

**CAPABILITIES AND COMPETENCIES RELATED TO
LEADERSHIP PERFORMANCE EFFECTIVENESS IN THE
CONTEXT OF CHANGE IN MALAYSIAN HIGHER
EDUCATION INSTITUTIONS**

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**FACULTY OF EDUCATION
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PERFORMANCE EFFECTIVENESS IN THE CONTEXT OF CHANGE IN
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ABSTRACT

This study aimed at identifying the essential capabilities and competencies of leaders for effective university leadership, determining the extent to which these qualities explain leadership performance, and identifying the main priorities, values, challenges, as well as solutions from the viewpoints of Malaysian academic leaders. It is noteworthy that academic leaders refer to vice-chancellors, deputy vice-chancellors, deans, directors, deputy deans, deputy directors, heads of departments, as well as professors without formal positions in universities' organizational charts. To collect data in the piloting phase, permission was obtained to utilize the scales which had been developed in Australian academic context to operationalize capabilities, competencies, and leadership performance. In addition, a new change-oriented capability scale was developed on the grounds of an extensive literature review focusing on change-oriented leadership. The theoretical validity of the scales was established and the scales were administered through one online platform. A number of 90 academic leaders from five public and four private universities completed the survey. Next, the reliability of the scales was estimated and the highly prominent elements in capabilities, competencies, and leadership performance in Malaysian Higher Education Institutions (HEIs) were descriptively highlighted. Also, Principal Component Analysis (PCA) and Velicer's Minimum Average Partial (MAP) test were run to identify the main constructs under each domain of capabilities, competencies, and leadership performance. The resulting scales through these procedures as well as four open-ended questions related to Malaysian HE issues were used to collect data for the actual study. For this purpose, the online version of the survey was administered among academic leaders in 25 public and private universities. More than 400 surveys were collected, among which only 368 surveys were appropriate for data analysis.

Next, IBM SPSS Statistics 23 was used for data screening and descriptive analysis whereas SmartPLS 3 was employed to develop a few models for the contribution of capabilities and competencies to leadership performance in Malaysian academic settings. The results of Partial Least Squares (PLS) algorithm were extended through running Finite Mixture Partial Least Squares (FIMIX-PLS) and Importance-Performance Map Analysis (IPMA) as well. Additionally, ATLAS.ti 7 was used to manage the collected qualitative data, and to analyze them, descriptive statistics and thematic analysis were undertaken. The results of the analysis highlighted the highly prominent items under each domain on the grounds of the actual study instrument. Additionally, five models for the contribution of capabilities and competencies to leadership performance in Malaysian HE and its sectors were developed. These models were underpinned by the qualitative data. Moreover, the examination of the qualitative data revealed five main areas of focus in Malaysian HE namely academic core activities, management, change & leadership, relationships, and work values. Even though the results of this study have several theoretical, practical, and methodological implications, upgrading the contents and processes of leadership developmental programs in each of Malaysian HE sectors deems to be considerably crucial.

ABSTRAK

KEUPAYAAN DAN KECEKAPAN BERKAITAN DENGAN KEPIMPINAN PRESTASI KEBERKESANAN DALAM KONTEKS PERUBAHAN DI INSTITUSI PENGAJIAN TINGGI MALAYSIA

Kajian ini bertujuan untuk mengenal pasti keupayaan penting dan kecekapan pemimpin kepimpinan universiti yang berkesan, menentukan sejauh mana kualiti ini menjelaskan prestasi kepimpinan, dan mengenal pasti keutamaan utama, nilai-nilai, cabaran, dan juga penyelesaian dari sudut pandangan pemimpin akademik Malaysia. Perlu diperhatikan bahawa pemimpin akademik merujuk kepada naib canselor, timbalan naib canselor, dekan, pengarah, timbalan dekan, timbalan pengarah, ketua-ketua jabatan, serta profesor tanpa jawatan rasmi dalam carta organisasi universiti. Untuk mengumpul data dalam fasa perintis tersebut, kebenaran telah diperolehi untuk menggunakan skala yang telah dibangunkan dalam konteks akademik Australia untuk mengendalikan keupayaan, kecekapan dan prestasi kepimpinan. Di samping itu, skala keupayaan perubahan berorientasikan baru telah dibangunkan atas alasan kajian kesusasteraan yang banyak memberi tumpuan kepada kepimpinan perubahan berorientasikan. Kesahihan teori daripada skala ditubuhkan dan skala ditadbir melalui satu platform dalam talian. Sejumlah 90 pemimpin akademik daripada lima universiti awam dan empat universiti swasta telah terlibat dalam kajian tinjauan tersebut. Seterusnya, kebolehpercayaan skala dianggarkan dan unsur-unsur yang sangat penting dalam keupayaan, kecekapan dan prestasi kepimpinan di IPT Malaysia (IPT) telah deskriptif diserlahkan. Juga, Principal Component Analysis (PCA) dan Velicer's Minimum Average Partial (MAP) ujian ini telah dijalankan untuk mengenal pasti konstruk utama di bawah setiap domain keupayaan, kecekapan dan prestasi kepimpinan. Skala yang terhasil melalui prosedur ini dan juga empat soalan-soalan

terbuka yang berkaitan dengan isu-isu HE Malaysia telah digunakan untuk mengumpul data untuk kajian sebenar. Bagi tujuan ini, versi dalam talian kaji selidik itu telah ditadbir di kalangan pemimpin akademik di 25 universiti awam dan swasta. Lebih daripada 400 kajian telah dikumpulkan, antara yang hanya 368 kaji selidik adalah sesuai untuk analisis data. Seterusnya, IBM SPSS Statistik 23 telah digunakan untuk menyaring data dan analisis deskriptif, manakala SmartPLS 3 telah digunakan untuk membangunkan beberapa model untuk sumbangan keupayaan dan kecekapan prestasi kepimpinan dalam tetapan akademik Malaysia. Keputusan Partial Least Squares (PLS) algoritma telah dilanjutkan melalui Finite Mixture Partial Least Squares (FIMIX-PLS) dan juga Importance-Performance Map Analysis (IPMA). Selain itu, ATLAS.ti 7 telah digunakan untuk menguruskan data kualitatif yang dikumpul, dan untuk menganalisisnya statistik deskriptif dan analisis tematik telah dilaksanakan. Keputusan analisis menekankan item-item yang sangat menonjol di bawah setiap domain atas alasan instrumen kajian sebenar. Selain itu, lima model untuk sumbangan keupayaan dan kecekapan prestasi kepimpinan dalam HE Malaysia dan sektornya telah dibangunkan. Model-model ini telah disokong oleh data kualitatif. Selain itu, pemeriksaan data kualitatif mendedahkan lima kawasan tumpuan utama di HE Malaysia iaitu akademik aktiviti teras, pengurusan, perubahan & kepimpinan, hubungan dan nilai bekerja. Walaupun hasil kajian ini mempunyai beberapa implikasi daripada segi teori, praktikal, dan metodologi; menaik taraf kandungan dan proses program pembangunan kepimpinan di setiap sektor HE Malaysia disifatkan jauh lebih penting.

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Prophet Muhammad (PBUH):

Seek knowledge from the cradle to the grave.

All the praises to the sustainer of the world, and grace, honor, and salutations on the chief of apostles and seal of prophets, Muhammad, his family, and companions.

This achievement could not be attained if I had not been supported by some great people.

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LIST OF SYMBOLS, ABBREVIATIONS, OR NOMENCLATURE

ACER	:	Australian Council for Educational Research
AIC	:	Akaike Information Criterion
AIC3	:	Modified Akaike Information Criterion with 3 Factors
AIC4	:	Modified Akaike Information Criterion with 4 Factors
AKEPT	:	Akademi Kepimpinan Pengajian Tinggi
ALTC	:	Australian Learning and Teaching Council
APA	:	Analyzing Problems and Alternatives
APE	:	Academic Professional Excellence
ATEM	:	Association for Tertiary Education Management
AVE	:	Average Variance Extracted
BCa	:	Bias-Corrected and Accelerated
BIC	:	Bayesian Information Criteria
BoP	:	Base of Pyramid
BPD	:	Being Performance Driven
BSC	:	Balanced Scorecard
BSP	:	Benchmarking Standards and Practices
CAIC	:	Consistent Akaike Information Criterion
CAP	:	Changing Academic Profession
CB-SEM	:	Covariance-Based Structural Equation Modeling
CEQ	:	Course Experience Questionnaire
CPE	:	Change-centered, Production-centered and Employee-centered
CMV	:	Common Method Variance
CRT	:	Cognitive Resources Theory
EFA	:	Exploratory Factor Analysis
EfS	:	Education for Sustainability
EN	:	Entropy Criterion

FA	:	Factor Analysis
FIMIX-PLS	:	Finite Mixture Partial Least Squares
FMADM	:	Fuzzy Multiple Attribute Decision Making
HCOF	:	Having Clear Objective Focus
HE	:	Higher Education
HEFCE	:	The Higher Education Funding Council for England
HEI	:	Higher Education Institution
HTMT	:	HeteroTrait-MonoTrait
IPMA	:	Importance-Performance Map Analysis
KMO	:	Kaiser-Meyer-Olkin
KSAs	:	Knowledge, Skills, and Abilities
LIMEO	:	Leadership In Malaysian Educational Organizations
MAP	:	Minimum Average Partial
MDJ	:	Making Decisions and Judgments
MEB (HE)	:	Malaysian Education Blueprint (HE)
MDL5	:	Minimum Description Length with 5 Factors
MPS	:	Managerial Practices Survey
NHSEP	:	National Higher Education Strategic Plan
OLS	:	Ordinary Least Squares
OOb	:	Overcoming Obstacles
PCA	:	Principal Component Analysis
PHEIA	:	Private Higher Education Institutions Act
PLS	:	Partial Least Squares
PLSc	:	Consistent PLS
PLS-MGA	:	Partial Least Squares Multi Group Analysis
PLS-SEM	:	Partial Least Squares Structural Equation Modeling
POS	:	Prediction-oriented Segmentation
RBV	:	Resource-Based View

RP	:	Recognition and Prestige
SAT	:	Strategic Adaptive Thinking
SD	:	Standard Deviation
SEM	:	Structural Equation Modeling
SES	:	Strategic Environmental Scanning
SID	:	Sharing Information and Data
SOC	:	Supporting Organizational Culture
TOB	:	Thinking Out of the Box
UKM	:	Universiti Kebangsaan Malaysia
UM	:	University of Malaya
UOR	:	Understanding Operations and Risks
USM	:	Universiti Sains Malaysia
UUCA	:	Universities and University Colleges Act
VB-SEM	:	Variance-Based Structural Equation Modeling

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CHAPTER 1

INTRODUCTION

Overview

There is an abundance of literature regarding leadership understood by several phases of theoretical perspectives and propositions, ranging from the trait theories (Zaccaro, 2007; Zaccaro, Kemp, & Bader, 2004) to the skill theories (Mumford, Zaccaro, Harding, Jacobs, & Fleishman, 2000), style theories (Bass & Stogdill, 1990; Blake & Mouton, 1985; Hersey & Blanchard, 1988) , and now change-oriented leadership theory (Arvonen, 2008; Ekvall, 1991; Ekvall & Arvonen, 1991; Yukl, 1999, 2004, 2012; Yukl, Gordon, & Taber, 2002).

Adding to the complication, however, leadership has been classified into numerous types such as autocratic leadership, transactional leadership, participative leadership, moral leadership, political leadership, cultural leadership, instructional leadership, shared leadership, and transformational leadership, as if leadership is categorically discrete and determinate, with no overlapping of characteristics, actions, and outcomes.

Basically, leadership refers to the thoughts and actions of a leader or a group of people leading an enterprise with reference to the desired goals or ends (Brubacher, 1978; Veysey, 1960). What differentiates a good leader from a bad one is legacy, whether in terms of knowledge, value system, cultural system, or technology for the benefit of human civilization.

On the grounds of the literature, leadership performance effectiveness has always grabbed attention and many theories have explained the contribution of leadership traits, skills, styles, and behaviors to leadership performance. For example, trait theories of

leadership (Zaccaro, 2007; Zaccaro et al., 2004) focus on leaders' innate traits as well as their personal capability (Fullan & Scott, 2009; Scott, Coates, & Anderson, 2008); skills approaches (Katz, 1974; Mumford et al., 2000) emphasize on required managerial competencies and skills of effective leaders (Fullan & Scott, 2009; Othman & Othman, 2014; Scott et al., 2008); and based on style theories (Bass & Stogdill, 1990), the interpersonal capability of leaders (Fullan & Scott, 2009; Scott et al., 2008) are perceived as crucial towards leadership performance. Additionally, with respect to the importance of cognitive capability as another type of leadership capabilities (Fullan & Scott, 2009; Othman & Othman, 2014; Scott et al., 2008), Cognitive Resources Theory (CRT) (Fiedler, 1986; Fiedler & Garcia, 1987) may be regarded as one of the main theories to explain the contribution of this quality to effective leadership.

Nevertheless, for initiating and managing change programs and major turnarounds and transformations in different types of organizations, change-oriented leadership style (Arvonen, 2008; Ekvall, 1991; Ekvall & Arvonen, 1991; Yukl, 1999, 2012; Yukl et al., 2002) is also viewed as a crucial element towards effectiveness. This style has been underpinned by tridimensional leadership theory (Yukl, 2004) as well. Therefore, focusing on Higher Education Institutions (HEIs), not only personal, interpersonal and cognitive capability as well as managerial competencies (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012) are essential for effective leadership, but also change-oriented capability plays a pivotal role in terms of implementing successful change programs and advancing leadership performance.

It is worth noting that in the current shifting and turbulent environment, undergoing transformations through development and practice of effective competitive strategies in the context of Higher Education (HE) must be in alignment with the eight megatrends proposed by Naisbitt (1997) that are reshaping the world. These megatrends

include the dominance of the networks of entrepreneurs, the emergence of customer driven markets, the emergence of the Asian way rather than the western influence, the market-driven economy and policy, the emergence of super-cities, the utilization of high technology, the emergence of women, and the alteration of power from west to the east. This implies that if universities want to be successful, survivable and sustainable in the future, they must consider these megatrends in making and modifying their policies. Not only the proposed megatrends but also the international environment and the national policies and plans must be considered for initiating significant turnarounds. Focusing on Malaysia as one of the leading East-Asian countries in terms of providing HE and as emphasized by Ministry of Higher Education Malaysia, the main seven thrusts of Malaysian National Higher Education Strategic Plan (NHESP) rationalize the implementation of major transformations in Malaysian HE. These thrusts include:

- Widening the access and increasing equity.
- Improving the quality of teaching and learning.
- Enhancing research and innovation.
- Empowering HEIs.
- Intensifying internationalization.
- Enculturing the concept of lifelong learning.
- Reinforcing the delivery systems of Ministry of Higher Education Malaysia.

This implies that on the grounds of NHESP and the comprehensive plans in Malaysian Education Blueprint (Higher Education) or MEB (HE), some practices in Malaysian HE must be encouraged and facilitated by academic leaders and authorities of Ministry of Higher Education Malaysia. Some of these practices include democratizing through diversified meritocracy, developing human capital, making national policies on

the relation between industries and universities, improving the curriculum periodically, and improving interactive learning methodology, widening the usage of the English Language, and producing marketable graduates. developing a critical mass of researchers as well as research universities and world class centers of excellence.

These practices reflect the fact that Malaysian academic leaders must be agile, cautious, sensible, prudent, capable as well as competent. In addition, the practices stress on the significance of updated leadership training programs to assure leadership performance enhancement in Malaysian HE on the grounds of the framework provided by NHESP.

Background of the Study

This section covers the issues related to required capabilities and competencies for effective leadership performance in HE, the nature of HEIs, issues related to Malaysian HEIs and a trend analysis centering around HE.

academic capabilities and competencies. Leadership is synonymous with change and thus, leaders are change agents of the organizations during the period of change, growth and development (Avolio & Gibbons, 1988). Therefore, leadership is perceived as the most vital element for implementing effective change strategies (Bibeault, 1998) and the most contributing factor leading to successful change (Kotter, 1999). In other words, effective internal change processes that can cope with external change forces are established only within the organizations led by the people with strong leadership and managerial qualities (Kotter, 1999).

Focusing on HE in the current turmoil environment, it has been argued that managerial competencies to perform daily tasks and leadership capabilities to scan the

unstable, shifting, and insecure environments seem to be the two sides of one coin (Fullan & Scott, 2009) to enhance leadership performance.

Theoretically, a competent person may be defined as a skillful person who is expert at doing the job efficiently and professionally. In addition, a capable person refers to the one who possesses some qualities such as being able to work productively and skillfully in turmoil environments, being able to inspire others, having strategizing and envisioning qualities, and having a capability to see the big picture for enduring improvement and innovation achievements. This implies that competencies are mostly linked with management and capabilities are more related to leadership (Fullan & Scott, 2009; Scott et al., 2008).

The main capabilities for leading universities commendably, which have been proposed based on the findings of more than two decades of research about initiating and implementing successful transformations in HE, are personal, interpersonal and cognitive capabilities (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012; Scott, Tilbury, Sharp, & Deane, 2012). However, the other quality which is immediate, needed, and requisite in times of implementing change in any organization is change-oriented capability (Arvonen, 2008; Ekvall & Arvonen, 1991; Yukl, 1999, 2004, 2012; Yukl et al., 2002) since it is perceived and recommended as the pertinent leadership style for planning and implementing momentous and substantial transformations. Moreover, it covers a broader range of behaviors needed to initiate change programs comparing with charismatic and transformational leadership as the other two main theories of leadership and it can determine leadership performance more precisely (Yukl, 2004). One of the reasons and evidences that underpins this argument is associated with the information and knowledge dimension of leadership in HEIs. These entities as the learning organizations (Senge, 1990, 2006), are the main entities to produce and disseminate knowledge and to

collaborate with industries for meeting societal demands as well as promoting the societies. Indeed, while the four main approaches to leadership including trait, style, contingency, as well as transformational and charismatic approaches have not concentrated deeply on information and knowledge management aspects of leadership (Lakshman, 2007), change-oriented leadership through monitoring the environment and absorbing knowledge and information (Yukl, 1999, 2004, 2012, 2013; Yukl et al., 2002) and then building and sharing the new vision (Arvonen, 2008; Bakar & Mahmood, 2014; Ekvall, 1991; Ekvall & Arvonen, 1991; Yukl, 1999, 2004, 2012, 2013; Yukl et al., 2002) through processing this information deem to be even the more pertinent leadership style being exercised in universities.

Personal capability embraces a diversified set of behaviors clustered into three groups including self-regulation, commitment, and decisiveness; interpersonal capability has been categorized into two behavioral groups including empathizing and influencing; And diagnosis, strategy, as well as flexibility and responsiveness are the three components conceptualizing cognitive capability (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012).

Regarding change-oriented capability, many studies have focused on the behaviors under change-oriented leadership style. Through the earliest study, Ekvall and Arvonen (1991) suggested that change-oriented behaviors encompass four categories including promoting change and growth, risk taking, having a creative attitude, and having visionary qualities. Additionally, in another study (Arvonen, 2008), visionary qualities, creativity, action for implementation, and risk taking were proposed as change-oriented behaviors. It is noteworthy that after categorizing leadership behaviors in a hierarchical taxonomy including task, relation and change-oriented behaviors, Yukl et al. (2002) proposed that change-oriented behaviors comprise four elements including

monitoring the environment, risk taking, encouraging innovative thinking, and envisioning. However, in a more recent study, six group of behaviors including monitoring the environment, explaining the need for change, strategizing and envisioning, encouraging innovative thinking, risk taking, and facilitating collective learning were suggested to conceptualize change-oriented behaviors (Yukl, 2004). It is worth noting that in the latest study about the behaviors of change-oriented leaders, four categories were postulated including advocating change, envisioning change, encouraging innovation, and facilitating collective learning (Yukl, 2012).

Last but not least, with respect to required managerial competencies for efficient and well-organized management in university settings, Scott et al. (2008) categorized the competencies into generic and role-specific categories. Founded on this categorization, generic competency includes a set of skills required to manage University operations and a set of skills for self-organization. Additionally, role-specific competency encompasses skills associated with learning and teaching in HE.

academic leadership performance. In recent years, performance management and evaluation has been viewed as a core key for public sector reform (Zangouinezhad & Moshabaki, 2011). It has also been one of the most imperative factors in reinventing governmental movements (Holzer & Kloby, 2005). Pertaining to performance evaluation and assessment in HE, many issues have been raised and debated. For example, despite the fact that organizations through performance measurement plan future strategies, set performance targets for their human resources, and attain organizational objectives, it has been argued that performance management of universities and colleges was a major challenge for many countries since these organizations deliver a social return which is totally different from the economic return of business organizations (Jalaliyoon & Taherdoost, 2012). As a result, it has been proposed that the performance in the context

of HEIs must not be measured or managed using the tools developed in business sector (Walwyn, 2008). This implies that new performance management tools are required to be developed in order to establish educational objectives and standards, as well as to enhance the competitive advantages of universities in the globalized turbulent environment (Chen, Yang, & Shiau, 2006).

Additionally, in terms of identification and classification of leadership performance indicators in HE, many guidelines have been provided and several studies have been conducted. For example, some indicators such as access and participation, retention and progression, research, and employability have been set by The Higher Education Funding Council for England (HEFCE) as the performance indicators in England HE system (Bratti, McKnight, Naylor, & Smith, 2004). In another study on social performance of public and private universities, Othman and Othman (2014) propounded that social responsibility was important for universities to survive, or at least for enhancing their legitimacy.

With respect to operationalizing leadership performance effectiveness in HE, Montez (2003) in a research study developed an instrument to provide measurements and assess HE leadership from intrinsic and extrinsic points of view. Based on this study, effective HE leadership was operationalized based on five dimensions namely integral, relational, creditability, competence, and direction/guidance.

