(2008\)](#), the lowest level of the AHP hierarchy needs more resource allocation and in the present study, the lowest level of hierarchy is represented by the CSFs for each challenge. As such, more resources need to be disbursed to the CSFs ranked top most in importance in resolving the identified challenge.
- The model may reduce costs as the institution can now prioritise various developmental activities. Moreover, the hierarchical model can facilitate the management process and reduce the frequency of meetings amongst the top and middle management in resolving the institution’s quality issues.

For policymakers, the findings can be useful in two ways: firstly, varied views obtained from the internal and external stakeholders can help the policymakers to evaluate quality of education from different angles with the hope that some form of control mechanisms can be put into practice in future. Secondly, the evidence collected can make a meaningful difference as the study has showcased the complex and peculiar difficulties encountered by Malaysian private HEIs in the delivery of quality education. The findings create further opportunities for policies to be designed and implemented in assisting the operations of these privately funded institutions that perform identical functions as public HEIs in producing the nation’s human capital.

6.3 Recommendations for future research

Further research can be carried out on the following issues:

- Incorporate inputs from a broader range of stakeholders as proposed by Sahin (2009) in an attempt to identify other relevant challenges and CSFs, as well as establishing a more accurate hierarchical model. Views can be sought from the government agencies that are directly responsible for providing funds for students to pursue their studies in private HEIs, authorities in professional bodies and relevant representatives from the Malaysian Association of Private Colleges and Universities.
- Apply the hierarchical model developed using a case study approach. The case studies can be conducted either in one particular private HEI or involving the five different types of ownerships of Malaysian private HEIs. For instance, the private HEIs that are owned by government-linked companies, those owned by successful edupreneurs, those supported by the political parties or state governments, those established by public listed companies and the branch campuses of foreign universities.
- The differing views of the parents and students on the ranking of the CSFs merit further exploration (Table VIII).
- Capture the interaction and dependence of higher-level elements with lower-level ones by using the analytic network process (ANP). ANP may be used as some of the challenges/criteria and CSFs/sub-criteria may interact with one another.

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No.	Challenge/ CSFs	Items	Definitions	
1.	Challenge CSFs	<i>Competition</i>	Gaining competitive advantage in a highly competitive environment (C1)	
		<i>Marketing strategies</i>	Develop and use relevant marketing strategies, which help to differentiate the institution from the competitors (C11)	
		<i>High demand programmes</i>	Offer programmes that have high demand in the industry/market (C12)	
		<i>Comprehensive excellence</i>	Establish comprehensive excellence in every strata of governing the institution (C13)	
		<i>Tuition fees</i>	Offer competitive and affordable tuition fees (C14)	
		<i>University status</i>	Engage efforts to attain full-fledged university status (C15)	
		<i>Venture into new programmes</i>	Venture into programmes that are scarce or yet to be offered by the other private HLIs, provided there is a good demand for the programme (C16)	
	2.	Challenge CSFs	<i>Academics</i>	Hiring and retaining dedicated academics (C2)
			<i>Training</i>	Provide continuous training to enhance academics' teaching skills, knowledge and motivation (C21)
			<i>Salary</i>	Offer attractive salary package (C22)
			<i>Benefit</i>	Provide attractive benefits (C23)
			<i>Young scholar</i>	Establish the young lecturers' scheme (C24)
			<i>Foreign lecturers</i>	Bring in foreign lecturers, particularly for critical programmes (C25)
			<i>Career pathway</i>	Establish clear career pathways so that academics can plan the direction of their career (C26)
3.	Challenge CSFs	<i>Programmes and curriculum</i>	Offering programmes and curriculum that are able to develop the students and remain continuously relevant to the needs of industry and the nation (C3)	
		<i>Industrial linkages</i>	Establish strong linkages between the university and industries (C31)	
		<i>Soft skills</i>	Embed soft skills components in the programmes and modules to enhance self-development and employability of the students (C32)	
		<i>University collaborations</i>	Adopt best practices from university collaborations with local and foreign universities (C33)	
		<i>Curriculum review</i>	Continually review the curriculum because of the constant feedback from industry advisors, external examiners, professional bodies and MQA (C34)	
		<i>MQA and professional bodies</i>	Comply with the requirements of MQA and relevant professional bodies (C35)	
		<i>Seminars and co-teaching</i>	Invite industry experts to give seminars and conduct co-teaching to expose students to real business scenarios (C36)	
	<i>Curricula experts</i>	Grow experts to develop the institutions' curricula (C37)		

(continued)

Table A1.
Definitions of the identified challenges and corresponding CSFs to address each challenge