In addition, Zangoueinezhad and Moshabaki (2011) employed Fuzzy Multiple Attribute Decision Making (FMADM) approach and combined it with the knowledge-based university evaluation parameters to measure university performance on the four knowledge-based perspectives of a Balanced Scorecard (BSC). Through this analysis, thirty performance indicators were identified to operationalize university performance categorized into four perspectives of BSC (financial perspective, four indices; customer

perspective, eight indices; internal process perspective, five indices; and learning and growth perspective, thirteen indices). It may be stated that the application of BSC in performance evaluation in HE was also examined in another study (Chen et al., 2006) in Taiwan HE settings.

Moreover, focusing on the linkage between sustainability issues and leadership performance effectiveness in HE, Puukka (2008) proposed that sustainability in HE can be attained through economic, environmental, and social performance. Although these three aspects of university performance were truly significant, however it was likely that economic performance, comparing to other types of university performances, had grabbed a considerable attention of the scholars.

It is noticeable that in a few main recent studies, leadership performance in HE has been conceptualized on the premise of five dimensions including personal and interpersonal outcomes, learning and teaching outcomes, financial performance, recognition and reputation, and effective implementation (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012).

HEIs. University is the landmark of civilization advancement since it mirrors human higher learning in many disciplines of knowledge. From its establishment, it has been the seed of scholarship, leadership, and high culture (Hussin & Soaib, 2010). The concept of the university (Soaib & Hussin, 2012) may be summarized in Figure 1.1.

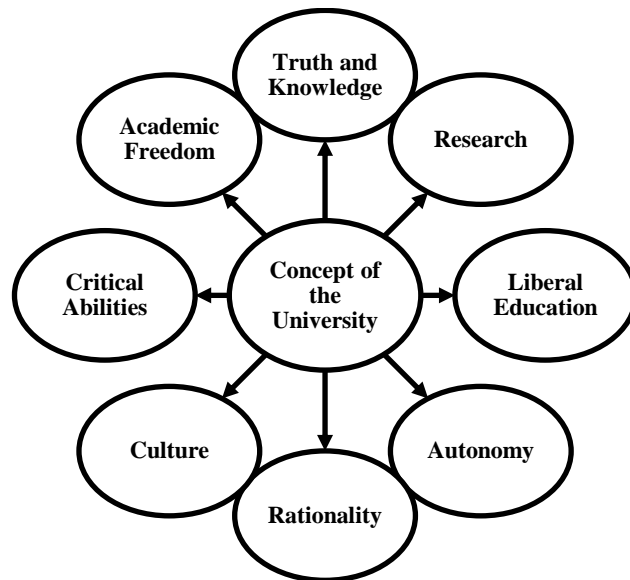


Figure 1.1. The Concept of the University

To properly understand the effectiveness and efficiency of the processes in HEIs, the characteristics of these entities need to be explored, identified, and recognized. For example, having ambiguous objectives, being influenced by the governmental rules and regulations, being dependent on external financial support, having decentralization of authority in decision making processes, and having a customer base have been suggested as some of the specific features of HEIs (Roueche, Baker, & Rose, 1989) .

Despite the fact that there are some debates indicating that the objectives and purposes of HEIs are blurred and ambiguous even to the employees working in these organizations (Fear, Adamek, & Imig, 2002), the following issues have been proposed as the purposes of HE (Dearing, 1997):

- Inspiring and enabling individuals to enhance their competences and abilities as highest as possible throughout life to grow intellectually, to be well-resourced, competent, and skillful for performing tasks; and to

be able to contribute to the society successfully and attain personal fulfilment.

- Fostering the application of knowledge in the economy and society through producing and understanding knowledge.
- Serving the needs of the flexible, sustainable and knowledge-based economy at different levels.
- Playing the major part in terms of shaping a democratic, civilized and inclusive society.

Focusing on outcomes of HEIs, it is remarkable that the nature of the outcome of educational organizations differ from the products of other types of organizations. This is consistent with the debate made by Roueche et al. (1989) where they posited that HEIs were completely distinctive and required permanent and continuous change in order to continue to exist and thrive. This implies that universities must be change-capable.

The concept and characteristics of change-capable universities have been proposed by Fullan and Scott (2009). Some of these features include being undefensive, evidence-based, strategically networked, and outcomes-focused; operating in a responsive, collaborative, team-based, and focused fashion; ensuring that all meetings are justified, cost-effective, fit-for-purpose, expertly chaired, and action-oriented; and making certain that complex and hierarchical systems are used only when justified.

HE in Malaysia. In general, Malaysian HE includes all post-secondary education which lead to the award of certificates, diplomas and degrees. Formerly, public HIEs dominated the HE market, but the adoption of the Private Higher Educational Institutions Act (PHEIA) in 1996 liberalized the sector and thus, private universities may confer degrees. Foreign universities were also permitted to establish branch campuses in Malaysia (Othman & Othman, 2014).

While there is small overlap among the characteristics, features, and functions of Malaysian public and private universities, most these issues are totally different. Malaysian public universities are research-based, more self-governing and able to offer degree and postgraduate programs. Regarding private HEIs, two categories of private universities were established under the 1996 Act in Malaysia. The first cluster includes those without “University” or “University College” status, known as private colleges. On the other hand, the second cluster includes institutions which have “University” or “University College” status and are referred to as private universities. Under this new act, only institutions with the “University” or “University College” status were allowed to confer degrees (Wilkinson & Yussof, 2005).

It is worth noting that on the account of the adoption of the 1996 Act, several major corporations were licensed to establish and run private universities. For example, the Multimedia University was established by Malaysian Telecom, Universiti Teknologi Petronas was established by Petronas Company and Universiti Tenaga Nasional was established by the Electricity Board Corporation. In addition, two distance-learning universities were also founded in the private sector and by the late 1990s, four foreign universities opened their branches in Malaysia through a collaboration with privately owned institutions (Sohail & Daud, 2009).

Although private sector involvement in the tertiary level of education is still a new phenomenon, it has proved that it can accommodate the increasing demand for HE in Malaysia. Private universities have also helped to reduce the total public subsidy to HE and to protect foreign exchange by limiting the outflow of Malaysian students for overseas education. Nevertheless, there is one main concern regarding the cost of education provided by the private universities. In other words, there have been concerns

that places in Malaysian private universities are accessible only to rich students (Wilkinson & Yussof, 2005).

Focusing on the characteristics of Malaysian private and public universities, Wilkinson and Yussof (2005) conducted a study to compare these universities in terms of their enrolments, costs, facilities and quality of HE provision. The results showed that public universities were more efficient in satisfying public demands in terms of many factors such as quality of the provided education, the superiority of their facilities in both quantity and quality, employing and having a more senior and better qualified staff, the superiority in terms of knowledge development, and having better campuses and nicer surroundings. Additionally, with respect to the society perceptions about HE, the results revealed that the society perceived HE in public universities as more satisfactory. The results of the study also uncovered that a typical Malaysian family would only choose a private HE after the failure of every effort to enter the public systems. The other concern of Malaysian families was debated to be about the quality of education since many of the private colleges were owned and run by business companies whose main aim was to maximize profits. Thus, in brief, the study shed light on the fact that public universities deemed to be more efficient in satisfying the public demands for a superior quality of education.

It is noticeable that since Malaysian HEIs, in response to the globalization, technological, and demographic turnarounds taking place in developing countries, need to develop appropriate models to meet the future economical and societal expectations, needs, and standards which have always been central to Malaysian education policy. Hence, universities must be expanded, privatization of universities must be initiated, competitive strategies must be enhanced, and improvement must be efficient and effective (Azman, Jantan, & Sirat, 2011).

The next issue which deserves to be addressed here is about the challenges that Malaysian universities encounter. These challenges necessitate the practice of an appropriate leadership style in Malaysian HE settings to undertake transformations to solve these problems. Regarding these challenges some studies have been carried out. For example, funding and financial crisis seemed to be a major challenge for Malaysian universities since they were under intense pressure to reorganize and look for diverse sources of revenue instead of just depending on state funding (M. N. N. Lee, 2004). In terms of globalization and comparative strategies, it has been suggested that both public and private Malaysian HEIs have to adopt innovative and creative marketing strategies in order to compete for local and international students' enrolment through improving their international reputation and ranking (Othman & Othman, 2014). This proposition is exactly consonant with some change-oriented qualities such as having a creative attitude (Arvonen, 2008; Ekvall & Arvonen, 1991) or encouraging innovative thinking (Yukl, 1999, 2004, 2012, 2013; Yukl et al., 2002). This is also in line with Malaysia's vision to become an industrialized nation by the year 2020. Indeed, Malaysian universities are viewed to be responsible for the task of producing qualified workforce that fulfills the requirements of the future and hence, universities and the government must work together to increase economic growth of the nation (Thomas, Francis, Shahid, & Jani, 2015).

The other main challenge as cited by Thomas et al. (2015) is about standards as well as expectations from Malaysian HEIs. In addition, multiple roles taken by the academicians deem to be the next challenge since they are expected to conduct research, publish material, present papers, and engage with students and community service activities.

Malaysian universities are also expected to adapt to their changing roles in a knowledge-based society. With Malaysia's transition to a knowledge-based economy, the

development of the university sector and the requirements of economic growth have been linked by the policy makers in order to establish a world-class university system to make Malaysia a regional education hub, and transforming it into a knowledge-based economy (Sohail & Daud, 2009).

It is notable that one of the main steps to attain this desired goal has been the establishment of the Higher Education Leadership Academy (AKEPT) in January 2008 as the main organization focusing on leadership in Malaysian HE. Strengthening the governance and organization of Malaysian HEIs, generating a culture of creative and innovative solutions to the critical issues on leadership in HE, providing innovation in crafting learning and teaching strategies to improve the quality of learning among students, and branding AKEPT as a regional and international leadership institution are among the purposes of this organization. In terms of envisioning, AKEPT wants to be a globally referred, relevant and respected institution for HE leadership. To achieve this vision, four main missions have been defined and set by AKEPT including enhancement of leadership in HEIs, engagement of leaders in academic settings in achieving the national transformation agenda, promotion of soul driven leadership in HEIs, and collaboration with stakeholders in the development of HE leadership at local, regional, and global level. In addition, some issues such as resilience, excellence, adaptability, professionalism, innovation, and teamwork have been proposed as the values of AKEPT. It is remarkable that chairpersons and board of directors of public and private universities, vice-chancellors, deputy vice-chancellors, deans and deputy deans, directors of academic centers, heads of departments, senior university administrators as well as top, senior and middle managers of the Ministry of Higher Education and relevant central agencies have been suggested to be targeted and focused by this organization (For more info, please visit AKEPT website @ <http://akept.mohe.gov.my>). To summarize the issues regarding AKEPT, it may be stated that AKEPT plays a few significant roles in the field of HE

leadership in Malaysia. The first role is about pursuing Leadership Critical Agenda for attainment of desired goals of NHESP; the second centers around providing relevant and pragmatic training programs, advices as well as facilitations to HEIs; the third is about promoting and facilitating a culture of research and publication on issues and challenges in HE; the fourth is related to establishing a structural framework and a talent pool for HIEs and providing advices on succession planning; the fifth focuses on inculcating soul driven leadership skills among future leaders in academic settings; and the last strategic role is about widening and encouraging regional and international collaborations.

Lastly, it is remarkable that as elaborated comprehensively by Knight and Sirat (2011) in a comparative study focusing on 6 countries which have plans to become educational hubs, Malaysia with two main initiatives namely the establishment of EduCity Iskandar, located next to Singapore, and the development of Kuala Lumpur Education City (KLEC) in Klang Valley, located in south of Kuala Lumpur, has demonstrated a seriousness in terms of positioning itself as one of the main educational hubs in the region. This is considered as one of the main strategic initiatives as well since Malaysian HEIs, in response to the globalization, technological, and demographic turnarounds, which are taking place in developing countries, need to develop appropriate models to meet the future economical and societal expectations, needs, and standards which have always been central to Malaysian education policy. Hence, universities must be expanded, privatization of universities must be initiated, competitive strategies must be enhanced, and improvement must be efficient and effective (Azman et al., 2011).

trend analysis and HE. As mentioned earlier, Naisbitt (1997) proposed eight reshaping-the-world megatrends. These megatrends have a significant impact on different types of organizations such as universities. As a matter of fact, they necessitate

undertaking transformations in HEIs to stay viable and successful. For this reason, these entities must be managed and led efficiently and effectively.

The first megatrend is the dominance of the networks of entrepreneurs which is consonant with the findings of Kezar (2014) about the importance of formal and informal networks in universities in times of implementing change programs. Building networks is also consistent with one of the change-oriented behaviors identified by Yukl (1999, 2004, 2012) as developing relationships with people outside the work unit in order to get agreements on implementation of significant turnarounds.

The emergence of customer driven markets, as the second megatrend, is in alignment with the identification of the needs of different stakeholders in HE. This is also in line with the findings of Segall and Freedman (2007) about the current challenges of HE regarding the importance of student-centered and businesslike management as well as accountability strategies from the perspective of educational leaders. Indeed, the expectations of the stakeholders must be explored so that HEIs would be able to satisfy them.

The third megatrend is the emergence of the Asian way rather than the Western influence. This megatrend, to a considerable extent, reflects the importance of cultural issues. Universities ought to identify the characteristics of eastern cultures and while emphasizing on ethical and moral issues, they must integrate the main elements of eastern cultures in their processes. This megatrend is also consonant with the argument made by Daniel (2007) where he stated that the university enrolments in China had been doubled from 2000 to 2003 and by 2005, this country with 16 million students had overtaken the United States as the world's largest HE system. Additionally, it is in line with the proposition that Malaysia had illustrated the same trend since this country had planned to

increase the enrolments in universities by the year 2011 from 600000 to 1.6 million (Daniel, 2007).

In terms of market-driven economy and policy, as the fourth megatrend, not only the process of effective policy and decision making with concentration on economic issues must be examined in the universities and colleges, but also the way by which HEIs can make policies towards sustainability needs to be explored. This is consonant with the findings of Scott et al. (2012) in their study about future challenges of HE. They contended that the emergence of new world players, an associated shift in the power balance, and the operation of the world economy may be considered as one of the main economic challenges that universities would encounter. This megatrend also aligns with the findings of Segall and Freedman (2007) about the current challenges of HE since the educational leaders interviewed by them had discussed the importance of market-oriented approaches in leading universities.

The emergence of super-cities, as the fifth megatrend, dictates the preparation of the universities to deal with the demands of super-cities with their opaque environment through cultivating next generation of leaders to solve sustainability challenges of the future (Scott et al., 2012). This megatrend is also in line with the idea that universities and society need each other (Fullan & Scott, 2009).

The importance of utilization of high technology, as the sixth megatrend, is so obvious that nowadays, ICT is considered as the main change agent in education (Oliver, 2002). Removing the obstacles and impediments of ICT usage in HE as well as developing strategies to advance ICT usage in universities are some of the most crucial and recent debates in this area. This megatrend is also consistent with the IT revolution as one of the main broad change forces identified by Fullan and Scott (2009). They argued that the developments in ICT were relentless. In addition, they posited that quick influx

of ICT into daily lives and the significant growth in computing power and internet speed were posing significant challenges for HEIs.

The seventh megatrend is the emergence of women, especially in top positions of organizations. Many studies have focused on women leaders in the context of HE (Eggins & Education, 1997; Morley, 2005; White, 2003) which indicate the relevancy of this megatrend to HE context. However, this megatrend suggests the study of the characteristics of women leaders who can initiate and implement radical changes. The emergence of women is closely related to the importance of diversity in different types of organizations including universities. Hence, this megatrend is in line with the issues of “Fractious Divisions” (Fullan & Scott, 2009) as another global challenge for HE. As said by these scholars, there are evidences which support the rise of divisions in societies such as the growing gap between the poor and the rich, the differences between generation X and generation Y, the divide between left and right, and other evidences related to the differences between the male and the female which may be observed in HEIs.

As the eighth megatrend, the alteration of power from west to the east implies that many opportunities will be brought to the universities by the virtue of such power. It also aligns with the facts provided by Daniel (2007) about the increase of enrolments in China and Malaysia. Notably, this power would be an important factor in managing transformation programs in universities.

Statement of the Problem

Universities have been viewed as fascinating entities since they reflect many aspects of the society. In fact, they encompass many dimensions of the society such as social, cultural, political, economic, commercial, educational, historical, moral, spiritual, emotional, intellectual, legal, medical, technological, defense, international, and civility.

This is the main reason for regarding them as the meeting and melting place of all sorts (Soaib & Hussin, 2012).

These organizations in all around the world are encountering different challenges. Many studies have focused on identifying HE challenges and proposing recommendations to shatter these barriers in the 21st century. A few of the recently debated challenges include the growth of private fundraising and grant-seeking efforts (Keener, Carrier, & Meaders, 2002), intensifying institutional accountability to legislative and governing authorities (Harbour, 2003), environmental challenges for universities (Malm, 2008), main leadership issues for HIEs (Fullan & Scott, 2009), and the major challenges for universities towards sustainability (Scott et al., 2012).

Focusing on Malaysia, a limited number of studies have been carried out to address the main issues and challenges in Malaysian HE. The selected research works include the one focusing on income and employment multipliers in Malaysian HE (Yen, Ong, & Ooi, 2015), the privatization of HE, corporatization of public Malaysian HEIs, as well as the challenges that Malaysian universities encounter in terms of quality assurance, diversifying sources of funding, and internationalization of HE (M. N. N. Lee, 2015), and the relationship between the quality culture and workforce performance in Malaysian HE (Ali & Musah, 2012).

Given the existence of the global challenges and the fact that Malaysian HE is undergoing significant transformations on the grounds of NHESP, MEB (HE), University and University College Act (UUCA), and the policies made by AKEPT, as have been reflected in its website, it is crucial to identify the main issues in Malaysian HE namely priorities, values, challenges, and solutions from the perspectives of academic leaders. Also, the most pertinent leadership style needs to be adopted by academic leaders to promote values, shatter the barriers, and lead universities commendably. Hence, the

relevancy and appropriateness of leadership behaviors and practices must be examined in Malaysian HE environment. Notably, as discussed by Yukl (2004), change-oriented leadership has been proposed as the most appropriate option comparing with other main relevant theories of leadership since it covers a wider range of behaviors and is a more appropriate leadership style to determine leadership performance.

In the next attempt, studies focusing on change-oriented leadership were reviewed. Based on this review, some evidences were identified in terms of theorizing, examining, application and practice of change-oriented leadership in healthcare organizations, religious organizations, business sector, and educational institutions, especially in Europe (Andersen, 2010; Ekvall, 1991; Ekvall & Arvonen, 1991, 1994; Ekvall & Ryhammar, 1998, 1999; Gil, Rico, Alcover, & Barrasa, 2005; Golm, 2009; Hansson & Andersen, 2007; Holloway, 2013; Ortega, Van den Bossche, Sánchez-Manzanares, Rico, & Gil, 2013; Paglis & Green, 2002; Ryhammar & Smith, 1999; Sellgren, Ekvall, & Tomson, 2006, 2008; Vardaman, 2013; Yukl, 1999, 2004, 2012; Yukl et al., 2002).

However, not many evidences were identified regarding the practice of change-oriented leadership to shatter the barriers of HE at global level as well as in Malaysian HE. In addition, although innovation and adaptation as the two performance determinants of change-oriented leadership behaviors (Yukl, 2004) had been introduced as the two values of AKEPT, no evidence of studying these concepts in Malaysian HE was identified either. Moreover, leadership capabilities and managerial competencies, required to lead Malaysian universities effectively, had not been scrutinized which indeed, was consistent with the proposition of Bryman (2007) in terms of lack of research related to leadership performance in HE.

The other main gap in the field was unavailability of a comprehensive instrument for conceptualization of qualities of Malaysian academics. Despite the fact that the development of the survey instrument, which had been used in the ALTC study (Scott et al., 2008), was a great contribution to the field of educational leadership, however, most of the change-oriented behaviors had not been operationalized as the qualities needed to manage significant turnarounds in HEIs. In addition, Scott et al. (2008) in their study focused on public universities to test and verify the conceptual framework of the study and as a result, it deemed to be necessary to retest the proposed framework in a different context such as Malaysian public and private HE context.

To summarize, the following issues were the main gaps in the literature which through this study would be bridged:

- Insufficient research works about capabilities and competencies of academic leaders and the contribution of these variables to leadership performance in Malaysian HE.
- Lack of comparative studies to compare academic leaders in Malaysian public and private universities in terms of leadership and managerial qualities as well as leadership performance with academic leaders in other countries.
- Insufficient studies focusing on change-oriented leadership as well as performance determinants of this type of behavior in Malaysian HE.
- Unavailability of a comprehensive localized instrument to measure leadership capabilities, managerial competencies, and leadership performance in Malaysian HE context.
- Limited attention given to private universities in previous similar research studies.

- The need to test the scales of leadership and managerial qualities introduced based on Academic Leadership Capability Framework and the developed change-oriented capability scale in Malaysian context.
- The need to integrate change-oriented capability into the Academic Leadership Capability Framework.
- Limited research about identifying the main issues and challenges in Malaysian HE.

In corollary, by bridging the gaps mentioned in this section, the policy makers would have a deeper insight about the characteristics of effective leadership in the context of change in university settings in Malaysia. In addition, they can plan and implement necessary strategic transformations as well as relevant and pragmatic leadership development programs towards leadership effectiveness in HEIs, attain the predefined objectives, promoting values, and shattering the main barriers.

Related Theories

There are seven leadership theories and models that underpin the constructs of the proposed conceptual framework of this study. They include change-oriented leadership theory, tridimensional leadership theory, CRT, leadership traits theory, leadership skills theory, leadership styles theory, and the Academic Leadership Capability Framework.

change-oriented leadership theory. There are two main studies regarding this new type of leadership. The first study was conducted by Ekvall and Arvonen (1991). During their study, this new leadership style was emerged through a Factor Analysis (FA). On the other hand, this study resulted to the existence of three factors in terms of leadership behaviors including production-centered, employee-centered and change-centered leadership styles. On the grounds of this study, change-oriented behaviors were classified into four classes namely promoting change and growth, having visionary

qualities, having a creative attitude, and risk taking. It is notable that this new dimension was supported empirically as well (Ekvall, 1991).

The second main study regarding theorizing change-oriented leadership was carried out by Yukl (1999). In this study, the FA produced a clear factor structure for three leadership behaviors including task-oriented, relationship-oriented, and change-oriented behaviors and in other words, the results confirmed the findings of Ekvall and Arvonen (1991) and Ekvall (1991).

Despite the fact that some other classifications have been suggested for this behavior (Arvonen, 2008; Yukl, 2004; Yukl et al., 2002), in the most recent taxonomy (Yukl, 2012), four constructs including advocating change, envisioning change, encouraging innovation, and facilitating collective learning were proposed as the main dimensions of change-oriented behaviors.

tridimensional leadership theory. Organizations with a turbulent environment and a variety of missions need adaptable and flexible leaders who can adapt to different, unsettled, and shifting situations. In accordance with this, Yukl (2004) developed tridimensional leadership theory on the premises of earlier theories of leadership. This theory covers a broad range of behaviors and describes mediating effect of performance determinants on the relationship between leadership behaviors and unit effectiveness. It also identifies contextual variables that ascertain the type of leadership behavior which is most applicable in specific situations.

Based on tridimensional leadership theory, leadership behaviors comprise three styles including task-oriented, relation-oriented and change-oriented behaviors. Performance determinants involve efficiency and reliability, human resources/relations as well as innovation and adaptation. Also, the type of the organization, the work unit,

and the amount of environmental volatility and uncertainty have been considered as the situational variables.

The mediation effects of efficiency and reliability, human relations/resources, and innovation and adaptation on the relationship between different leadership styles and group effectiveness, and the point that effective leaders integrate leadership styles on the grounds of specific situation are a few of the propositions in this theory.

CRT. One of the recent theories of situational model of leadership was developed by Fiedler (1986) and Fiedler and Garcia (1987) which deals with cognitive resources of leaders. This theory, known as CRT, examines the condition in which intelligence and experience of leaders as their cognitive resources contribute to the group performance of the followers (Yukl, 2013).

Thus, CRT may be considered as one of the most pertinent and relevant theories to this study since cognitive resources are regarded as very important criterion in times of recruiting university managers. Indeed, having the quality to use previous experience to understand what will be happening and when the existing situation in university settings changes unexpectedly (Fullan & Scott, 2009) is perceived as crucial.

According to CRT, a complex interaction among two leader traits, one type of leader behavior, and two aspects of the leadership situation ascertain the performance of leader's group. The two traits are intelligence and experience, directive leadership is the type of the leader's behavior and the two leadership situations include interpersonal stress and the nature of the group's task (Yukl, 2013).

In terms of contribution of CRT to implementing significant change solutions in HE, it is worth noting that initiating and implementing turnarounds in universities entails leaders to have a distinct profile of emotional intelligence as well as cognitive ability.

Moreover, monitoring and responding to the rapidly changing environments, as one of change-oriented behaviors (Yukl, 1999, 2004, 2013; Yukl et al., 2002), is also related to emotional as well as cognitive capacities of leaders (Fullan & Scott, 2009).

leadership traits theory. Leadership traits have been described as a clear combinations of firm personal qualities such as personality, character, incentives, cognitive skills, and proficiencies that bring up a reliable form of performance or stable leadership efficiency across various groups and organizational situations (Zaccaro, 2007). Trait-based approach is the first existed theory on leadership. Many studies were conducted focusing on leadership traits. The main purpose of these studies were to make understanding about what causes certain individuals to become great leaders and in other words these attempts concentrated on recognizing the inborn talents and characteristics owned by great social, political, and military leaders (Northouse, 2013).

For example a different sets of leadership traits have been proposed by Stogdill (1948, 1974), Mann (1959), Lord, De Vader, and Alliger (1986) and Kirkpatrick and Locke (1991). However, in a more recent study, a new set of necessary traits for leadership effectiveness namely intellectual abilities, extraversion, conscientiousness, emotional stability, openness, agreeableness, motivation, social as well as emotional intelligence, self-monitoring, and problem solving competencies were proposed (Zaccaro et al., 2004). Moreover, Northouse (2013) identified that intelligence, self-confidence, determination, integrity and sociability were common traits in many of the trait theory studies and also stressed the importance of emotional intelligence and the factors constructing personality as other important leadership traits.

leadership skills theory. Analogous to trait-based approach, skills theory focuses on the leaders in the leadership literature. However, the emphasis is on competencies and skills of leaders rather than the innate traits for effective leadership (Northouse, 2013).

Many studies focused on identifying the required leadership skills for effectiveness. Katz's study (Katz, 1974) may be considered as the first main research work which led to the proposition of three sets of skills on the grounds of different managerial levels. These skills include technical, human, and conceptual skills.

The other important study with regard to leadership skills was conducted by Mumford et al. (2000) which focused on leader's abilities to solve complicated organizational problems. On the basis of the model proposed by Mumford et al. (2000), three sets of skills including problem-solving skills, social judgment competencies, and knowledge mediate the relationship between individual attributes of leaders with leadership outcomes. General cognitive ability, crystallized cognitive ability, motivation, and personality were suggested to be under individual attributes category and effective problem solving skill and performance were categorized under leadership outcomes. In addition, career experiences were proposed to have an impact on leader's skills and environmental influences, as the final component, were proposed to be representatives of internal and external factors that lie outside the skills of leaders (Northouse, 2013).

leadership styles theory. The focus of style-based approaches in leadership is on the behaviors of leaders. In other words, it is about what leaders do and how they take necessary actions. This approach has expanded the study of leadership to encompass actions taken by leaders towards subordinates in different contexts. Basically, scholars in the field of leadership in the first studies identified two sets of behaviors which were task and relationship behaviors (Northouse, 2013).

As cited by Arvonen (2008), these two leadership behavior dimensions had been labeled differently by the researchers such as democratic and authoritarian (Lewin, 1950), employee-centered and job-centered supervision (Likert, 1961), consideration and initiation of structure (Bass, 1960; Fleishman & Harris, 1962), concern for people and

concern for production (Blake & Mouton, 1964, 1985), task-oriented and relationship-oriented (Hersey & Blanchard, 1988), directive and participative leadership (Bass & Stogdill, 1990), and finally boss-centered and subordinate-centered behaviors (Tannenbaum & Schmidt, 1973). It is notable that in a few more recent studies, three leadership behaviors were proposed including task-oriented, relations-oriented and change-oriented behaviors (Arvonen, 2008; Ekvall & Arvonen, 1991; Yukl, 1999, 2004; Yukl et al., 2002). However, in the most recent study with respect to categorizing behaviors of leadership (Yukl, 2012), a set of four behavior groups were proposed including task-oriented, relations-oriented, change-oriented and external behaviors. It is noteworthy that the main purpose of this approach has been to identify the way by which these behaviors are integrated by leaders to influence subordinates in their efforts to reach organizational objectives (Northouse, 2013).

academic leadership capability framework. Scott et al. (2008) conducted a study focusing on learning leaders in HE through a partnership between University of Western Sydney and the Australian Council for Educational Research (ACER). The study was funded by the Australian Learning and Teaching Council (ALTC). The ALTC study was guided by a conceptual framework which had been built on another framework already validated in other studies (Scott, 2003; Sullivan & Rosin, 2008; Vescio, 2005). This framework, shown in Figure 1.2, was tested and revalidated during the study (Scott et al., 2008) and was consistent with HE leadership literature. The key elements which constituted the framework were the ones that count in the turnaround HE leadership (Fullan & Scott, 2009).

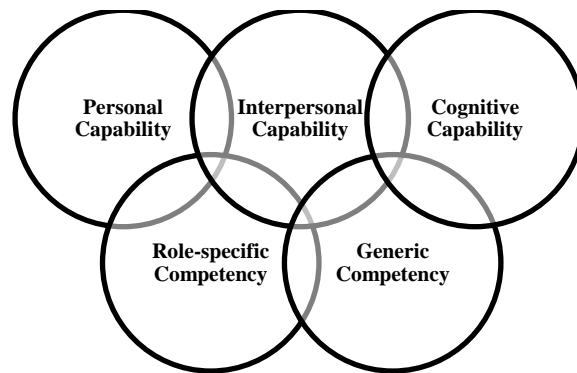


Figure 1.2. Academic Leadership Capability Framework

Based on this framework, three elements including personal, interpersonal, and cognitive capabilities construct the leadership capability dimension. These dimensions are supported by generic and role-specific competencies as two linked forms of skills and competencies. As depicted in this framework, all the five elements are essential for leadership performance effectiveness in academic environments (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012).

Academic Leadership Capability Framework was used to guide two other recent studies regarding sustainability in HE (Scott et al., 2012) and another study focusing on tertiary education leadership in Australia and New Zealand (Scott & McKellar, 2012) which had been sponsored by the Association for Tertiary Education Management (ATEM) and LH Martin Institute for Leadership & Management.

Conceptual Framework

A set of change-oriented qualities extracted from an extensive literature review (Arvonen, 2008; Ekvall, 1991; Ekvall & Arvonen, 1991; Yukl, 1999, 2004, 2012, 2013; Yukl et al., 2002) and the Academic Leadership Capability Framework (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012) construct the main structure of the conceptual framework of the study shown in Figure 1.3.

Not only the capabilities and competencies proposed in the Academic Leadership Capability Framework are required for leadership performance in HE (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012), but also change-oriented capability plays a significant part in enhancement of performance effectiveness of leaders (Gil et al., 2005; Ortega et al., 2013; Yukl, 2004), particularly in the turmoil environment being influenced by many external factors. Among these external factors, the megatrends that are reshaping the world, strategic plans, rules, regulations, and challenges may be stated as the ones with high impacts on university leadership, management, and governance.

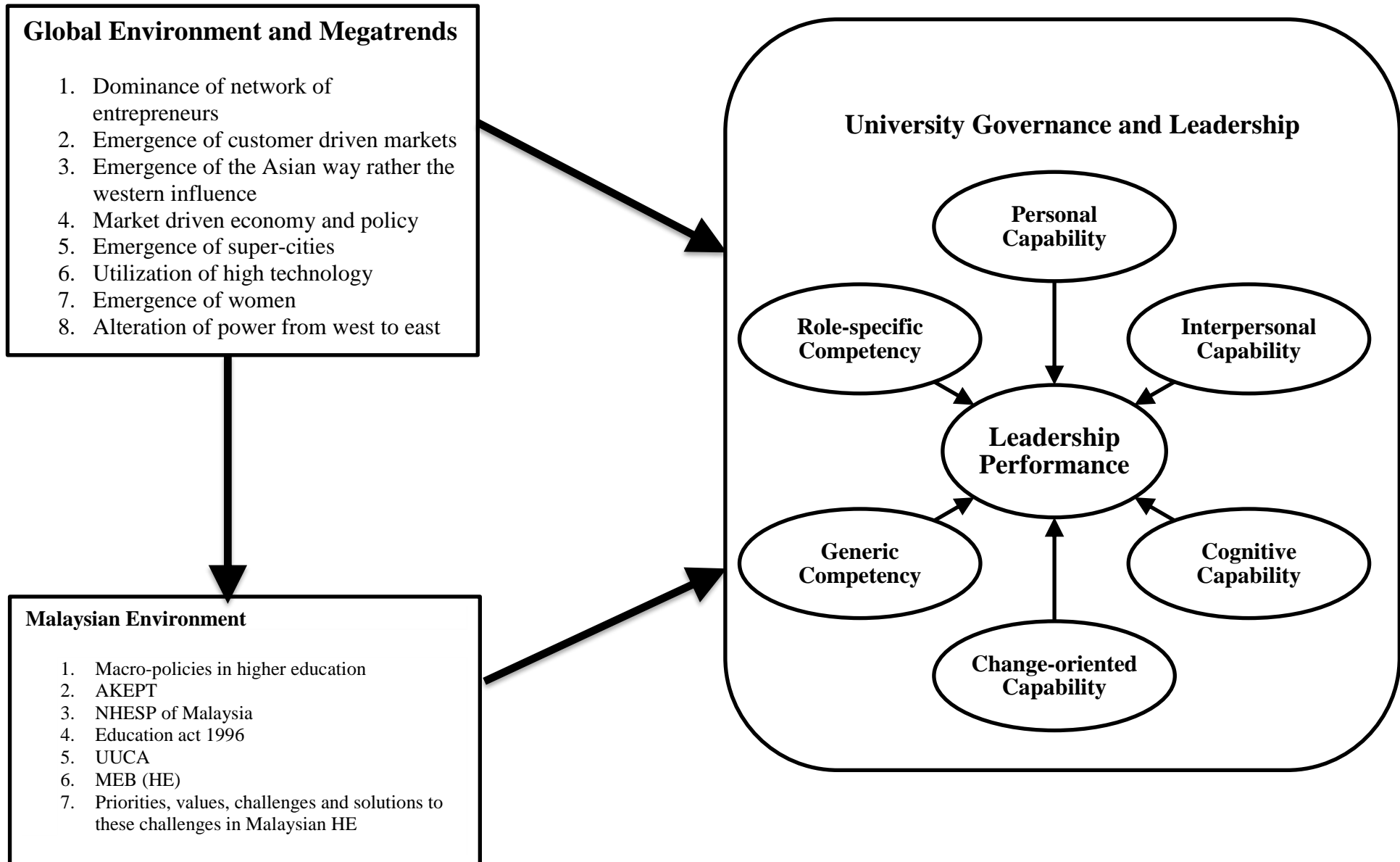


Figure 1.3. Conceptual Framework

All the components of the conceptual framework are underpinned and supported by some main leadership theories. In summary, personal capability is underpinned by leadership traits theory where the focus is personality and innate traits of the leaders towards effectiveness. Interpersonal capability is supported by leadership styles theory and human-oriented leadership theory for their emphasis on human elements and relationships with human resources in organizations.

In addition, CRT, to a large degree, and traits theory, to some extent, are the most appropriate theories to support cognitive capability. Regarding change-oriented capability, change-oriented leadership theory may be noted as the main theory to underpin this dimension. The two competencies dimensions are also underpinned by leadership skills theory and task-oriented leadership theory since in general, the focus of these theories are on skills and competencies of leaders to deal with managerial challenges and resolve them.

Lastly, leadership performance is underpinned by all the mentioned theories in the “Related Theories” section. It is remarkable that the leadership skills theory may be considered to support personal, interpersonal and cognitive capabilities as well since these capabilities have been addressed by leadership skills theory.

Rationale of the Study

There are several issues that rationalize this research to be carried out in the context of Malaysian HE. These include:

- Given two issues namely enhancing leadership performance in HEIs and engaging academic leaders in achieving the National Transformation Agenda as the two of the missions of AKEPT,

conducting a study about the most significant leadership theories for initiating, implementing and maintaining major turnarounds and transformations in universities will be crucial.

- Collaborating with stakeholders at global, regional and local levels for enhancing leadership in HE as another mission of AKEPT entails an accurate and just-in-time environmental information scanning as one of the main capabilities of change-oriented leaders (Yukl, 1999, 2004, 2013; Yukl et al., 2002). This implies conducting studies focusing on the practice of change-oriented leadership behaviors in Malaysian academic settings.
- While creating and promoting a culture of research on issues and challenges of Malaysian HE has been defined as another role of AKEPT, carrying out a study focusing on change-oriented leadership, which covers a wider range of behaviors comparing with transformational and charismatic leadership (Yukl, 2004), would be a more effective way in addressing and shattering the barriers of HE in Malaysia.
- The current study is in alignment with the values of AKEPT Since adaptation and innovation, as the two performance determinants of change-oriented leadership (Yukl, 2004), have been defined as the two of the values of AKEPT.
- AKEPT, as the main organization in Malaysia with respect to leadership in HE, has a target group which is to a considerable degree analogous to the target population of this study. In other words, many

studies must be carried out focusing on this target group to enhance leadership performance in Malaysian HE settings.

- Yukl (2004) suggested to conduct a variety of research methods to test the basic propositions of tridimensional leadership theory which encompasses task-oriented, human-oriented and change-oriented leadership. In addition, Ekvall and Arvonen (1991) suggested to conduct studies about change-oriented leadership in different context and make comparisons between different functions, levels, and educational groups.
- The Academic Leadership Capability Framework (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012), as a new model of capabilities and competencies required to lead universities in the context of change, needs to be tested and verified in other settings. Particularly, it should be tested in both public and private sectors.
- This study is undertaken on the grounds of the limited attention given to describe the effect of change-oriented leadership style displayed by academic leaders on their leadership performance effectiveness. In other words, although some studies were identified in terms of theorizing and application of change-oriented leadership in different sectors, but there is limited research surrounding change-oriented behaviors of academic leaders. Additionally, there is a scarcity of research about leadership performance in HE (Bryman, 2007).
- Identification, selection, and development of leaders in HEIs have not been generally well-managed (Fullan & Scott, 2009) and many studies support this claim (Aziz et al., 2005; Bass, 1985; Debowski

& Blake, 2004; Gmelch, 2000, 2002; Gmelch & Miskin, 1993; Montez, 2003). Hence, leadership selection and training must become the new priorities for HE (Fullan & Scott, 2009). Therefore, by identifying the main leadership practices in Malaysian HE, the policy makers and authorities in the Ministry of Higher Education Malaysia may be able to focus on the most important dimensions of these practices in terms of training current leaders or fostering future leaders. It is noteworthy that one of the main roles of AKEPT as well as one of the core objectives of this organization have been defined to provide relevant and pragmatic training programs for leaders.

- Due to insufficiency of research in Malaysian context, conducting a study to profile Malaysian academic leaders and comparing them in term of required capabilities, competencies, and leadership performance effectiveness will help to identify the similarities and differences between leaders in public and private HE sectors in Malaysia.
- Comparing the findings of this study with the findings of two other studies focusing on HE systems in Australia and New Zealand in terms of capabilities, competencies, and leadership performance effectiveness would provide insights about the current situation of Malaysian public and private HEIs comparing with two of the best countries in terms of HE provision.
- Through this large-scale study, the main priorities and values of Malaysian academic leaders as well as the main HE challenges and

solutions to these barriers from the perspectives of Malaysian academic leaders will be identified.

- This study may stimulate similar studies focusing on capabilities and competencies in other sectors of Malaysian education system through various methodological approaches.

Research Objectives

Through this study, in line with the review of the literature and based on the statement of the problem as well as the conceptual framework of the study, three main research objectives were developed. These objectives include:

1. Descriptively identifying the prominent elements of capabilities and competencies in explaining leadership performance as well as the main leadership performance indicators in Malaysian HE context.
2. Determining the extent to which different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian academic context.
3. Investigating the current issues (priorities, values, challenges and solutions to these challenges) in Malaysian academic context from the perspectives of academic leaders.

Research Questions

On the grounds of the objectives, three main research questions were formulated to be answered in this study. It is noticeable that research questions 2 and 3 had 4 sub-questions.

1. What are the descriptively prominent elements of capabilities and competencies in explaining leadership performance as well as the main leadership performance indicators in Malaysian HE context?
2. To what extent different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian academic context?
 - i. To what extent different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian HE system?
 - ii. To what extent different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian public research & comprehensive HEIs?
 - iii. To what extent different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian public focused HEIs?
 - iv. To what extent different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian private focused HEIs?
3. What are the main issues in Malaysian academic context from the perspectives of academic leaders?
 - i. What are the priorities in Malaysian HE and its sectors from the perspectives of academic leaders?
 - ii. What are the values in Malaysian HE and its sectors from the perspectives of academic leaders?

- iii. What are the challenges in Malaysian HE and its sectors from the perspectives of academic leaders?
- iv. What are the solutions in Malaysian HE and its sectors from the perspectives of academic leaders?

Significance of the Study

This study, on the grounds of the rationales provided in the “Rationale of the Study” section, is significant theoretically and practically for the following reasons:

- The findings of this study are beneficial for AKEPT since the study is in line with two missions of this organization in terms of undertaking national transformations in HE and the enhancement of academic leadership performance.
- This study relates collaborating with stakeholders as one of missions of AKEPT with scanning the external environment as one of the main capabilities of change-oriented leaders. This indicates that practicing change-oriented leadership in Malaysian HE is consistent with this main mission of AKEPT.
- Through this study, the main relevant leadership capabilities and managerial competencies required to address and shatter the barriers of Malaysian HE would be identified.
- The findings of the study about innovation and adaptation capabilities of the leaders would be beneficial in terms of strengthening, reinforcing, and reinvigorating of these concepts as two of the values of AKEPT.
- The findings of this study with the target population of vice-chancellors, deputy vice-chancellors, deans, directors, deputy deans,

deputy directors, heads of departments and professors without any official position in entire Malaysian HE would be beneficial for AKEPT to make efficient and informed policies in terms of human resources since the target group of AKEPT is analogous to the target population of current study.

- In this research work, and as suggested in earlier leadership studies, change-oriented leadership behaviors would be studied in both public and private HEIs in Malaysia. In other words, new models for each sector will be developed.
- Through this study and as one of the core objectives of quantitative research studies, the Academic Leadership Capability Framework, as a newly developed model, will be tested and verified in Malaysian academic context.
- This study emphasizes the importance of and suggests the application of change-oriented leadership in Malaysian public and private HEIs as the most appropriate leadership style for enhancing academic leadership performance in the context of change. In fact, through this study, the main constructs which build change-oriented capability of academic leaders will be identified.
- On the grounds of the findings of this study, the contents and processes of pragmatic leadership and management development programs will be adjusted and modified to facilitate the process of change in Malaysian HEIs.
- Profiling Malaysian academic leaders in public and private HEIs and comparing them in terms of leadership performance effectiveness as

well as leadership capabilities and managerial competencies will be beneficial for further policy making in HE sector towards internationalization, competitive strategies as well as other important debates in the field of HE.