No.	Challenge/ CSFs	Items	Definitions
4.	Challenge CSFs	<i>Students</i> <i>Bridging programmes</i> <i>Soft skills</i> <i>Students' representative council</i> <i>Academic services</i> <i>Dedicated lecturers</i> <i>Counselling services</i>	Moulding and transforming students from poor academic backgrounds and low soft skills (C4) Offer bridging programmes to enhance language skills and re-engineer thinking skills (C41) Enforce the teaching and practice of soft skills (C42) Hold continuous meetings and dialogues with the students' representative council (C43) Provide relevant services (i.e. remedial classes and advisory system) to improve the performance of academically poor students (C44) Have dedicated lecturers to deliver knowledge within the students' area of studies (C45) Implement a counselling system to improve poor mindsets and attitudes of the students (C46)
5.	Challenge CSFs	<i>Finance</i> <i>Budgeting and transparency</i> <i>Fully use resources</i> <i>Students number</i> <i>Consultancy and training centres</i> <i>Government and state government support</i> <i>Industry collaborations</i> <i>Relationship with government</i> <i>Financial management</i>	Establishing financial capabilities for the institution's self-sustainability (C5) Practice prudence and transparency in budgeting and spending (C51) Fully use the institution's physical assets and multi-tasking of manpower (C52) Obtain the right number of students (C53) Establish consultancy and training centres to generate income (C54) Obtain continuous support from the state government or parent company (C55) Collaborate with the industries by commercialising and innovating their products and improving their processes (C56) Establish good relationship with the government to gain potential government benefits (C57) High competency in managing the institution's finance (C58)
6.	Challenge CSFs	<i>Facilities</i> <i>Budget</i> <i>Maintenance department</i> <i>Facilities requirement</i>	Providing facilities to ensure the delivery of quality education (C6) Allocate a certain percentage of the institution's annual budget to build and improve the facilities (C61) Establish an efficient facility/maintenance department (C62) Comply with the facilities requirements as prescribed by the regulatory agencies (MOHE and MQA) and relevant professional bodies (C63)
7.	Challenge CSFs	<i>Research</i> <i>Postgraduate programmes</i> <i>Consultancy centre</i> <i>Research management centre</i>	Cultivating a research culture among academics (C7) Develop post graduate programmes for the institution (C71) Establish a consultancy centre and collaborate actively with public and private sectors (C72) Establish a research management centre to plan, manage and increase research activities and publications (C73)

(continued)

QAE 27,4	Challenge/ No. CSFs	Items	Definitions	
490		<i>Grants</i>	Provide internal grants and facilitate applications for external grants (C74)	
		<i>Promotion</i>	Impose publication as one of the essential elements for the promotion of academics (C75)	
			<i>Research facilities</i>	Provide research facilities for academics to involve actively in research such as financial support, equipment and reduction of teaching workload (C76)
	8.	Challenge	<i>Accreditation</i>	Complying with rules and regulations of regulatory agencies and relevant professional bodies (C8)
		CSFs	<i>Quality assurance unit</i>	Establish a quality assurance unit with strong professional links with the MQA and professional bodies (C81)
			<i>Top management commitment</i>	Top management commitment and support (C82)
			<i>Training</i>	Provide continuous internal and external training to ensure that the MQA and professional bodies requirements are recognised, compiled and can be executed by all levels of management (C83)
		<i>Action to audit report</i>	All necessary actions should be taken with regard to the full audit report provided by the MQA (C84)	
		<i>Standard operating procedures</i>	Establish precise structure of processes and standard operating procedures for all the activities of the institution (C85)	

Table AI.

Code	Name of institution
<i>Tier 6: Outstanding</i>	
None	
<i>Tier 5: Excellent</i>	
2	Asia Pacific University College of Technology and Innovation
2	Binary University College of Management and Entrepreneurship
2	Curtin University of Technology Sarawak Campus
2	Cyberjaya University College of Medical Sciences
2	International Medical University
2	Kuala Lumpur Infrastructure University College
2	Management and Science University
2	Monash University Sunway Campus
2	Multimedia University
2	Nilai University College
2	Open University Malaysia
2	SEGi University College
2	Sunway University
2	Swinburne University of Technology Sarawak Campus
2	Taylor's University
1	Universiti Islam Antarabangsa Malaysia
1	Universiti Kebangsaan Malaysia
2	Universiti Kuala Lumpur
1	Universiti Malaya
1	Universiti Malaysia Pahang
1	Universiti Malaysia Perlis
1	Universiti Putra Malaysia
1	Universiti Sains Islam Malaysia
1	Universiti Sains Malaysia
1	Universiti Teknikal Malaysia Melaka
1	Universiti Teknologi Malaysia
1	Universiti Teknologi MARA
2	Universiti Teknologi Petronas
2	Universiti Tenaga Nasional
2	Universiti Tun Abdul Razak
1	Universiti Tun Hussein Onn Malaysia
2	Universiti Tunku Abdul Rahman
1	Universiti Utara Malaysia
2	University of Nottingham Malaysia Campus
2	Wawasan Open University
<i>Tier 4: Very good</i>	
2	AIMST University
2	HELP University College
2	INTI International University
2	Kolej Universiti Insaniah
2	Kolej Universiti Islam Antarabangsa Selangor
2	Kuala Lumpur Metropolitan University College
2	TATi University College
2	Twintech International University College of Technology
2	USCI University

Table AII.
SETARA '11 – the
2011 rating of
Malaysian
universities and
university colleges

(continued)

QAE
27,4

492

Code	Name of institution
2	Universiti Industri Selangor
1	Universiti Malaysia Kelantan
1	Universiti Malaysia Sabah
1	Universiti Malaysia Sarawak
1	Universiti Malaysia Terengganu
1	University Pendidikan Sultan Idris
1	Universiti Pertahanan Nasional Malaysia (10)

Tier 3: Good

Code	Name of institution
1	Universiti Sultan Zainal Abidin

Tier 2: Satisfactory

None

Tier 1: Weak

None

Notes: The SETARA '11 exercise classifies its rating into six tiers, ranging from Tier 1 as weak to Tier 6 as outstanding. The following is the full results, sequenced in alphabetical order; 1: public HEIs; 2 private HEIs

Table AII.

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