- Making comparisons between the finding of this study and the findings of the ALTC and ATEM studies help identify the similarities and differences between these three countries and will be advantageous in further policy making processes as well.
- Identifying the main priorities and values of Malaysian academic leaders as well as the main HE challenges and solutions to these barriers from the perspectives of Malaysian academic leaders will be helpful in making informed decisions and policies towards promoting Malaysian HE.
- The results of this study can be compared with the results of similar studies in other Malaysian education sectors to identify the similarities and differences between Malaysian leaders in different educational institutions.

Conceptual and Operational Definitions of Terms

- Competency

As cited by Scott et al. (2008, p. 10), according to Rankin (2004), “competencies are, in essence, definitions of expected performance that, taken as a whole, should provide users with the complete picture of the most valuable behaviors, values and tasks required for their organization’s success”.

- Capability

“Capability involves a level of talent, gift or capacity required to produce productive outcomes and deliver innovations under testing, uncertain and constantly shifting human and technical situations” (Scott et al., 2008, p. 11).

- Leadership Performance

Leadership performance in academic settings has been operationalized in the pilot study phase of this study in terms of “personal and interpersonal outcomes, learning and teaching outcomes, recognition and reputation, financial performance, and effective implementation” (Scott et al., 2008, p. 60).

In addition, in the actual study and as elaborated in chapter 3, leadership performance has been operationalized through two variables namely recognition and prestige as well as academic professional excellence.

- Personal Capability

In the piloting phase of this study, personal capability refers to self-regulation, decisiveness, and commitment (Scott et al., 2008).

Also, in the actual study, making decisions and judgements is the only variable constructing personal capability, as explained in chapter 3.

- Interpersonal Capability

Interpersonal capability in the pilot study stage of this study refers to influencing and empathizing (Scott et al., 2008).

Additionally, sharing information and data, as elaborated in chapter 3, is the only variable under interpersonal capability scale in the actual study.

- Cognitive Capability

Diagnosis, strategy, and flexibility and responsiveness are the three variables to build cognitive capability scale in the pilot study phase of this research work (Scott et al., 2008).

Also, two variables namely strategic adaptive thinking and analyzing problems and alternatives, as explained in chapter 3, form cognitive capability scale in the actual study.

- Change-oriented Capability

Based on an extensive literature review (Arvonen, 2008; Ekvall, 1991; Ekvall & Arvonen, 1991; Yukl, 1999, 2004, 2012, 2013; Yukl et al., 2002), six constructs have been proposed to construct change-oriented capability scale in the pilot study of this research. These are advocating change, envisioning change, encouraging innovation and having creativity, facilitating collective learning, risk taking, and scanning external environment.

However, in the actual study and based on the information provided in chapter 3, change-oriented capability has been operationalized through five variables namely strategic environmental scanning, supporting organizational culture, thinking out of the box, having clear objective focus, and overcoming obstacles.

- Generic Competency

University operations and self-organization skills are the two variables which construct generic competency scale in the piloting phase of this study (Scott et al., 2008).

In addition, generic competency, based on the analysis carried out in chapter 3, has been operationalize in the actual study through two variables namely being performance driven and understanding operations and risks.

- Role- specific Competency

Learning and teaching is the only variable under role-specific competency scale in the pilot study phase of this research work (Scott et al., 2008).

It is noticeable that role-specific competency, based on the analysis and interpretation of the results in chapter 3, has been operationalized through benchmarking standards and practices.

- Public Research & Comprehensive Universities

In this study, public research & comprehensive universities refer to those public universities which have a significant degree of research activity and a wide range of undergraduate and graduate programs run by different faculties.

- Public Focused Universities

In this study, public focused universities refer to those public universities which focus on limited number of undergraduate and graduate programs run by one or a few faculties.

- Private Focused Universities

In this study, private focused universities refer to those universities in private sector which focus on limited number of undergraduate and graduate programs run by one or a few faculties.

Limitations of the Study

The main limitations of the study include:

- The respondents of the survey instrument in this research study have been trained on the grounds of different leadership development programs and have different points of view regarding leadership capabilities and managerial competencies.
- The number of the vice-chancellors and deputy vice-chancellors comparing to the number of other participants of the study is far less. Thus, factorial designs for making comparisons between groups may not be employed in this study.
- Focusing on public universities, even though there are 20 public universities in Malaysia, data were collected from 18 public institutions of higher learning.
- Since the public and private universities in Malaysia are in different states, it was only possible for the researcher to administer the online survey due to time constraint and limited budget in the pilot and actual studies. On the other hand, the hardcopy version of the survey instrument was only distributed among respondents from two faculties at University of Malaya.

- Although all the statistical considerations to increase the generalizability and creditability of the findings have been considered, however, the nature of Malaysia as a multi-cultural, multilingual, and multiracial country may have side effects on the results.
- In any research study, especially when conducted in a Multi-language society, the use of language and wording may be problematic.
- This study focuses on leadership capabilities and managerial competencies for effective leadership performance in HEIs in the context of change and thus, other variables which may have impact on leadership performance in university settings have not been considered.
- Online administration of the survey instrument was subject to the availability of the information on the websites of the universities and the number of respondents was limited to the ones whose information was accessible.
- In any survey studies, the accuracy of the findings is a function of the truthfulness and sincerity of the respondents. Hence, it has been assumed that the respondents were honest in answering the questions and avoided any bias to reflect other irrelevant issues.
- Failure to run the analysis in the context of public focused and private focused universities to answer research question 2-iii and 2-iv separately.

Summary

In chapter one, an introduction, background of the study in terms of required leadership capabilities and managerial competencies for effective leadership performance, HE in general and Malaysian context, future megatrends and their impact on HE, problem statement, related theories, and the proposed conceptual framework were covered. In addition, the rationale of the study, research objectives, research questions, significance of the study, operational and conceptual definitions of terms, and limitations of the study were elaborated. In the next chapter, an extensive literature review has been provided regarding leadership and management in HEIs as well as the main constructs in this study.

CHAPTER 2

LITERATURE REVIEW

Introduction

So far there have been a lot of conceptualizations and perceptions of leadership. Although the meaning of leadership is so arbitrary and noetic and some of the definitions are handier than others for specific settings, still there is no exhaustive and comprehensive meaning of this concept (Yukl, 2013).

There are three dimensions of leadership to be used as a foundation to develop an operational explanation of leadership namely influence, values and vision (Bush, 2010).

Pertaining to influence, there is an assumption which has been mirrored in most of the definitions of leadership that leadership involves a process of influence. In this process, intentional influence, which is aimed to guide to particular results (Cuban, 1988), is applied by an individual or a particular group over other individuals or groups to form the actions and relationships within the group or organization (Yukl, 2013).

With regard to the relationship between leadership and values, it may be noted that leadership initiates with the leader's characteristics, including personal values, self-awareness, emotional capability and moral ability (Greenfield & Ribbins, 1993). The behavior of leaders, and others in organizations, is strongly influenced by their ethical values (Fisher & Lovell, 2003) and there is strong evidence that effective organizations are the ones where goals and values are congruent and shared by the leadership and the staff of the organization (Du Plessis, 2008). Additionally, Sosik, Jung, and Dinger (2009) asserted that ethical values are significant since they influence

behaviors, especially in terms of whether organizational goals are judged as right and appropriate, as well as the degree of effort to exert in pursuing the goals. With respect to educational settings, Day, Harris, and Hadfield (2001) in their study focusing on effectiveness of twelve schools in England and Wales suggested that high quality leaders were aware of their personal and educational values and communicate them within the school. Moreover in terms of the importance of ethics in leadership with regard to initiating and implementing change processes, it is notable that viable, sustainable and advantageous change for the organizations cannot be achieved unless leaders take courses of actions in an ethical fashion and practice morally compatible methods to change as well as act in the best interests of everyone including even themselves (Burnes & By, 2012).

Focusing on vision, literature has suggested a strong relationship between this concept and leadership. According to Southworth (1993), leaders feel determined to work hard since their leadership is the chase of their individual visions. Additionally, successful organizations in implementing change programs focus on creating the senses of direction and vision and also communicate this vision widely, inside and outside the organization (Kotter, 1999). It is notable that envisioning behavior has been widely recognized and supported by many studies, especially the recent works centering around leadership behaviors (Arvonen, 2008; Ekvall, 1991; Ekvall & Arvonen, 1991; Yukl, 2004, 2012; Yukl et al., 2002).

Although practicing appropriate leadership styles are crucial for the enhancement of organizational performance in any type of organizations, this issue is even more important in the context of HEIs. As a matter of fact, HEIs live today in a society where they need to undergo significant transformations to respond to the

market needs and compete with the competitors. Hence, these organizations must be led and managed by qualified leaders who can plan and implement required change and development programs effectively and efficiently. In fact, these leaders must be equipped with some leadership capabilities and managerial competencies to lead their institutions.

This chapter covers the review of the main and the most recent studies with respect to change and leadership, issues of HEIs, required leadership capabilities and managerial competencies to lead universities in the context of change, and academic leadership performance.

Leadership, Management, and Change

Despite the fact that high performance organizations strive to develop management and leadership qualities at multiple levels (Kotter, 1999), still the difference between leadership and management in the literature has remained as a widely argued issue. Cuban (1988) linked leadership to change and management to maintenance activities and Day et al. (2001) proposed that leadership was linked with development of people and management was related to systems and paper. In addition, Bush (2010) argued that leadership was associated with values or purpose and management was related to execution or technical issues. Although these labels explain the difference between leadership and management, Kotter (1999) elaborated on this issue in a more precise way:

Leadership is not management. Management is planning and budgeting – establishing detailed steps and timelines for achieving needed results, then allocating the resources necessary to make that happen. Management is organizing and staffing – establishing some structure for accomplishing plan requirements, staffing that

structure with individuals, delegating responsibility and authority for carrying out the plan, providing policies and procedures to help guide people, and creating methods or systems to monitor implementation. Management is controlling and problem solving. Management is related to consistently producing short term results expected by various stake holders. Leadership is about establishing direction, developing a vision of the future, often the distant future, setting strategies for making the changes needed to achieve that vision. Leadership is about aligning people, communicating the direction by words and deeds to all those whose cooperation may be needed, influencing the creation of teams and coalitions who understand the vision and accept their roles in the implementation of the strategy. Leadership is about motivating, inspiring and energizing people to overcome major political, bureaucratic and resource barriers to change by satisfying basic but unfulfilled needs. Leadership produces change, often dramatic change and may produce extremely useful change.

It is notable that management in the future is completely different from what is observed today. As cited by Fullan (1996), four broad issues for managers of the future (Champy, 1995) include issues of purpose focusing on the nature of tasks which would be carried out in the future, issues of culture focusing on the need of a new management which would be appropriate to initiate and implement change programs successfully, issues of process and performance with a concentration on setting norms as well as priorities and measuring results, and lastly, issues of people with a focus on finding and inviting qualified staff to work with the company and how to evaluate their performance.

In regards to the relationship between leadership and change, Kotter (1996, 1999) posited that eight main stages must be taken for an effective change process in

any organization. These steps embrace the establishment of a sense of urgency, creating a powerful guiding alliance, building a vision, communicating the built vision, enabling the staff to act on the built vision, planning for and creating short term wins, combining achievements and producing more successful change programs, and institutionalizing new approaches. Based on these steps, participation of key organizational members in this process is a main point for the change to be accepted and implemented properly. Indeed, these members must be committed to the objectives of the change, information about the change must be communicated by them, they must take into consideration alternative aspects of the change, and the change must be incorporated and integrated throughout the entire organization.

However, sometimes change implementation programs are not successful and lead to a failure due to four barriers (Pfeifer, Schmitt, & Voigt, 2005) namely managerial barrier, vision barrier, resource barrier, and acceptance barrier. Considering these barriers, Pfeifer et al. (2005) introduced a model for the quality-oriented design of strategic change processes on the grounds of the eight-stage process for implementation of strategy proposed by (Kotter, 1996, 1999). Moreover in another study, a set of guidelines were postulated to understand change and avoid probable pitfalls in terms of initiating and implementing change processes successfully (Fullan, 2002), including:

- Innovating the individuals selectively with coherence is better than innovating the most of the individuals.
- Leaders are required to help the individuals evaluate and find shared meanings and commitments to new ways and thus, the best ideas of the leader himself may not be considered as enough.

- Leaders need to appreciate and accept the difficulties of implementation of new change plans, especially in the early stages of the implementation.
- Resistance to change must be redefined by the leaders. In fact, Successful leaders don't mind when naysayers disturb the balance or routine of the situation. Indeed, pessimists sometimes have important points which is worth to be addressed by the leaders.
- Re-culturing is the name of the play. A lot of change programs are structural and superficial. Cultural transformation needs to be done to lead to a long-lasting transformation and change.
- Checklist of implementation phases in the process of change cannot be applicable any more. In other words, transformation cannot be attained through a step by step shortcut and consequently, transformation needs a sophisticated, permanent work of re-culturing.

Given these guidelines, still the phenomenon of resistance to change exists. This phenomenon may happen when leaders do not get the organization prepared for change through helping them realize and accept the need for change or establishing a new vision for change. Hence, leader must ensure that the change is being integrated throughout the organizational structure as a part of the system (Roueche et al., 1989).

Also, with regard to change and effective leadership in educational settings, seven strong claims about effective leadership have been posited by Leithwood, Harris, and Hopkins (2008):

- School leadership is second only to classroom teaching as an influence on pupil learning.
- Almost all successful leaders draw on the same repertoire of basic leadership practices.
- The ways in which leaders apply these basic leadership practices - not the practices themselves - demonstrate responsiveness to, rather than dictation by, the contexts in which they work.
- School leaders improve teaching and learning indirectly and most powerfully through their influence on staff motivation, commitment and working conditions.
- School leadership has a greater influence on schools and students when it is widely distributed.
- Some patterns of distribution are more effective than others.
- A small handful of personal traits explains a high proportion of the variation in leadership effectiveness.

This reflects the fact that the type of leadership to be practiced in educational setting is very important. For example, as cited and discussed by Robinson and Timperley (2007), transformational leadership research consistently shows relatively large effects on staff attitudes but negligible or weak indirect effect on students (Leithwood & Jantzi, 2005). Similarly, distributed leadership analyses focus on how leadership is spread throughout a particular institutional environment and pay little attention to the impact of leadership on valued student outcomes (Leithwood et al., 2008; Spillane, Camburn, & Stitzel Pareja, 2007). It may be noted that in HE settings and given the relationship between societies and universities, turnaround leaders are

required to think of the society and the world and then they need to listen, link, lead, model, teach and learn (Fullan & Scott, 2009).

HEIs

HE is one of the main sectors in any economy which plays a major role in terms of maintaining sustainability and enhancement of the society (Mourad, 2013). Not only universities, but also community colleges as responsive and innovative organizations within the HE industry play a very crucial part in developing the societies (Miles, 2003). For example, one of the most obvious contributions of the university to the society has been to prepare skilled higher-level professionals to get employed in different industries (Soaib & Hussin, 2012). However, since universities have undergone significant internally-generated and externally-imposed turnarounds, the purpose of these entities have always been challenged (Ackroyd & Ackroyd, 1999).

From governance perspective, there are diverse philosophies behind the idea of university establishment and a university. As a matter of fact, a university is born when a group of founders make informed decisions about issues such as constitution of the university, structure of the authority and responsibility, vision and mission of the university, financial resource for building and operating the university, the design of offering programs, as well as recruiting academic and administrative staff to deliver different subjects and to run various administrative and executive tasks (Soaib & Hussin, 2012).

These entities all over the world are encountering a lot of change forces. The forces include a multifaceted, linked and quickly unfolding set of sustainability challenges caused by social, cultural, economic and environmental developments.

These concerns call for HE to take a leadership role in fostering qualified leaders of the future to manage these challenges and pitfalls successfully (Scott et al., 2012).

From theoretical perspective and focusing on public universities, it may be stated that since the structure of public universities as self-regulated organizations, is confined to the structure of the civil service and the people working in universities are regarded as civil servants, eminent governmental authorities will be able to affect public universities in many aspects (Soaib & Hussin, 2012).

In addition, other main issues have been significantly emphasized in the area of HE namely challenges related to globalization and internationalization, student mobility, teaching staff mobility, internationalization of curricula, branch campuses, institutional cooperation agreements and networks, mutual recognition agreements, transnational university networks or university mergers, and transnational virtual delivery of HE (Van Damme, 2001).

Also, Shin and Harman (2009) in another study focused on challenges of HE in 21st century in the rapid socio-economic shift including governance systems, curriculum, mission focus, external relations, research, and financing. In the aforesaid study, the researchers managed to propose a theoretical framework, which had been built on a few pillars namely massification, privatization, accountability and governance, internationalization, and ranking as well as world-class universities, to analyze these challenges considering the issues in Asia-Pacific region as well as in the world.

With regard to challenges from student perspective and according to Ramsden (1998b), there has been less incentive to teach well in HE and the students as well as

university graduates have been more demanding. In other words, the students keep complaining about issues such as poor and inferior quality of assessment processes, ineffective presentations through lecturing, lack of active independent learning encouragement, vague and unclear aims, unclear objectives and standards, and not being considered as a partner in the process of learning. In addition, there has been a strong evidence that graduates leave the university without mastery of key issues in their field.

Another main challenge of HE is the alienation of academicians from universities due to some reasons such as lack of a clear and realistic vision, the ineffectiveness of university administrative processes, focusing on the practice of resource and budget oriented behaviors rather than human oriented behaviors in universities, lack of provision of information, justifications, and reasons for change to academicians, and lastly, little emphasis on training and developmental programs for academic staff to help them adapt to change. However, still the greatest challenge of HEIs is to make sure that their graduates would be able to step into the unknown and turmoil future confidently (Ramsden, 1998b). Despite all of these facts, the following issues were proposed as the main challenges of HE in one of the latest studies (Black, 2015):

- Collaboration, partnership and interdisciplinary
- Student experience enhancement
- Learning communities and learner-centered approaches
- Bureaucracy which leads to inefficiency and ineffectiveness
- Using resources efficiently
- Multi-role academic leaders (lecturer, researcher, citizen, manager)

- Collegial preference tending towards a self-serving culture
- Transitional roles for academic leaders
- The existence of conflict between research and management aspects of leadership roles in universities
- Differing encountered demands among professional, academic, and senior leadership
- The need to adapt to new circumstances and promote or grow the organization
- Individualism and external loyalties
- The issue of leading diversity and inclusion
- Globalization and internationalization
- University governance

Not only the universities are facing challenges, but also they cause many changes in the society. In fact, paradigms, theories, hypotheses, stereotypes, models, frameworks, prejudices as well as myths, and even sometimes status quo are challenged through university temperament which culminate in emergence of new paradigms, theories, ideologies, technologies, and civil order (Soaib & Hussin, 2012).

This mirrors that the current time is a major transformation moment for HE all around the world and thus, the traditional 19th century model of HE is no longer applicable due to many reasons and evidences such as a wide access to HE, difficulty of balancing different issues in HE, lack of financial resources for the universities and colleges, and having to manage complicated issues such as growth, costs and risk in the current unsettled environment of increasing regulations. Moreover, the expectations of the students have changed and they demand several new things. Other significant

challenges which universities encounter include IT revolution, the desire of employers to employ high quality and competent university graduates who can initiate and implement change programs, and the challenges that the governments are facing such as globalization, educational competitions, competitive strategies, the demand for quality HE, and lack of financial resources (Scott et al., 2012).

Regarding the implementing strategic change programs in the context of HE to shatter the barriers and challenges in this context, Allen (2003) scrutinized the relationship between organizational climate and strategic change as well as the approach used to direct the process of change and concluded that the level of security or insecurity in a HEI is to some extent based on the managerial approach to change since the organizational climate is influenced by this approach.

Given the many challenges for HE, the following concerns characterize the turmoil shifting environment of universities which HE leaders would face during their tenure in academic leadership roles (Fullan & Scott, 2009, pp. 97-98):

The world of academic leader, as we have seen, is wickedly challenging. There is a wide range of external change forces that continuously shift and bear down on our leaders. And then there are the many local change forces that can help or hinder necessary action. It is a world where change is inevitable, where the unexpected is to be expected, where leveraging talent to get action is critical, and where academic cultures, different traditions, and corporate goals can collide. What is important to understand is that, in this world, leadership cannot just come from the top. Everyone is a leader of change in their own area of expertise. It is a world where –if those who will implement a desired change do not see its relevance, desirability, and feasibility

and if they are not clear on what they must do differently and are not helped to learn it- there is no change, only window dressing and plans with no implementation.

It is a world where, as a central or local leader, being able to regulate one's emotions –to remain calm when the unexpected happens or when confronted with passive aggression, to tolerate ambiguity, and to be undefensive and willing to listen and learn- is critical. It is a world where being committed to the core purpose of beneficial student outcomes and being action-oriented and responsive while being able to make a hard decision counts. And it is a world where being able to empathize with others, work with diversity, listen, influence, get to the core of the issue, set priorities, diagnose what is going on, and design uniquely suited solutions with those who are to implement them also counts.

With regard to the relationship between chancellor's leadership styles and implementing significant turnarounds, Roueche et al. (1989) in their research about community colleges concluded that in a HEI, the leadership of the organization is affected by the behavior of the president. They also found out that thriving leaders of community colleges have capabilities of leading and guiding the college based on the set objectives. As said by these scholars, successful leaders of community colleges believed that when the staff were drawn in the change process and identified the objectives of the change as well as the method to make it happen, a successful change process would occur.

The other important feature of universities is that they produce knowledge. Thus, these entities can be considered as knowledge societies. Change leaders in these societies have been characterized by five essential qualities including having moral purpose, understanding of the change processes, being able to improve and grow

relationships, having the ability to create and share knowledge, and being competent in coherence making (Fullan, 2002).

Focusing on ICT in HE settings as another currently raised issue and according to Scott et al. (2012), ICT utilization pressures HE strongly in 21st century. It is notable that while education has been considered as the main change agent in different kinds of organizations, ICT is perceived to be one of the main change agents in education (Oliver, 2002). The utilization of ICT in university context in different parts of the world has increased remarkably since the early 1990s to the extent that nowadays, ICT is being used in a wide range from decision making systems to course assessment systems and not only has become a crucial element in the era of internationalization and commercialization, but also has contributed to the development of part time, interactive and distance learning systems (Stensaker, Maassen, Borgan, Oftebro, & Karseth, 2007).

leadership and change in HEIs. Leadership forms an unclear quality in HEIs and therefore, the adoption of leadership styles by the authorities of these organizations must be aligned by the cultures of the disciplines being instructed in the universities as well as by the nature of the universities. In addition, there is a debate that leadership in HEIs must pay attention to outcomes through creating conditions for enabling high quality teaching and research as well as raising the awareness of staff and encouraging them to face, initiate and implement change processes successfully. Therefore, HE in many countries is undergoing fundamental and significant turnarounds in terms of its governance, structure, funding, as well as organization and these processes of change are likely to indicate the direction of a future for HEIs in the turbulent environment (Gornitzka, Kyvik, & Stensaker, 2005).

Moreover, according to Mader, Scott, and Razak (2013), transformation in HE requires leadership in an environment of co-creation in which there is an interaction between universities and their stakeholders. These transformative approaches have been framed around (Mader, 2012):

- A shared understanding of the vision (vision and leadership).
- Trust that is mirrored through exchanging and innovative social networks (social networks).
- Shared responsibilities and leadership in processes (participation).
- Organizational learning that supports the understanding of the vision's implications (education and learning).
- Trans-disciplinary research that leads towards applied innovations (research integration).

For this reason, many studies have been conducted to identify the challenges of HE. For example, openness of access to HE, finding new funding methods and generating new income, new ways of competitions across HE, user pay concept and other new patterns of participation, new and shifting expectations of university students, growing diversity in terms of many issues, and benchmarking and maintaining standards are the challenges which were identified by Fullan and Scott (2009). In terms of leadership effectiveness in HE at departmental level, Bryman (2007), after reviewing a variety of papers extracted from different indices, proposed that at the departmental level, thirteen behaviors may be considered as important for effective leadership in academic settings including:

- Strategizing and vision building.

- Facilitating the direction set through preparation of arrangements at department level.
- Having consideration.
- Having an honest and fair attitude towards academicians.
- Being trustful and having integrity.
- Facilitating the participation in main decision making processes and inspiring others to communicate with each other.
- Communicating the departmental vision.
- Being a trustful role model.
- Developing a collegial and participative working environment in the department.
- Being proactive in developing relations with internal and external constituencies inside and outside the university.
- Evaluating the performance and providing feedback on that.
- Seeking and providing necessary resources for the tasks and stimulating scholarship and research studies.
- Enhancing the reputation of the department through making academic appointments.

It is notable that universities, as corporate bodies and responsive organizations, usually consider their internal and external environment and plan and design their own development agenda and priorities based on environmental scanning (Hussin & Ismail, 2009). In addition, they have been required to consider how to foster leaders and what leadership style to be practiced in HEIs in order to enable adaptation to the new changing circumstances (Black, 2015).

The expansion of universities in terms of their numbers, size and internal organizational complexity is one of the marked features of social life in the present age and in tomorrow's world, academic managers, whose leadership qualities are the same as the qualities of good teachers, would be needed by the effective universities. This dictates that the patterns of university management have been altered and previous old fashioned approaches to university management cannot be applicable anymore. It is notable that some issues in HE such as mass HE, knowledge growth and differentiation, changes in university organization, and the changing nature of academic work are the indications of revolution in HE in the 21st century. In fact, university education which once used to be for an elite is now for everyone (Ramsden, 1998b).

According to McNay (1995), changes in internal organization of universities can be captured in a simple model which illustrates the distinguishing degrees of control over policy definition and policy implementation. Based on this model there are four ideal types of a university including collegium (loose policy definition, loose control of policy implementation), bureaucracy (loose policy definition, tight control of policy implementation), corporation (tight policy definition, tight control of policy implementation), and enterprise (tight policy definition, loose control of policy implementation). Regarding this model and as elaborated by Ramsden (1998b), there is a symmetry between the "enterprise" university and the concept of leadership. In other words, in the next generation of the universities, policy definition is tightly monitored while implementation of the policy would be loosely controlled, leadership would be perceived as an enabler or facilitator for task fulfilments, authority would be derived from triumphantly successful performance, there would be stronger up and

down communication lines as well as more provided feedback on performance, and management would be perceived as an professional skill being learned continuously.

With respect to implementing university development plans, Hussin and Ismail (2009) based on an extensive literature review proposed that the crucial factors in university development include academic expertise, infrastructure, scientific and technological progress, global trend in HE, and financial allocation. The development plan is normally a comprehensive plan which encompasses main university components such as finance, services, human resources, research, and infrastructure. On the grounds of this plan, universities can deliberate on what they want to achieve, the way by which the tasks must be completed, when to achieve the goals, who should carry out the plan, who are accountable, as well as the necessary facilities and needed funds for achievements.

The other crucial debate in the area is the information and knowledge dimension of leadership. While the four main approaches to leadership including trait, style, contingency and the transformational and charismatic approach have not concentrated deeply on information and knowledge management aspects of leadership (Lakshman, 2007), change-oriented leadership through monitoring as well as absorbing knowledge and information from the environment (Yukl, 1999, 2004, 2013; Yukl et al., 2002) and then building and sharing the new vision (Arvonen, 2008; Bakar & Mahmood, 2014; Ekvall, 1991; Ekvall & Arvonen, 1991; Yukl, 1999, 2004, 2012, 2013; Yukl et al., 2002) on the grounds of this information may seem to be even more pertinent to be practiced in any organizations operating in today's turbulent environment, especially university organizations.

selected studies on leadership and change in HEIs. Many issues have been raised and elaborated in the recent years mainly focusing on HE leadership, challenges, and the necessity for implementing transformation in HE worldwide.

One of the studies was conducted by Shin (2015) in which, the future of academic profession had been debated using the data collected by an international survey on Changing Academic Profession (CAP) as well as other previous studies. Based on this research, managerial reforms due to neo-liberalism was proposed as one significant environmental change which would have an impact on academic's teaching, research and service activities. As an example of this impact, the division of labor between academics on these three functions was addressed. Additionally, on the grounds of this fragmentation in academic works, which could be accelerated by global competition, job satisfaction among academician were reported to be decreasing and their job stress level reported to be increasing. Moreover, through this study it was predicted that academicians would have various roles and the difference gap between academicians and other professionals would gradually be reduced.

In another study focusing on identifying the factors impacting on faculty remuneration in 18 HE systems (Shen & Xiong, 2015) using descriptive and regression analysis, it was suggested that faculty remuneration in Hong Kong was the highest and in China was the lowest. More over the results indicated that some factors such as university type, disciplines, and some issues related to human capital investment as well as some demographic information such as age and gender had an impact on faculty remuneration and among these factors, the impact of disciplines were more complicated.

Rostan and Ceravolo (2015) also focused on internationalization in HE. Using the data already collected in two comparative studies, they studied international research collaboration and international mobility as two aspects of internationalization of the academy to find out whether and how these two variables were associated with discipline as one of the main influencing factors on internationalization. The results of the study revealed that the behavior of the academics from different disciplines in some areas such as international research collaboration as well as educational circulation diverge while in some other areas such as research productivity related to international research collaboration as well as short-term professional circulation, their behaviors converge.

Through another study, Padilla-González and Galaz-Fontes (2015) addressed job satisfaction among the faculty as one the most important variables for understanding the intention to leave academia using the data collected from 19 countries which had participated in an international survey known as CAD. The study also underlined the importance of working conditions as well as organizational variables that had an impact on decisions made by academics. The results of the study demonstrated a relationship between the intention of faculty to leave their institutions and their job satisfaction variable mediated by two other variables namely job stability and the existence of sufficient working conditions. Moreover, the study shed light on the fact that young academicians were more inclined or prone to leave the academic profession.

In another study (Kim, Horta, & Jung, 2015), four countries including China, Hong Kong, Malaysia and Japan were studied in terms of research community cohesion as well as the integration of thematic approaches. To this end, research

publications published from 1980 to 2013 in international HE journals by the authors from above-mentioned countries were analyzed based on some criteria such as publication counts, co-authorship and cross-citation mapping, as well as publication patterns in the four countries in terms of thematic approach and community cohesion. The findings shed light on distinct evolution of HE research in the studied countries. Moreover, the characteristics of researchers in the four countries were elaborated and other related discussions were also provided.

With regard to European countries, Lilles and Rõigas (2015) in their research scrutinized the way by which HEIs might contribute to the growth in the regions of Europe. In other words, in this study the correlation between the share of tertiary students (through measuring human capital) with the share of knowledge-intensive employment was investigated in different regions of Europe. The results, indicated that the contribution of human capital to economic growth would take time.

Sustainability issues in HE with a focus on education management were reviewed systematically in another recent study (Figueiró & Raufflet, 2015). In this review paper, 63 publications published from 2003 to 2013 in different international journals were reviewed and mapped based on four categories namely types of papers, challenges, teaching techniques, and curriculum orientation.

Lastly, in another recent study (Noaman, Ragab, Madbouly, Khedra, & Fayoumi, 2015) and on the basis of the lack of a comprehensive model for HE quality assessment, a model was evolved that could be applied for enhancement of services provided by HEIs.

Malaysian HEIs

In this section, issues related to Malaysian public and private HEIs and a review of the most recent studies focusing on HEIs in Malaysia have been provided.

public Malaysian universities. The aim of university education in Malaysia has been to produce highly trained Malaysian graduates with high level of qualities to serve the society and lead the country (Soaib & Hussin, 2012). Establishment of University of Malaya (UM) in April of 1949 is the starting point of the development of public HEIs in Malaysia. The name of this university has been derived from the term “Malaya” which used to be the name of the country at that time. UM was fast in growing during the first decade of its establishment and this led to the establishment of two autonomous divisions in 1959, one in Singapore and the other in Kuala Lumpur. In 1960, the government of the two territories indicated their desire to change the status of the divisions into that of a national university. Legislation was passed in 1961 and UM was established on 1st January 1962 (Please refer to the website of UM for more info).

Upon independence, industrialization and providing employment for the large number of graduating seniors from secondary schools was the first major movement for economic development at national level. Hence, education in the fields of technology and sciences were deemed to be crucial to establish a strong industrial sector to attain defined goals at national level. Thus, Universiti Sains Malaysia (USM) was established in 1969. In 1960s, demands were also made for the establishment of a university that could meet the educational needs of Malays and the development of their language and this led to the establishment of Universiti Kebangsaan Malaysia (UKM) or national university of Malaysia in 1970 as the third public Malaysian HEI.

As a consequence, UKM played the major role in terms of propelling and fostering national culture, values, consciousness as well as unity (Subramani & Kempner, 2002). Also, another main concern of the government was to establish a national education system aimed to unite all the races with the usage of Malay as the national language within the aforementioned system (Soaib & Hussin, 2012). It is worth noting that as cited by Soaib and Hussin (2012), HE expansion in Malaysia had been tremendous in terms of the number of institutions, student enrolments, and the range of offering programs (Marlow-Ferguson, 2002).

Prior to the 1980s, public universities were the main higher education provider in Malaysia and since 2000, Malaysia has made a lot of effort to expand the public HEIs while encouraging private HE to meet the nation's growing demand (Azman et al., 2011). By the end of August 2016, there were 20 public universities in Malaysia from which 5 universities were research universities, 4 were comprehensive universities, and 11 were focused universities. The focus of research universities has been on research whereas comprehensive universities have been offering a variety of courses and fields of study, and the concentration of focused universities has been on specific fields related to their establishment (please refer to the website of Ministry of Education Malaysia for further information). It is noticeable that there are also 30 public polytechnics and 80 community colleges in Malaysian HE. Also, on the grounds of the national education statistic in 2014 published by the Ministry of Higher Education Malaysia, more than 33,000 academicians work in Malaysian public universities of which less than 9% are international staff, 51% are female staff, and 37% have doctoral degree (Wan et al., 2015).

In Malaysia, public universities have strong complex relationships with Ministry of Education Malaysia, Treasury, Malaysian Qualification Agency, National Higher Education Fund Corporation, National Audit Department, Ministry of Science, Technology and Innovation, and Public Services Department (Soaib & Hussin, 2012). However, as debated by Wan et al. (2015), the Ministry of Higher Education Malaysia have some functions over the public universities including budget allocation for different purposes, being directly involved in the governance of universities through appointing senior academic leaders, as well as auditing universities for ensuring accountability.

Regarding legislation, public Malaysian universities are governed mainly by the UUCA which was passed in Parliament and gazetted in 1971. All the universities have been put under full control of the Ministry of Higher Education Malaysia by UUCA. Also, all the academics working in public universities have been regarded as civil servants by law. This indicates that academicians working in public universities receive remuneration that is calculated based on their position, entry qualification, and years of service. In addition, public universities have to directly report to Ministry of Higher Education and subject to Treasury regulations administered by the Ministry of Finance Malaysia (Wan et al., 2015). Also, the Malaysian federal government has exerted significant pressures on public HEIs to reorganize their activities and priorities. As a matter of fact, public universities have been requested by the federal government to increase access, participation, research output, and quality, as well as to achieve critical mass for expertise in selected areas, and finally, to improve the international ranking and reputation of Malaysian higher learning institutions (Azman et al., 2011).

Even though 12 public universities were granted autonomy between 2012 and 2014, there were some arguments that granting autonomy without radical reforms to legislative and governance framework has failed to be translated into major changes in the ways by which states govern universities internally and externally (Wan & Abdul Razak, 2015).

These entities have been positioned to be the agents for socio-economic mobility, human resources development at technical and professional levels within different economic sectors, and socio-economic equity among various ethnic groups. Moreover, in terms of organizational development, it may be noted that Malaysian public universities seem to adopt strategic organizational development model in the recent years. On the basis of this model, the vision, mission, objectives, timeline, strategies, actions, and performance indicators are specified by the universities and then all the activities are undertaken to achieve the predefined organizational outcomes (Hussin & Ismail, 2009).

It is worth noting that the objective of becoming an education hub has appeared in numerous national policy documents such as Malaysian National Higher Education Strategic Plan and Malaysian Economic Transformation Program. Also, Malaysia is constructing EduCity Iskandar in an economic zone. These initiatives imply that Malaysia is presently pursuing at least two education hub initiatives namely a national level education hub and an education city. It is notable that even though the linkage between education hub establishment and revenue generation is well explicated in the policy landscape of Malaysia, it deems that the ties between education hub establishment and talent development is weak and unclear (J. T. Lee, 2014).

private Malaysian universities. HE system in Malaysia faced severe challenges in coping with the demands for transnational HE due to the considerable impact of globalization and internationalization of HE. As a consequence, regulations related to educational reforms were passed in 1996 to provide the necessary regulatory framework for the liberalization and privatization of HE on a larger scale to meet Malaysia's national development objectives (Azman et al., 2011). Also, as elaborated by J. T. Lee (2014), Malaysia experienced a large exodus of students who were leaving the country to pursue HE. This drained the country of foreign exchange and worsened the trade deficit. However, the financial crisis dampened interests to study abroad since most of the families could not afford the costs of the education of their children in another country (Yean Tham, 2010). As a result, through the expansion of private HE in Malaysia, not only the private sector accommodated the homebound students, but also attracted many foreign students as a new main source of revenue (J. T. Lee, 2014). It is noteworthy that Malaysian private HEIs have been established and owned by financially sound corporations and have been offering programs ranging from diploma to post-graduate levels (Azman et al., 2011).

Malaysia, through expansion of its private HE sector in the late 1990s, has become one of the active proponents of education hubs in different configurations. This country has also boasted a large number of foreign branch campuses such as the University of Nottingham, Monash University, and Curtin University (J. T. Lee, 2014). Also, these private organizations are being regulated by the Ministry of Higher Education Malaysia (Wan et al., 2015).

Since Malaysian private universities are governed by PHEIA 1996 which stipulates that private universities must be established as a company, they must be read

alongside the Companies Act. Consequently, Malaysian private universities have the structure of companies, comprising of the board of directors, a chief executive officer for overseeing the commercial aspect of the company, and a vice-chancellor (or its equivalent) for managing academic affairs. This implies that the academicians in private universities are viewed as employees of private organizations, who subscribe to the Labor Law in Malaysia as well as the institutional human resources policies. Also, on the basis of the national education statistic published by Ministry of Higher Education Malaysia in 2014, 2500 academicians work in Malaysian Private universities of which, 13.2% have doctoral degree, 40% have master degree, and 34.6% have bachelor degree (Wan et al., 2015).

Prior to the 1980s, even though the private sector was playing an important part in the field of education, its involvement in higher education provision was limited. However, by the early 1990s, the private sector was taking on an increasingly important role in providing university education within Malaysian HE system (Azman et al., 2011) and by the end of August 2016, there were 484 private institutions (main campuses) in Malaysia among which 45 were private universities, 29 were university colleges, 9 were the branches of foreign universities in Malaysia, and 401 were colleges. Given the number of campus branches, the total number of private institutions in Malaysia would be 497.

selected studies focusing on Malaysian HE. In the recent years, many studies have been carried out to address the main issues in Malaysian HE in terms of leadership and change, management and governance, and administration. However, as they have been reported in the following paragraphs, leadership performance effectiveness as well as academic leadership capabilities and managerial competencies have not been

scrutinized to an acceptable degree. This also justifies and confirms that there is a need to conduct a study in Malaysian context focusing on these main variables which play a contributing role in the current unsettled environment of HE.

In one recent study, Tan, Hee, and Piaw (2015), through a qualitative research, interviewed the vice-chancellor of a Malaysian private university and a number of 6 staff who were reporting directly to the vice-chancellor. The aim of the research was to study the leadership style adopted by the vice-chancellor on the grounds of the four-frame leadership model. The results revealed that the vice-chancellor practiced three styles based on the aforesaid model which was an indication of multi-frame leadership style adoption.

In another recent study (Wan et al., 2015), the sources of satisfaction and frustration were examined among Malaysian academicians in three HE sectors namely public research universities, public comprehensive universities, and private non-profit universities. Through this study, it was revealed that the main sources of satisfaction were related to the nature of academic work namely supervising, mentoring, teaching and interaction with students, conducting research, and knowledge sharing through producing publications. Additionally, the results showed that the major sources of frustration were associated with the governance of HE namely unrealistic expectations, lack of transparency of the promotions and reward system, and a strong red tape culture.

The issue of employability of Malaysian graduates from the perspectives of employers was also scrutinized in another recent study (Cheong, Hill, Fernandez-Chung, & Leong, 2015). The study illustrated that although Malaysian graduates were perceived far from the ideal workforce by the employers, they showed to have some

specific strength comparing with international graduates which makes them more appropriate employees such as familiarity with local conditions, willingness to work hard, as well as lower hiring costs. The findings also indicated that Malaysian graduates were not ranked alike qualitatively. In other words, the results did denote that the graduates from private transnational universities were ranked higher comparing with graduates from public universities.

In another quantitative research, the contributing factors associated with scholarly publication productivity of academic staff in Universiti Teknologi Malaysia were studied (Dhillon, Ibrahim, & Selamat, 2015). The results of the study revealed that personal, environmental, and behavioral factors had a positive impact on the dependent variable among the target population.

Also, M. N. N. Lee (2015) also in a book chapter addressed the main issues of Malaysian public and private HEIs such as privatization of HE, corporatization of public Malaysian HEIs, and a variety of challenges that Malaysian universities encounter in terms of quality assurance, diversifying sources of funding, and internationalization of HE. In addition, other features of Malaysian HE were discussed in this book chapter including the types of Malaysian HEIs, public and private universities partnerships, massification of HE in Malaysia and the impact of global trends on this process.

In another recent study (J. T. Lee, 2014), Malaysia, Singapore, and Hong Kong, as the main educational hubs in the region, were compared in terms of talent development policy initiation and implementation. The results of this study showed that Malaysia has been a successful country comparing with Singapore and Hong Kong in positioning itself as a regional educational hub.

Also, the gap between research and policy making in Malaysian HE was examined through another study (Sirat & Azman, 2014) to provide strong evidences for initiating research-based policy making in the context of HE.

Additionally, in another major research (Sirat, Ahmad, & Azman, 2012), leadership crisis in Malaysian public universities was studied. Through this study, it was contended that the main reason for the malaise underlying the public university leadership crisis in Malaysia was that there had been no proper system in place to appoint the most qualified academics to lead public HEIs. It was also argued that the leadership crisis in public universities was approaching such a critical stage that nothing less than a total reform, with a focus on best practices and culture which promote meritocracy, had to be instituted.

Also, another study was conducted by Yean Tham (2010) centering around profiling the pattern of trade in higher education services in Malaysia and identifying the main contributing factors as well as policy challenges towards the trade performance in the sector of attracting international students. The results showed that due to some internal and external factors such as unilateral liberalization measures, the trade pattern has changed over time. Also, removing domestic barriers in the face of increasing competition from other emerging contenders and achieving international accreditation and recognition for home-based programs were identified as the key policy solutions.

Notably, Sirat (2010) in a study related to the strategic planning directions of Malaysia's higher education with an emphasize on university autonomy highlighted that state governments, as the direct provider of HE in Malaysia, exert influence and interfere the internal processes in universities through a financing mechanism.

Through this study, it was also proposed that on the grounds of neo-liberal premises, the state governments need to play as service providers, enablers, and facilitators of HE in Malaysia.

Leadership Capabilities

In this section, the issues related to change-oriented capability, personal capability, interpersonal capability, and cognitive capability, as the main leadership components of the conceptual framework of this study, will be reviewed and discussed.

Capabilities are the abilities to learn and are associated with creativity, their focus is on future trends, and they are meant to work productively and effectively in unsettled, instable, uncertain and complex situations (Scott et al., 2008). This reflects the fact that in the era of change and turnaround in HE, an effective academic leader have to be seen as a person who has the capacity to lead and direct the staff in the process of change (Ramsden, 1998b).

Bobbe and Kober (2015) in a recent quantitative research and based on Resource-Based View (RBV), studied organizational capabilities in HE sector through the analysis of the collected data from 116 heads of schools/departments in Australian public universities to identify the main organizational capabilities in HE. The results of Principal Component Analysis (PCA) with Varimax rotation in this study yielded three components namely research, teaching and networking capabilities which were confirmed through complementary analysis. In another study, Black (2015) in a research study re-examined a new leadership capability framework which had been developed in an alternative sector. Through this study, 41 academic leadership capabilities were proposed which had been categorized into 4 major groups, as listed below:

- Vision and goals
 - i. Envisioning and establishing a common sense of purpose.
 - ii. Identifying the factors happening to or affecting teaching, research and productivity.
 - iii. Setting clear achievable goal.
 - iv. Ensuring flexibility in all levels of planning.
 - v. Considering the viewpoints of stakeholders and partners.
 - vi. Making sure that the plans start with understanding performance related to institutional purpose.
 - vii. Ensuring that the staff understand the system and embrace the aims, vision, and culture of the institution.
 - viii. Getting the people to measure performance pertaining to goals in teaching, research and the institution.
 - ix. Fostering an advocating good governance at department and institutional level as well as among academics and in complex projects.
 - x. Ensuring the consistency and congruency between plans, actions, and results.

- Hands-on leadership
 - i. Having tendency to hands-on management and working with staff.
 - ii. Having professional academic and operational competencies appropriate to the institution.
 - iii. Having the capacity to prioritize work-related issues through asking key questions.

- iv. Identifying people's strengths and guiding them to maximum effect.
 - v. Understanding cultural diversity and managing people's expectations and views very carefully and thoroughly.
 - vi. Evaluating the results with the staff and empowering them to get the job done completely.
 - vii. Engaging people in data analysis, decision making, and implementing transformations.
 - viii. Delegating responsibilities and control of the information to the people who take care of the job.
 - ix. Making sure that a deep understanding of teaching and research related matters steer and guide people's work.
 - x. Conducting meetings in a two-way communication mode, with emphasis on clarifying, testing, and listening.
 - xi. Making sure that the managers lead, spend time with staff, listen to staff's concerns, and enable contributions.
- Improvement and learning
 - i. Giving the opportunity to the staff to request training and providing it very quickly.
 - ii. Being receptive to new ideas and seeking out alternative solutions.
 - iii. Enabling the staff to challenge, share, and learn from mistakes, without fear.
 - iv. Expecting and supporting staff to make a great effort to get high standards.
 - v. Expecting the evolution of the institution and its needs over time.

- vi. Understanding risk factors and making suitable contingencies.
 - vii. Making judgments about the system rather than the people, managing morale, celebrating success, and learning from failures.
 - viii. Guiding improvements through understanding students, research and performance processes rather than arbitrarily defined targets.
 - ix. Having the quality to differentiate between neglect and lack of capability in terms of training, experience, and resources.
 - x. Allowing people to do their job freely and experimenting with new methods to enhance performance.
- Work details and the big picture
 - i. Focusing on internally and externally intra-organizational as well as inter-organizational dynamics and understanding them.
 - ii. Recognizing the areas of influence in the institution and identifying its solvable problems.
 - iii. Budgeting management and developing a clear fund-raising strategy in terms of research grants, fees, philanthropy, and sponsorship.
 - iv. Examining financial and non-financial contributing measures and resources to institutional success.
 - v. Basing information, technology, and resource requests on the way by which they help the staff's core work.
 - vi. Creating a climate of cooperation, information sharing with external partners to improve work.
 - vii. Being patient and able to anticipate unexpected outcomes.

- viii. Being prepared to get necessary advices from professional external bodies and sources.
- ix. Integrating management flexibility with professional and academic accuracy.
- x. Being competent in determining whether the data about the staff, communities, or society could be useful to the university.

In another study, Organizational Learning Capability (OLC) was operationalized through experimentation, risk taking, openness, dialogue, and participative decision making the mediating effect of employee flexibility on the relationship between OLC and individual performance was examined in a university setting (Camps, Oltra, Aldás-Manzano, Buenaventura-Vera, & Torres-Carballo, 2015). The results of the study confirmed the proposed mediating effect.

Also, Middlehurst (1993) elaborated the functions and tasks of vice-chancellors and categorized their roles into five major groups. namely being capable of clarifying and determining the directions, positioning the institution, improving climate through communication, decision making and adjudication, as well as representing institution well.

Also, Wolverton, Gmelch, Wolverton, and Sarros (1999) in their research study made a comparison between department chair task in Australia and the US. The results of this study revealed that department chairs in both countries had delineated their tasks based on six themes including administrative tasks, resource management, scholarship, leadership, faculty development, and resource development (US)/external liaison (Australia).

In another study, some leadership responsibilities at department level were proposed to be very significant namely envisioning and directing others towards the vision, creating a supportive communication climate, enhancing conflict management skills, motivating academicians to enhance their productivity, increasing research, improving teaching, having commitment to provide more services, evaluating faculty members, and being equipped with personal survival mechanism that are essential in leading universities (Lucas, 1994).

Lastly, Asif and Searcy (2013) debated operational and dynamic capabilities as two different types of capabilities required to attain performance excellence in HE. According to Pavlou and El Sawy (2011), operational capabilities, known as zero-order capabilities, refer to those which are necessary for everyday functions carried out in universities such as subject delivery and assessment, student counselling. On the other hand, dynamic capabilities, or first-order capabilities, are meant to change daily routine processes such as environmental monitoring capability to detect new trends in HE, learning capability to learn and enhance university functions, and integrating capability to innovate new tools for designing, delivering, evaluating, and conducting research studies.

Also, Asif and Searcy (2013) introduced some main capabilities related to three aspect of HE performance excellence namely research performance, program design and delivery, and service performance. These scholars used an Analytic Hierarchy Process (AHP) approach in a case study research to identify the most significant capabilities in each category. Based on their analysis and in the category of research-related capabilities, improving research infrastructures was identified as the main capability, followed by active learning and continual improvement, research capability

of individuals, securing research projects, capacity building for research, research grant arrangements, scientific collaborations capability, environmental scanning capability, and team working. Regarding program design and delivery-related capabilities, enabling and promoting learning and continual improvement for students was identified as the most significant capability, followed by imparting required skills to the students, effective program design, effective program delivery, effective teacher-student interaction, coherent program assessment, student performance assessment, motivating students, system for stakeholder feedback, and student counselling. In addition, with respect to service performance-related capabilities, understanding issues that impact academia, community, and the profession was identified as the most significant capability, followed by finding solutions to the problems related to the community, and interaction with the community and other stakeholders. It is notable that in the aforesaid study, knowledge creation, operational excellence, and stakeholder satisfaction were used as the criteria for evaluating each capability.

change-oriented capability. With respect to quantifying and conceptualization of change-oriented leadership, two main studies have been conducted which construct the pillars of this newly emerged leadership style. Regarding the first study (Ekvall & Arvonen, 1991), change-centered or change-oriented leadership includes a comprehensive behavior pattern that can be categorized into four sub-domains:

- A change-oriented leader considerably is a promoter of change and growth.

With respect to this sub-domain, a change-oriented leader is considered as a person who pushes the growth and initiates new projects.

- A change-oriented leader considerably has a creative attitude.

In terms of creativity, a change-oriented leader offers and experiments a variety of ideas about new and different methods of performing tasks, pays attention to the possibilities rather than problems, inspires thinking along new lines and likes to discuss and share new ideas.

- A change-oriented leader noticeably is a risk taker.

A change-oriented leader, as soon as it is necessary, makes quick decisions and is prepared to take risks in decision making processes.

- A change-oriented leader greatly has visionary qualities.

A change-oriented leader with high capabilities of building and creating visions gives thoughts and plans about the future.

These characteristics of change-oriented leadership (Ekvall & Arvonen, 1991) have been depicted in Figure 2.1.



Figure 2.1. Change-oriented Leadership Behaviors (1)

It is notable that change-oriented leadership as the new behavioral dimension has been supported empirically as well (Ekvall, 1991). Also, these findings were confirmed in another recent study (Arvonen, 2008) through emergence of similar constructs as displayed in Figure 2.2.

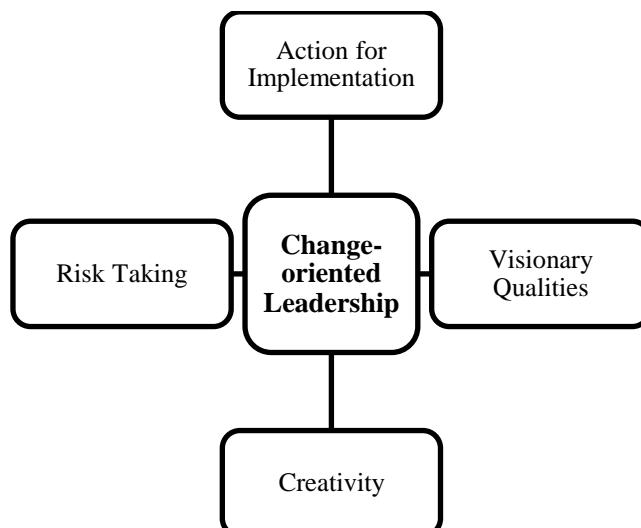


Figure 2.2. Change-oriented Leadership Behaviors (2)

In the second main study (Yukl, 1999), the following items were emerged through the analysis:

- A change-oriented leader suggests creative and new ideas to improve products, processes and services.
- A change-oriented leader has confidence and is optimistic when he suggests new significant turnarounds.
- A change-oriented leader takes a long-term perspective on challenges as well as opportunities that organization is going to encounter.
- A change-oriented leader envisions exciting and appealing new possibilities for the organization.
- A change-oriented leader develops relationships with people outside the work unit to get agreements which may be vital for implementation of significant turnarounds.
- A change-oriented leader analyzes the activities, services and products of the competitors in the market to get new ideas on improvement of things within his/her unit.

There are also other studies focusing on identifying and categorizing change-oriented behaviors. For example, Yukl et al. (2002) categorized leadership behaviors into three clusters namely task-oriented, relations-oriented and change-oriented behaviors.

Through this study, it was concluded that change-oriented behavior comprises the following four dimensions:

- Monitoring and identification of external threats and opportunities.

According to Yukl et al. (2002), this change-oriented behavior comprises three activities including environmental scanning, gathering required information, and analyzing and interpretation of the information. Environmental scanning or monitoring the external environment refers to sensitivity to the environmental information. The information can be collected through a variety of channels. The final stage is to analyze and interpret the information to justify the reason for which change is needed. This capacity is also consistent with effective decision making principles as well as the idea that leaders in HE must read the environment in terms of what needs to be done in order to cope with the main environmental challenges (Fullan & Scott, 2009).

- Proposing new strategies and building new visions.

Building a motivating, exciting, achievable and realistic vision of a better future is a common component in most theories of leadership. With this regard, an effective vision in terms of increasing commitment of the subordinates for a planned strategy or change has particular characteristics namely relevancy to values and ideals of the followers, being communicated with eagerness and confidence among the followers and being perceived by them as a probable and possible vision (Yukl et al., 2002). In alignment with this, one of the most important challenges in HE settings has been the need for a more focused shared vision of where everyone is heading (Fullan & Scott, 2009) and thus, this dimension of change-oriented leadership may be considered as something which can bridge this gap.

- Encouragement of innovative thinking by followers.

A change-oriented leader can adopt a variety of combinations of behaviors in terms of encouraging innovative thinking by others and proposing innovations himself/herself to foster innovative thinking among the subordinates to initiate, implement and maintain transformations, reforms and innovations (Yukl et al., 2002).

- Risk taking to promote and advance significant changes.

Significant changes are risky and when the need for the change is not clarified enough to the most of the subordinates, they may resist to the change and maintain the status quo. In this respect, job loss, diminished reputation, derailed career and rejection by coworkers can be considered as possible risks when there is a strong resistance to change (Yukl et al., 2002). The four dimensions of change-oriented leadership proposed by Yukl et al. (2002) have been illustrated in Figure 2.3.

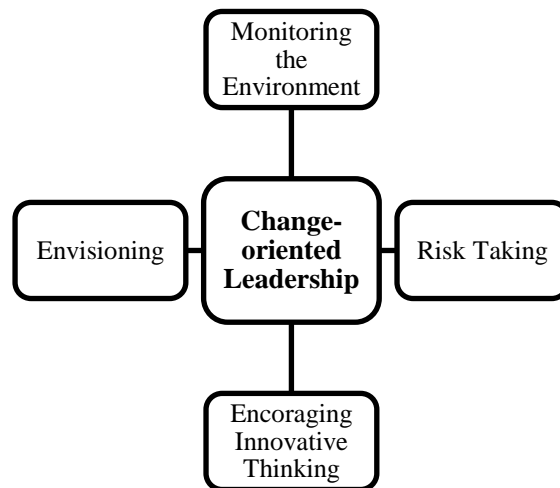


Figure 2.3. Change-oriented Leadership Behaviors (3)

Additionally, in a more recent study (Yukl, 2004) and during development of tridimensional leadership theory as one of the most recent theories of leadership, six change-oriented behaviors were proposed which have been demonstrated in Figure 2.4.

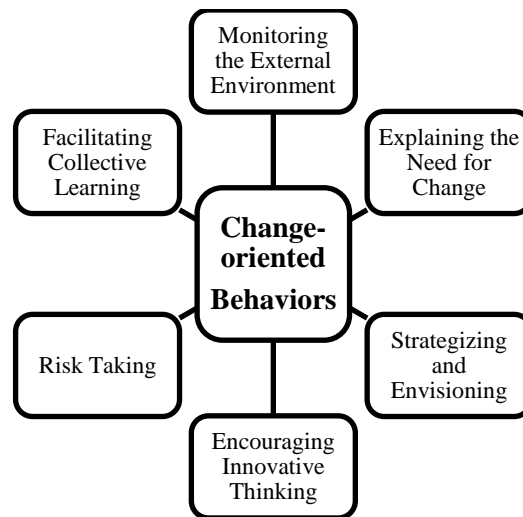


Figure 2.4. Change-oriented Leadership Behaviors (4)

However, in latest taxonomy proposed by Yukl (2012), the managerial practices in general have been clustered into four groups namely change-oriented, task-oriented, human-oriented and external behaviors. In terms of change-oriented behaviors, four subscales have been proposed based on this taxonomy, as depicted in Figure 2.5.

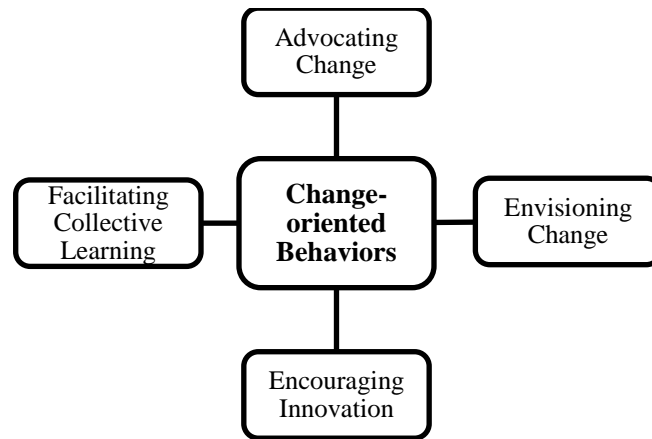


Figure 2.5. Change-oriented Leadership Behaviors (5)

Moreover, some other main behaviors which have been proposed more recently as behaviors of change-oriented leaders (Yukl, 2013) include environmental scanning, events interpretation, studying the activities, products and services of competitors in the market, vision building at organizational level, encouraging and inspiring the people to think out of box and view threats and opportunities differently, strategizing and linking the strategies with the core competencies, encouraging as well as facilitating innovativeness and entrepreneurship skills at organizational level, encouraging and facilitating collective learning at team or organizational level, focusing on and experimenting new approaches to attain objectives, implementing symbolic transformations in line with new vision or strategy, pushing and facilitating efforts to implement major change programs effectively, announcing and celebrating of the progress of change implementation phase, and negotiating agreements with outsiders and influencing them to support change programs.

In terms of the importance of change-oriented leadership practice in educational settings, it may be noted that there is an inertia in educational settings and one possible reason for the inertia found in both initial preparation and continuing

professional development programs for principals and superintendents is the absence of models of change-oriented leadership (Thurston, Clift, & Schacht, 1993).

Regarding universities and colleges, it may be posited that negotiating and reshaping existing HE contexts and implementing the challenging change programs towards Education for Sustainability (EfS) requires a unique set of leadership behaviors (Scott et al., 2012) such as thinking laterally and creatively and listening to different viewpoints before any decision making. These qualities are also consistent with the characteristics of change-oriented leadership explicitly and directly (Arvonen, 2008; Ekvall & Arvonen, 1991; Yukl, 1999, 2012).

In addition, Malm (2008) in his study of the presidents of community colleges in Maryland identified few strategies to conquer the future challenges that universities would face. Among these strategies, visioning and strategizing, communication and an appropriate decision-making process are directly consonant with change-oriented leadership characteristics identified in the main studies focusing on change-oriented behaviors (Arvonen, 2008; Ekvall & Arvonen, 1991; Yukl, 1999, 2012).

Moreover, according to Mader et al. (2013), transformation in HE requires leadership in an environment of co-creation in which universities and their stakeholders interact. The strategy of interaction between different stakeholders in universities is also consistent with developing relationships as one of the characteristics of change-oriented leadership introduced by Yukl (1999).

Regarding envisioning in the context of HE, as one of the characteristics of change-oriented leaders, a shared understanding of the vision has been considered as one of the issues that transformations in universities frame around it (Mader, 2012).

Additionally, supporting, recognizing and rewarding the activities focusing on actively fostering a culture of collegiality and collaboration that encourages teams to get involved in cross-faculty and inter-unit projects, as one of the strategies to change the EfS into a core activity in universities (Scott et al., 2012), is also consonant with the developing relationships as one of the change-oriented leadership behaviors (Yukl, 1999).

With respect to the constructs of change-oriented leadership and after the synthesis analysis of the results of main studies focusing on categorizing leadership behaviors, six dimensions were identified to build the constructs of change-oriented leadership capability in academic contexts which will be discussed in the following sub-sections.

advocating change. Explaining why change is urgently needed is a key leadership behavior in theories of change management. People cannot detect the threats and opportunities when changes in the environment are not sudden and no understandable crisis has occurred. In addition, focusing on leadership performance, leaders are able to provide necessary information with respect to the better performance of similar work units or competitors to encourage implementing change in their respective work unit as well (Kotter, 1996).

In fact, leaders can understand and explain the unwanted and undesirable outcomes which may happen if new problems are ignored or new opportunities are not recognized. Thus, in order to influence people to accept the necessity for change, leaders are required to increase the awareness of the people about the problems without creating an extreme level of distress that would lead to either ignorance of the problem or acceptance of easy but unsuccessful solutions (Heifetz, 1994).

It is notable that in a former study (Ekvall & Arvonen, 1991), it was concluded that two behaviors including pushing for growth and development and initiating new projects characterize promoting change and growth dimension of change-oriented leadership behavior. Moreover, in another recent similar study (Arvonen, 2008), the analysis resulted that pushing for growth and development, initiating new projects and experimenting with new ways of doing things are the three behaviors that explain this dimension of change-oriented leadership behaviors.

The other important issue needs to be discussed is the common phenomenon of resistance to change in organizations. To initiate change programs, leaders are required to have courage to determinedly push for it. In addition, when the leader has the capability of portraying undesirable events as new opportunities and chances for the organization, it will be easier to gain support from the people for initiating innovative strategies. Thus, although a strategy may be proposed by the leader for responding to the opportunities threats, it must not be neglected that involving people with relevant expertise will lead to the development of a better strategy and more commitment to implement it (Yukl, 2012).

As discussed and cited by Yukl (2012), pushing for a costly unnecessary major change when it is not applicable to the situation (McClelland, Liang, & Barker, 2010) as and proposing a major change program without considering the risks and obstacles related to it (Finkelstein, 2006) are the two common forms of inappropriate practices focusing on the issue of advocating change.

It is noticeable that the relevancy of this component of change-oriented behaviors to performance has been confirmed through comparative case studies such

as the study conducted by Kotter and Cohen (2002) as well as one experimental study undertaken by Marks, Zaccaro, and Mathieu (2000).

envisioning change. One of the ways by which leaders can build a strong commitment to the new change strategies is to develop an appealing and achievable vision of what might be gained by work units as well as the organization through implementation of the strategy in the future. If this vision is relevant to the organizational values, ideals, needs of the people and is communicated throughout the entire organization well, it even might be more effective in terms of inspiring and motivating others to implement initiative strategies more effectively (Yukl, 2012).

It must be noted that avoiding false assumptions as well as wishful thinking at the time of developing the vision is crucial since these issues can divert attention from successful innovative strategies (Mumford, Scott, Gaddis, & Strange, 2002) and mislead the organization. In addition, pushing steadily for a risky as well as a vague vision is a major reason for serious performance declines in organizations (Finkelstein, 2006).

As cited and discussed by Yukl (2012), evidence that there is a strong relationship between building an attractive and exciting vision and effective performance has been provided by numerous studies with different methodological approaches such as survey research studies, comparative case studies, and experiments.

It is notable that in the study conducted by Ekvall and Arvonen (1991), it was concluded that giving thoughts and plans about the future is the only one behavior that can describe this dimension of change-oriented behaviors. However, in a more recent

study, Arvonen (2008) stressed sharing thoughts, rather than giving thoughts, and suggested that sharing thoughts and plans about future may be the only right behavior to explain envisioning aspect of change-oriented behaviors.

encouraging innovation and having creativity. Creative and innovative ideas may be stimulated and facilitated by many ways at team or organizational level. So far, many terms have been used in different studies to describe this specific change-oriented behavior such as “intellectual stimulation” and “encouraging innovative thinking”. On the grounds of this behavior of the leaders, the subordinates are encouraged and inspired to do many things such as to look at problems differently, to think outside the box when solving problems, to experiment new and different methods of doing their jobs, and to have the ability to locate ideas elsewhere which can be applied to their current problem or task (Yukl, 2012).

Also, leaders can stimulate the organizational members to propose new and innovative ideas through creating a climate and culture of psychological safety and mutual trust. Moreover, an organizational culture that values creativity, innovativeness and entrepreneurship may be created by change-oriented leaders who are the people that accept creative, innovative and constructive new plans and ideas (Yukl, 2012).

As elaborated by Yukl (2012), the relationship between this change-oriented behavior and performance has been confirmed through research studies with different methodological approaches. Moreover, in terms of having a creative attitude, Ekvall and Arvonen (1991) and Arvonen (2008) found that some behaviors such as offering ideas about new and different methods to do things, willingness to discuss new and innovative ideas, focusing on possibilities and opportunities rather than threats and

problems, as well as encouraging thinking out of the box are a few behaviors related to creativeness of change-oriented leaders.

facilitating collective learning. Improving current strategies and work methods as well as discovering new strategies are the main dimensions of collective learning behavior. Discovering and acquiring this new knowledge through research projects, small-scale experiments, external resources and other approaches can be supported by change-oriented leaders. Other issues such as benchmarking, after-activity reviews, and providing resources and opportunity to test new ideas can also be practiced to facilitate collective learning. In addition, creating a climate of psychological safety plays an important part regarding this concept and it enables leaders to learn from their mistakes and failures as well (Yukl, 2012).

In order to enhance collective learning from both achievements and failures, common tendencies regarding misinterpreting causes and over-generalizing implications must be avoided (Baumard & Starbuck, 2005). Moreover, the organizational members can recognize and address issues and they are also able to identify remedies to avoid a future failure repetition through receiving support and necessary instructions from the leader (Cannon & Edmondson, 2005).

Three strategies including explaining the reason for using new knowledge or technology, teaching how to use it, and inspiring members to use knowledge sharing programs can be initiated by the leaders to facilitate the process of knowledge and technology diffusion and application throughout the organization. It is notable that the strong relationship between facilitating collective learning and performance has been approved strongly on the grounds of conducted comparative case studies and experiments (Yukl, 2012).

risk taking. In general, initiating and implementing major transformations is risky. However, if the need for change is not clear for most of the organizational members and when there is a general interest in maintaining status quo, it might even be riskier. Some of the possible risks that the leader may encounter during process of initiating and implementing change processes include loss of job, diminished reputation, derailed career, and personal rejection by colleagues. These risks can be more serious when there is a strong resistance to change as well. It is notable that many quantitative research studies support the meaningfulness of this behavior as a dimension of change-oriented leadership behavior (Yukl et al., 2002).

Moreover in the studies conducted by Ekvall and Arvonen (1991) and Arvonen (2008), it was suggested that two behaviors including willingness to take risks in decision making and making quick decisions are the two main behaviors related to this aspect of change-oriented leadership.

scanning the external environment. Scanning the external environment as well as detecting threats and opportunities for the organization are the two of the main activities of leaders. In other words, sensitivity to the information regarding customers and clients, suppliers and vendors, competitors, market trends and economic conditions, governmental policies, and technological developments is crucial for most of the leaders in organizations. The information can be acquired through different channels and methods such as reviewing government or industry reports and publications, participating in professional relevant meetings and conferences, communicating with customers and suppliers, examining the products and services of the competitors, market research and building an external network of information sources (Yukl, 2012). The acquired information in the next step needs to be analyzed

and interpreted since interpreting events and explaining the necessity of change is a key behavior in theories of change management (Kotter, 1996). The practice of this behavior is even more important for leaders in some situations such as high dependence of the organization on outsiders, rapid and sudden change in the environment of the organization, the existence of severe competition in the environment, and the existence of severe threats from some of outsiders (Ginter & Duncan, 1990).

According to Yukl (2012), empirical evidence regarding the meaningfulness of this behavior as a distinct type of leadership behavior has been provided through quantitative research studies. In addition, the relationship between this behavior and performance has been supported by a few field studies (Bourgeois, 1985; Grinyer, Mayes, & McKiernan, 1990).

personal and interpersonal capability. At such times, being able to manage emotional reactions to the vagueness and discomfort is very important for the leaders. At the same time, having a high level of interpersonal capability for better understanding of what is happening as well as communicating well with the organizational members to decide about the best possible action for shattering barriers and challenges is also significant for the leaders since in most cases, a human element is a part of the challenge in any academic settings (Scott et al., 2008).

For this reason, in the past few years, many research studies have been conducted focusing on personal and interpersonal capability of academic leaders such as the study carried out by Goleman (1998). It is notable that these two types of capabilities are often referred to as a leader's "emotional intelligence" (Scott et al., 2008).

As defined by Goleman (2000), emotional intelligence is the ability of a person to manage himself/herself and his/her relationships with other people effectively. The four fundamental pillars to construct emotional intelligence are self-awareness, self-management, social awareness, and social skill capabilities. Each of these capabilities consists of some traits. Regarding self-awareness capability, three traits may be noted to construct it including emotional self-awareness, accurate self-assessment, and self-confidence skills. The traits to build self-management capability are self-control, trustworthiness, conscientiousness, adaptability, achievement orientation, and initiative. Empathy, organizational awareness, and service orientation are the three qualities to construct the social awareness capability, and finally, social skill capability category is composed of visionary leadership, influence, developing others, communication, change catalyst, conflict management, building bonds, as well as teamwork and collaboration capacities.

According to the research findings, successful leaders have a considerable strength in self-regulation, self-awareness, motivation, empathy, and social skills as the main emotional intelligence traits (Goleman, 2000, 2004).

In a more recent study, Goleman and Boyatzis (2008) focused on recent research findings in the field of social neuroscience which had revealed subtle new truths about what makes a good leader. These findings shed light on the fact that the behavior of the leaders literally have an impact on their own as well as the followers' brains chemistry. In other words, the individual minds become fused into a single system when they are interacting and in this situation, a great leader is believed to be the one whose behaviors strongly leverages the system of brain interconnectedness. Based on this new view, the concept of emotional intelligence was elevated to social

intelligence as a set of interpersonal qualities built on specific neural circuits (and related endocrine systems) that inspire others to be effective. It is notable that seven constructs operationalize the new concept of social intelligence including empathy, attunement, organizational awareness, influence, developing others, inspiration, and teamwork.

Some capabilities such as motivation to excellence, job commitment, the ability to lead others by example, having integrity, having willingness to learn from mistakes, and the ability to be determined have been reported as the attributes of effective leadership related to personal capability of the academic leaders in HE context. In addition, another set of capabilities including the ability to be concerned about others and to be approachable, being able to inspire others, listening and paying attention to other people opinions and ideas, delegating tasks and allowing ideas to be known and discussed by the people, being able to encourage others to initiate new ideas and be initiative, building and supporting action groups, seeing and recognizing others' activities and works, and the ability to help the staff learn and grow have been proposed as the interpersonal capability of academic leaders in university and college settings (Ramsden, 1998a).

It is notable that other qualities related to the concept of personal and interpersonal capabilities or emotional intelligence have been emphasized. For example Montez (2003) identified that leaders must resolve the tensions that arise in the process of adapting. This is somehow in line with one of the propositions of tridimensional leadership theory since on the basis of this theory, Yukl (2004) has argued that leader's change-oriented style leads to group effectiveness through innovation and adaptation. In addition, the idea of communicating with others

appropriately as well as the idea of reading social dynamics is central to the “community building” aspect of academic leadership definition provided by Wolverton and Gmelch (2002). This is also consonant with reading the environment (Yukl, 2013) and liking to discuss new ideas (Arvonen, 2008; Ekvall, 1991; Ekvall & Arvonen, 1991) capabilities as two change-oriented leadership behaviors. Sahlan, Rahman, and Amin (2015) also in a recent study scrutinized the way by which university lecturers implement an effective commercialization of their services in universities despite the challenges they encounter. In this study, the researchers focused on eight variables related to commercialization behavior. These variables had been categorized in two groups including personal factors (personal contact, personal involvement, personal capability, and knowledge) and environmental factors (resources, knowledge, financial, and role model). In addition, the role of entrepreneurial self-efficacy of academicians towards commercialization of their academic services was also emphasized and some suggestions were made to cultivate this type of behavior of the faculty.

self-regulation. Self-regulation is the first aspect of personal capability (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012). It has been defined as the exploration of thoughts, plans, and actions needed to achieve success through a meta-cognitive process (Usher & Pajares, 2008).

Self-regulation, as a component of emotional intelligence, is analogous to a continuous inner conversation which frees people from being prisoned by their feelings. In fact, this skill helps the people control and channel their bad moods and impulses in useful ways. In other words, self-regulation refers to the ability of the people to control or redirect disruptive emotions, moods and desires. It also reflects

the tendency to suspend quick judgments and to think carefully before taking any actions. The main features of this skill are trustworthiness and integrity, comfort with ambiguity, and openness to change. It is notable that these skills are important for leaders due to two reasons. First, self-regulated leaders are reasonable and can create an environment of trust and fairness. Second, it is an important skill in turmoil and complex business environments where organizations need to compete in order to survive and prosper (Goleman, 2004).

On the basis of the theories underpinning this capability, high performance leaders always select the most beneficial courses of action to achieve their preferred goals determinedly in order to resist temptations, shatter barriers, overcome failures, prevent setbacks, and conquer difficulties over time (Crocker, Luhtanen, Cooper, & Bouvrette, 2003). It is notable that self-regulation can be manifested by the individuals through doing task repetition until this behavior become automatic (Bayer, Gollwitzer, & Achtziger, 2010; Leary, Adams, & Tate, 2006).

Scott et al. (2008) based on an extensive literature review on personal capability to lead universities in the context of change suggested six capabilities to construct self-regulation subscale namely being able to avoid quick judgment as well as problem resolution, having the ability to understand personal strength and weakness points, being able to admit personal mistakes and try to learn from them, having the ability to quickly return to the previous successful level of activity as well as enthusiasm or success, being able to maintain an acceptable balance between life and work, having the ability to keep things perfectly in perspective, being able to work and remain calm under pressure or when unexpected and unplanned incidents take place.

decisiveness. Decisiveness is the second aspect of personal capability (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012). Many research studies supported the idea that providing the opportunity to participate in key decision making processes and inspiring other to communicate with each other openly are significant to effective leadership at department level (Bland, Weber-Main, Lund, & Finstad, 2005; Copurl, 1990; Moses & Roe, 1990; Murry Jr & Stauffacher, 2001).

According to Scott et al. (2008), a few capacities construct decisiveness subscale which are willingness to take a hard decision, having confidence to take any calculated risks, being able to tolerate vagueness as well as hesitation and uncertainty, and the ability to be true to the self-values and ethics.

commitment. The third aspect of personal capability is commitment (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012). As discussed by Bryman (2007), when there are relationships of trust, warmth and mutual respect between the leader and the subordinates' consideration and in other words, the concept of commitment is already in place.

According to Mowday, Steers, and Porter (1979), many theoretical and empirical studies have focused on the concept of organizational commitment in order to explicate it as well as to determine the antecedents and outcomes of it. The results of these studies remarkably supported the proposition that commitment was a main variable in understanding the behaviors of employees in organizations. It may be noted that organizational commitment has received this interest for some reasons such as its predictability for some certain behaviors including organizational turnover, its intuitive appeal and interest among both managers and social scientists, as well as the

opportunities it provides with respect to comprehending the nature of more general psychological processes by which individuals find their purposes in life.

Additionally, Mowday et al. (1979) in their study focusing on developing an instrument to operationalize organizational commitment provided different definitions of this concept on the grounds of the previous literature and argued that most of these definitions focused on behaviors and attitudes related to that concept. In addition, they used the definition provided by Porter and Smith (1970) in which organizational commitment had been defined as the relative strength of an individual's identification with and involvement in a particular organization. According to Mowday et al. (1979), three factors including a strong believe in and acceptance of goals and values set at organizational level, a strong willingness to make significant efforts on behalf of the organization, and a strong desire to maintain membership in the organization may characterize this definition.

In another study (O'Reilly & Chatman, 1986), organizational commitment was proposed to have three constructs including compliance, identification, and internalization. Moreover, Meyer and Allen (1991), conducted a study to develop a new scale for operationalizing this concept. In this study, the researchers went beyond the distinction between behavioral or attitudinal commitments and in other words, commitment was seen and analyzed as a psychological state having three discrete components focusing on a desire, a need and an obligation to maintain employment in the organization. The three construct were called affective commitment, continuance commitment, and normative commitment. Based on this study, affective commitment indicates an emotional attachment to, identification with and involvement in the organization; continuance commitment points out to the awareness of the costs related

to quitting the job in the organization; and normative commitment discusses about the feeling of obligation to maintain employment in the organization.

Also, Skogstad and Einarsen (1999) in their quantitative research focused on scrutinizing change-oriented leadership behaviors in a sample consisting of four organizations. Each of these organizations reflected one of the four main ideal cultures (group, developmental, hierarchical, and rational cultures) proposed by Quinn (1988), Quinn and McGrath (1985), and Quinn and Hall (1983). The results of the analysis yielded a substantial support for a distinct change-oriented leadership dimension. Moreover, the results indicated that in the sample, change-oriented leadership behaviors and some concepts such as job satisfaction, organizational commitment, and evaluations of leader's competence were strongly correlated in the positive direction.

Moreover, Joo, Jun Yoon, and Jeung (2012) examined the extent to which employees' core self-evaluations and the perceived transformational leadership of their supervisors could explain employees' affective commitment to the organization. The results revealed that both independent variables had a positive impact on the dependent variable. However, in terms of the effect size, the dependent variable was more related to transformational leadership rather than employee's core self-evaluations. It is notable that as for transformational leadership, employees showed the highest organizational commitment when their leaders developed the vision, promoted group goals, and provided intellectual stimulation.

In addition, Aydin, Sarier, and Uysal (2013) in another study determined the effect of school principals' leadership styles on teachers' organizational commitment and job satisfaction in Turkey using a meta-analysis approach. The results of this study not only confirmed that transformational leadership style of principals had a positive

impact on teachers' commitment and job satisfaction as two types of school outcomes, but also revealed that as the behavior of administrators departed from transactional towards transformational leadership, the level of job satisfaction as well as organizational commitment among teachers increased.

Other main studies with respect to theorizing and/or operationalizing organizational commitment which play a significant role in the literature include the studies conducted by Porter, Steers, Mowday, and Boulian (1974) and Meyer and Parfyonova (2010).

It is remarkable that in terms of measuring commitment of academic leaders, Scott et al. (2008) proposed some behaviors which are considered as the pillars of this subscale including being motivated and have energy, having desire and eagerness for learning and teaching activities, having willingness to attain the best possible outcomes, being responsible for the related program activities as well as program outcomes, being able to persevere and be determined when the anticipated progress is not achieved, and the ability to join in and undertake low-status work as soon as it is needed.

influencing. Influencing is the first aspect of interpersonal capability (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012). As discussed and cited by Scott et al. (2008), in one study focusing on influence and leadership effectiveness (Brown & Moshavi, 2002), when statistical controls were employed, it was resulted that only idealized influence, which is particularly important in academic settings, was related to all three measures of effectiveness.

Scott et al. (2008) proposed some capabilities which together may explain influencing subscale including the ability to influence effectively on people's behaviors and decisions, being able to work with senior and experienced people inside or outside the university without being daunted, being able to inspire others to attain acceptable outcomes, having the required knowledge to work positively with the staff who have resistance to change or are over-enthusiastic, having the ability to solve the problem through developing and expanding networks among the colleagues, and having the morale to give to and receive positive and meaningful feedbacks from the people.

empathizing. Empathizing is the second aspect of interpersonal capability (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012) which is required to lead HEIs in the context of change.

Empathy refers to the needed capacities to treat people based on their own emotional reactions. In other words, it is a quality to appreciate emotional constructs of people. Expertise in building and retaining talent, cross-cultural sensitivity, and service to clients and customers are the main hallmarks of this competency. This component is the most easily recognized component of emotional capacity. To a leader, empathy means thoughtfully considering employees' feelings as well as other main factors in the process of making intelligent decisions. The quick pace of globalization, the increasing use of teams, and the growing need to retain talent are at least the main three reasons for the significance of empathy as a main part of today's leadership (Goleman, 2004).

In a recent qualitative research study in an American university (Ambrose, Huston, & Norman, 2005), it was found that one important set of factors in effective

departmental leadership was that effective leaders treated people honestly, consistently, inclusively and responsively. In another study (Trocchia & Andrus, 2003), treating the academicians fairly and respectfully was resulted to be a very important ability of effective leaders at department level. In addition, in another study conducted in Australia, it was suggested that when the leaders treat members equally and fairly, building and maintaining morale in the department will be more probable (Moses & Roe, 1990).

Moreover, Goleman (2013) posited that there were three distinct types of empathy based on the focus of the attention of leaders when they exhibit this behavior. These include cognitive empathy which refers to the ability of understanding other person's perspective and is an essential skill for leaders to explain themselves in meaningful ways, emotional empathy which refers to the capacity of feeling what other person feels and is necessary for effective mentoring, managing clients, as well as reading group dynamics, and empathic concern which is associated with emotional empathy and refers to the ability of sensing what another person needs from us.

According to Scott et al. (2008), the behaviors which build the construct of empathizing subscale are the ability to understand and work constructively with students and staff with different backgrounds and experiences, paying attention to different ideas of people and consulting them before making any decision, initiating and expanding team-based programs, and having honesty and truthfulness in dealing with others.

cognitive capability. Diagnosing unexpected incidents accurately, identifying the true dimensions of human as well as technical and administrative issues, determining the value of addressing an emerged problem in detail, and taking

necessary actions in order to solve the identified problems are the fundamentals of cognitive capability of leaders which can also be referred to as contingent intelligence (Scott et al., 2008). Ramsden (1998a) in a study focusing on effective leadership also identified some other cognitive attributes including:

- Thinking strategically and nonlinearly.

This is consistent with encouraging innovative thinking (Yukl et al., 2002) and having creative attitude (Arvonen, 2008; Ekvall & Arvonen, 1991) as two change-oriented leadership dimensions.

- Recognizing achievable and possible outcomes.

Envisioning exciting new possibilities for the organization (Arvonen, 2008; Ekvall & Arvonen, 1991; Yukl, 2013) as a change-oriented behavior is also in line with this cognitive attribute.

- Vision building and goal setting.

This attribute is also consistent with another change-oriented behavior which is developing innovative strategies linked to core competencies (Yukl, 2013).

- Planning programs ahead and avoid reactivity.

Giving and sharing thoughts and plans about future (Arvonen, 2008; Ekvall & Arvonen, 1991), as one of change-oriented behaviors, is also consonant with this cognitive capability.

In summary three subscales construct cognitive capability aspect of leadership capabilities in academic settings which are diagnosis, strategy, and flexibility and responsiveness (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012).

diagnosis. In terms of the diagnosis, one main behavior of leaders is to determine the exact cause of problems as well as to evaluate the significance of problems. This entails the process of scanning the environment thoroughly (Scott et al., 2008) which is consistent with “monitoring the environment” behavior to detect threats and opportunities (Yukl, 2013), as one of the change-oriented behaviors.

Regarding diagnosis capability of academic leaders, Scott et al. (2008) identified some behaviors which may be regarded as the basis for this kind of capability including the capacity to identify the causes of problems and addressing them through taking necessary actions, the ability to recognize the relations between seemingly unconnected actions and tasks, being able to recognize the existing patterns in a complicated setting, and having the ability to identify the main issues from a mass of information in different contexts.

strategy. Strategizing is an art and science of survival and sustainability and HEIs should adopt the strategic development model in order to obtain the competitive advantage to be at the frontline of the progress both at national and international levels (Hussin & Ismail, 2009). This capability in HE context and especially at department level has been thoroughly studied in some recent studies (Ambrose et al., 2005; Benoit & Graham, 2005; Gordon & Stockard, 1991; Stark, Briggs, & Rowland-Poplowski, 2002; Trocchia & Andrus, 2003).

In addition, in another study focusing on successful deans (Scott & Kemmis, 1996), some behaviors which are in line with a part of change-oriented leadership behaviors (Arvonen, 2008; Ekvall & Arvonen, 1991; Yukl, 1999, 2012, 2013; Yukl et al., 2002) were identified as being key elements in this category namely promoting contingently thinking, vision building for the faculties, promoting prioritization, and establishing a flexible talent identification system.

The elements of strategy, as another subscale of cognitive capability of academic leaders include (Scott et al., 2008), include the ability to see and take required actions regarding new opportunities for a new direction, being able to trace out and evaluate the possible outcomes of different actions and activities, having the ability to figure out and solve the problems which might happen in the future based on previous relevant experience, being able to think out of the box and creatively, having an achievable and realistic vision in the area of responsibility, the ability to respond to a confusing situation effectively, and the capacity to set and promote daily work priorities.

flexibility and responsiveness. Flexibility and responsiveness of academic leaders is to a great extent associated with their ability in contingent thinking (Scott et al., 2008). In terms of “contingent thinking” and based on one of the recent studies, it was concluded that adopting different leadership styles to fit changing situations as well as the ability to make decisions under uncertainty are two of the main capabilities of leaders (Aziz et al., 2005). It may be noted that these finding align with having creative attitudes (Arvonen, 2008; Ekvall & Arvonen, 1991) and encouraging and facilitating innovation and entrepreneurship in the organization (Yukl, 2013) as two change-oriented behaviors.

Additionally regarding envisioning, Wolverton and Gmelch (2002) in their analysis of deans spoke of “setting directions” to meet future needs which again is consonant with envisioning a better future for the organization (Arvonen, 2008; Ekvall & Arvonen, 1991; Yukl, 1999, 2004, 2012, 2013; Yukl et al., 2002).

In academic settings, flexibility and responsiveness of academic leaders have been operationalized by three behaviors (Scott et al., 2008) including the ability to fine-tune a set of plans of actions in response to the problems emerged during the implementation phase, the ability to understand errors and learn from them, and understanding that no fixed set of steps existed to solve problems emerged in workplaces.

Managerial Competencies

In this section, required competencies to lead universities effectively in the context of change, which have a great contribution to performance, have been provided. Competence is associated with relevant skills and knowledge in a specific setting. In fact, they are abilities to deliver or perform and are related to performance, their focus is on the present time, and practicing them in stable and predictable situations are productive and efficient (Scott et al., 2008).

There are numerous studies centering around competencies in different settings. For example, in one quantitative study focusing on entrepreneurial competencies in the context of private organizations (Rahman, Amran, Ahmad, & Taghizadeh, 2015), the data from a sample of 134 Base of Pyramid (BoP) entrepreneurs in Bangladesh were collected and the impact of support from large private organizations on entrepreneurship business success through entrepreneurial competencies was empirically explored. The results of the analysis demonstrated that

the technical and training support provided by large private organizations increase the competencies of BoP entrepreneurs

In addition, McDaniel, Ngala, and Leonard (2015) in their study explored the intersection of competency and bullying behaviors, as one of the main gaps in the literature, through examining the literature for both concepts and evolving a model for relating them. The results of the study indicated a strong mediated relationship between the three variables including the victim's self-perception of competency, the reactions of the victim (outcomes), and bullying behaviors. In this study, it was also propounded to examine the link between the variables empirically in the future research.

With regard to academic settings, Middlehurst (1993) categorized department heads' competencies into eight groups. Considering these competencies, it may be argued that an efficient head of department must be skillful and competent at:

- Governing the department (chairing meetings, establishing committees, designing and implementing plans with the collaboration of academic and administrative staff, preparing the department for different internal and external assessments, serving as an advocate for the department to the central administrative body).
- Managing teaching (timetabling and assigning of teaching, off-campus programs management, supervising and scheduling examinations, space and teaching budgets management, ensuring that the curriculum is up-to-date and vigorous).
- Managing personnel (selection and recruitment, assigning responsibilities to the staff, initiating and managing staff

development programs, staff performance evaluation, promotion procedures supervision, handling the issues related to poor performance, participating in grievance hearings, making merit recommendations, informing and consulting with staff over departmental and university matters, conflict management, equal opportunities promotion, and ensuring compliance with legislation).

- Promoting departmental development and creativity (fostering good teaching, assisting in designing professional development plans, research and publication stimulation and maintaining the research ethos, encouraging staff participation in professional activities, representing the department at professional meetings, and encouraging collaborative links within and among departments).
- Working with students and student issues (student related issues such as recruitment, selection, advising, consultation, and assessment, as well as encouraging students to participate in departmental activities, monitoring student evaluations of teaching and pastoral care, appeals management, and liaison with students' representatives, parents as well as employers of the students).
- Representing the department to the institution (interpreting the discipline to the institution, informing central administrative body about department needs and interests, building and maintaining the reputation of the department).
- Serving as a link to external groups (external activities coordination, ceremonial functions, attending meetings of external groups,

processing departmental correspondence and request for information, and completing forms and surveys).

- Managing the budget and resources (departmental budgets preparation, proposition, and management as well as seeking external funding, promoting entrepreneurial activities among staff, grant proposal encouragement, setting priorities for conference and travel funds, monitoring consultancy activities among staff, and preparing annual reports).

In addition, Aziz et al. (2005) in their comprehensive study in American context focused on the complex nature of the role of department heads. They reviewed the literature surrounding department heads task and performance dimensions. The analysis of the surveyed data shed light on 20 top rated most important KSAs (Knowledge, Skills, and Abilities) for success from department heads as well as directors' perspectives. These competencies sorted out by their importance from the most to the least importance include:

- Being able to maintain faculty morale.
- Being able to promote and enhance high quality teaching in the department or program.
- Having leadership skills.
- Having the knowledge of academic staff recruitment policies and procedures.
- Having required abilities to communicate with the dean effectively.
- Having the ability to manage multiple roles as the department chair or a director.

- Having interpersonal skills.
- Being skillful in decision making in uncertain circumstances.
- Having the requisite knowledge of academic staff selection policies and procedures.
- Being knowledgeable in terms of procedures pertaining to academic staff promotion and tenure.
- Being able to deal with unsatisfactory faculty performance and provide timely feedback for that.
- Having required knowledge in terms of funding from internal and external resources.
- Being able to communicate different needs pertaining to the department or programs to the upper level administrators.
- Being able to promote faculty research activities.
- Having the ability to promote the image or reputation of the department or the program.
- Being able to convey performance criteria as well as assessment process effectively to the administrative and academic staff.
- Having the ability to foster the development of individual academicians' talents and interests.
- Being skillful in conflict management.
- Being able to design, refine, and assess programs or curriculums.
- Having the ability to assess teaching.

It is notable that according to Scott et al. (2008), eleven categories of skills and competencies at department level were reported by Tucker (1992) to be merited a

considerable attention in American HE system namely budgeting and financial related activities, curriculum and program design, administrating the department, communicating with external bodies efficiently, faculty affairs management, internal communication, legal related issues and activities, office management, professional development, staffing, and student affairs.

generic and role-specific competency. Researchers have found that special competencies are required to understand leadership situations and the necessary strategies or behaviors to deal with specific external threats. In addition, leadership development programs focusing on capacities such as social intelligence, empathy, situational awareness, and self-awareness to improve leaders' flexible and adaptive leadership skills must be invested. It is notable that identifying the competencies that are necessary in order to detect threats and opportunities in order to understand them and take necessary actions about them must be addressed by researchers as well (Yukl & Mahsud, 2010).

According to Scott et al. (2008), role-specific and generic competency are the two type of required skills to construct a part of the Academic Leadership Capability Framework. In other words, generic and role-specific competencies help provide a scaffold for diagnosis and a source for shaping the right response and delivering it in partnership with all the other players concerned.

university operations. University operations is one the two subscales to construct generic competency scale required to lead universities effectively in the context of change (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012). It is notable that it includes a range of skills extracted from an in-depth literature review of leadership and change in educational settings. They include being clear about the

role of risk management and litigation processes in workplaces, having a general knowledge about the operations of universities, having a good knowledge about the relationships between industries and universities, having the ability to help the staff learn how to initiate and implement change programs successfully, being able to manage the meetings successfully, and having perfect skills in terms of administration and resource management (Scott et al., 2008).

self-organization skills. The second sub-category under generic competency of academic leaders is self-organization skills (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012). This type of skills comprises some capacities such as the ability to manage personal and professional learning and development programs successfully, being an IT proficient in terms of communicating with others through IT equipment and doing the job effectively, having time management and work organizing skills, and having a sound ability in terms of presenting ideas to different groups of people (Scott et al., 2008).

learning and teaching. This is the only one subscale to provide measurements for role-specific competency scale (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012). It includes a set of skills such as having awareness and related knowledge about developing learning programs in academic settings effectively, being up-to-date and having sound knowledge regarding engagement of students in productive learning programs effectively, being familiar with the methods by which HE learning programs are developed and evaluated, having knowledge about initiation and implementation of new learning programs in HE effectively, have a sound set of skills in terms of current learning and teaching developments, and having the skills of

identification and dissemination of good managerial practices focusing on learning at different levels of HEIs (Scott et al., 2008).

Leadership Performance

This section covers the issues related to leadership performance effectiveness in HE and the studies focusing on theorizing as well as operationalizing and assessing this concept.

Performance measurement as an established concept in a variety of organizations has gained a renowned importance (Greiling, 2005). As a matter of fact, in modern business management, a basis for the organization to evaluate its progress towards its predefined objectives is provided through performance evaluation and this evaluation helps the organization identify its strengths and weakness points and also help it decides on its future initiatives to improve its performance (Purbey, Mukherjee, & Bhar, 2007).

In other words, performance evaluation is a tool for effective management and thus it cannot be regarded as an end. Indeed, to attain organizational effectiveness, the output of performance evaluation system must be transmitted from measurement to management. Additionally, the system must be a dynamic system and could anticipate new changes in strategic direction of the organization and adjust itself to these transformations. In terms of the importance of performance evaluation in academic settings, it may be noted that universities must establish a performance evaluation framework to provide measurements for organizational performance as well as to link the performance with organizational objectives since a comprehensive performance evaluation system was considered as the main key for universities' survival in current turbulent environment. This mirrors the fact that to evaluate university performance,

the impact of teaching and research on organizational and strategic goals merit a significant consideration and attention. In other words, the results of the evaluation approaches which only rely on financial outcomes may not be viewed as suitable and accurate in academic settings (Zangouinezhad & Moshabaki, 2011).

This is also consistent with result-oriented leadership perspective. From this perspective, training is one of the most important contributing factors to performance. In other words, better performance and decrease in problems are the two evident impacts of leadership development programs. This is the main reason for prioritizing training as a main managerial activity in organizations. Therefore, a system must be established at any required level which needs to be tied to appropriate actions for ensuring effective outcomes as well as educating the staff to see and predict the future. To establish this system, taking some steps are crucial including developing a clear job description, identifying the required specific skills to perform each job, setting specific learning objectives, initiating and implementing a training action plan, providing constant evaluation and feedback of the performance, and teaching and cultivating the staff to understand their effect on the leader's operations. It may be noted that poorly trained staff cannot contribute to hit performance marks since definitely they would be short-changing themselves (Longenecker, 2007).

According to Ramsden (1998a), characteristics of effective academic leadership which resembles good university teaching include leadership in teaching, leadership in research, having a remarked strategizing, envisioning, as well as networking capabilities, having collaborative and motivational leadership capacities, having fair and efficient management skills, focusing on developmental issues and recognition of performance, and having sound interpersonal skills. It is notable that the

focus of good university teaching is on clear goals, challenge and explanation, feedback and support, appropriate assessment, independence, and improvement through evaluation.

From student perspective, an effective academic has some special characteristics. These include some qualities such as listening effectively, helping to solve problems, understanding the financial pressures on students, providing required information about subjects and running courses, not trying to fob off the students, following up on issues, criticizing constructively, working with student representatives in order to get things done, communicating with students' union about different issues, giving students a clear understanding about what is expected to achieve the appropriate results, being flexible, recognizing that students might need part time jobs, being supportive about involvement in activities beyond the course, being available and approachable to discuss work, being an expert communicator, being able to turn up to lecturers, being enthusiastic, having creativeness, challenging everything and making students think deeply, and being able to return works and marks on time (Shorrock, 2002).

As cited by Scott et al. (2008), there is lack of research in HE regarding leadership performance (Bryman, 2007). Focusing on academic context, it may be debated that one of the earliest studies in terms of operationalizing effectiveness in HE settings was conducted by Cameron (1978). In this study, not only the concept of effectiveness in university settings was elaborated, but also the obstacles in evaluating university effectiveness as well as solutions to these barriers were debated. Moreover, nine dimensions of university effectiveness were proposed in this study based on an extensive literature review including student educational satisfaction, student

academic development, student career development, student personal development, faculty and administrator employment satisfaction, professional development and quality of the faculty, system openness and community interaction, ability to acquire resources, and organizational health. The analysis of the collected data in this study supported the proposed dimensions of university effectiveness considerably.

Ramsden (1991) also focused on leadership performance indicators associated with academician's teaching ability in Australian HE context and developed an instrument to operationalize this function of universities from students' perspective based on British models of HE. The reliable and valid instrument was called the Course Experience Questionnaire (CEQ) and was composed of five scales including good teaching, clear goals and standards, appropriate workload, appropriate assessment, and emphasis on independence.

In another recent research, an empirical study was conducted in Indonesian HE context to examine the impact of participation in decision making process on academicians' performance due to lack of significant attention on this topic in educational management area (Sukirno & Sununta, 2011). Through this quantitative study, it was found that participative decision making as well as academic rank had a significant impact on lecturers' performance. In other words, the results shed light on the fact that involving academicians in decision making process not only enhances their own performance but also improves the organizational performance.

Gmelch (2000) also conducted a study about deans' leadership succession and focused on the process by which academics go through to get settled into a new deanship and proposed that the aforesaid process was analogous to the process by which executives in business corporations go through to get settled into their new

position. The process, as cited by this scholar, is composed of five steps namely taking hold, immersion, reshaping, consolidation, and refinement (Gabarro, 1985). Additionally, Gmelch (2002) stressed academic leadership at departmental level and proposed three areas of influence which are needed to create necessary conditions in order to develop academic leaders. These areas include a theoretical and deep understanding of tasks, functions, and responsibilities, the requisite skills to attain the results through collaboration and working with academic, administrative, office staff, and students, and lastly, practicing to learn from mistakes and perfecting the art of leadership.

It may be noted employability of the university graduates has been recognized widely as another main performance indicators to evaluate the effectiveness of HEIs (Smith, McKnight, & Naylor, 2000). In other words, Smith et al. (2000) in their research, proposed a method to develop employment-related indicators of university performance in UK and emphasized on the lack of comprehensive research studies about university performance measurement.

As cited by Zangoueinezhad and Moshabaki (2011), there are other studies focusing on performance evaluation in HE using different methodological approaches such as data envelopment analysis (Abbott & Doucouliagos, 2003; Avkiran, 2001; Fandel, 2007; Johnes, 2006), statistical methods (Park & Lohr, 2007), productivity indexes (Sarrico, Teixeira, Rosa, & Cardoso, 2009), and Malmquist indices (Worthington & Lee, 2008).

It is notable that based on an extensive literature review focusing on leadership performance effectiveness in HE settings, 25 key indicators, categorized into 5 clusters, were identified by Scott et al. (2008) which were propounded to be the true

indicators of leadership performance in HEIs settings. They embrace personal and interpersonal outcomes, learning and teaching outcomes, recognition and reputation, financial performance and effective implementation (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012).

personal and interpersonal outcomes. Creating a collegial environment in academic settings has been recognized as one of the most prominent facets of the literature on academic work. In other words, managerialism practices in universities which erode collegiality are disliked (Scott et al., 2008).

According to a recent study (Trocchia & Andrus, 2003) focusing on effective leaders at department level in US, it was suggested that cultivating a collegial department can be considered as one of the main abilities of effective leaders. In another study regarding the impact of collegiality on satisfaction (Ambrose et al., 2005) in one of American universities, it was found that collegiality or absence of it was one of the main contributory factors in satisfaction or dissatisfaction among academicians and also creating a sense of community among academicians was one of the main behaviors practiced by effective heads of departments. Moreover, communicating the department's needs to the dean as another aspect of leadership effectiveness at department level was found by Benoit and Graham (2005).

Five indicators construct personal and interpersonal outcomes category of leadership performance in HE settings (Scott et al., 2008) which are attaining self-professional development goals, managing to establish a friendly and interconnected workplace, being able to involve stakeholders outside HE constructively in one's work, achieving an acceptable support from the staff, and having the ability to foster the leaders of the next generation.

learning and teaching outcomes. Five critical leadership dimensions in developing and improving teacher and student learning have been revealed in a recent study (Robinson & Timperley, 2007) including educational direction provision, guaranteeing strategic alignment, creating a community to increase student success, constructive problem solving processes involvement, and selection and development of smart tools to evaluate learning and teaching. In addition, based on this study, strong norms of collective responsibility and accountability for student achievement and wellbeing was addressed as one qualities of effective professional communities.

Based on an extensive literature review, six leadership performance indicators for learning and teaching outcomes subscale of the leadership performance effectiveness scale in academic settings have been proposed (Scott et al., 2008). They include sound graduate outcomes achievement, equity groups' representation enhancement, improvement of student satisfaction ratings towards learning and teaching, student retention rates increase, increasing the quality of learning and teaching programs, and winning awards and prizes related to teaching and learning.

recognition and reputation. According to Bland, Weber-Main, et al. (2005), the recruitment of highly prominent researchers has been proposed to be one of main features of the heads of research-productive departments at one American university. Based on another US study, the ability to recruit and retain outstanding researchers has been identified as a key strategy to raise research productivity at a research-oriented university (Snyder et al., 1991).

It may be noted that five leadership performance indicators were identified to construct recognition and reputation subscale of leadership performance effectiveness scale in HE context (Scott et al., 2008). These include a high-profile attainment in

responsibility, attainment of positive outcomes from reviews of the area carried out by the stakeholders or third bodies outside the university, being invited to present new and main issues focusing on learning and teaching programs to key groups, having many referred publications focusing on teaching and learning, and receiving positive feedbacks from users regarding the area of responsibility.

financial performance. According to Ramsden (1998b), funding and performance in HE are being connected through an international movement. As discussed by Robinson and Timperley (2007), when it comes to resources, a key leadership challenge is to align resources to goals rather than to treat resource acquisition as an end in itself. Also, Bryk, Sebring, Kerbow, Rollow, and Easton (1999) used the metaphor of plucking presents from a Christmas tree to describe leadership that gathers additional resources.

In addition, managing money, space and people to facilitate research studies was identified as a mark of effective leaders in research-oriented departments in one American university (Bland, Center, Finstad, Risbey, & Staples, 2005). Moreover, based on the results of another study conducted in one of American research universities, securing the financial resources was viewed as one of appropriate leadership practices (Lindholm, 2003).

In terms of financial performance of academic leaders in HE settings, four indicators were suggested by Scott et al. (2008) including positive financial outcome achievement in the area of responsibility, being able to meet student load targets, being able to secure required funds to invest on learning and teaching, and winning financial resources for the area of responsibility.

effective implementation. Robinson and Timperley (2007) cited and discussed several different ways in which leaders gained commitment to address problems. One of these strategies involved making the challenge of change explicit at the outset of a project by discussing the likely difficulties and the support that would be needed (Phillips, McNaughton, & MacDonald, 2001).

The five leadership performance indicators for effective implementation as the last subscale of leadership performance scale (Scott et al., 2008) include implementing innovative policies and transformation practices successfully, being able to deliver agreed and planned tasks on time and with a sound quality, being able to implement team projects focusing on teaching and learning successfully, having the ability to establish effective learning systems and infrastructures, and implementing change programs successfully.

Summary

In this chapter a review of a variety of topics such as change and leadership, HEIs and their related issues, change-oriented capability, personal capability, interpersonal capability, cognitive capability, generic competency, role-specific competency, and leadership performance in HE were provided. It is noticeable that the next chapter covers all the issues regarding methodological procedure in this study.

CHAPTER 3

METHODOLOGY

Introduction

This chapter provides descriptions and explanations of the methodological issues of the study. In other words, philosophical assumptions of the study, research design, sampling and population issues in the pilot study, known as Leadership In Malaysian Educational Organizations 1 (LIMEO-1) as well as in the actual study (LIMEO-2) are debated. Also, the measurement instruments and their content validity, pilot study and its related issues such as reliability estimation, and finally, the proposed statistical techniques for answering research questions are discussed.

The main exogenous constructs in this study are leadership capability (personal, interpersonal, cognitive, and change-oriented) and managerial competency (generic and role-specific) and the main endogenous construct is leadership performance. Additionally, the main issues in Malaysian HE to be addressed in this study are priorities, values, challenges, and solutions.

As discussed in chapter one, the following 3 questions are the main research questions to be answered in this study:

1. What are the descriptively prominent elements of capabilities and competencies in explaining leadership performance as well as the main leadership performance indicators in Malaysian HEIs and its sectors?
2. To what extent different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian academic context?

- i. To what extent different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian HE system?
 - ii. To what extent different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian public research & comprehensive HEIs?
 - iii. To what extent different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian public focused HEIs?
 - iv. To what extent different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian private focused HEIs?
3. What are the main issues in Malaysian academic context from the perspectives of academic leaders?
 - i. What are the priorities in Malaysian HE and its sectors from the perspectives of academic leaders?
 - ii. What are the values in Malaysian HE and its sectors from the perspectives of academic leaders?
 - iii. What are the challenges in Malaysian HE and its sectors from the perspectives of academic leaders?
 - iv. What are the solutions in Malaysian HE and its sectors from the perspectives of academic leaders?

Philosophical Worldview

As quoted by Creswell (2009), although philosophical worldviews mainly remain hidden in research (Slife & Williams, 1995), they will have an impact on the practice of research and are required to be identified. Mainly there are four philosophical perspectives in conducting a research which are post-positivism, constructivism, advocacy/participatory, and pragmatism (Creswell, 2009).

The philosophical worldview to support this study is post-positivism. Post-positivism which sometimes is called scientific method, science research, or empirical science is the worldview that guide the researcher to shape the research and especially the research design. From this perspective, causes probably determine effects of outcomes (determination); the intent is to reduce the ideas into small, discrete set of ideas to test variables by which the questions are made (reductionism); the measurement is based on careful observation of the objective realities and developing numeric measures for these observations (empirical observation and measurement). Moreover, based on this worldview, theories and rules that govern the world need to be tested and verified (theory verification). Thus, the researcher begins the research with a theory, collects the required data, analyze the data and based on the findings, support or refute the theory, and makes necessary modifications before additional tests are made (Creswell, 2009).

Research Design

On the grounds of the assumptions of post-positivism worldview, this research will be a quantitative study. This selection is in alignment with the nature of the problem in the study since to gap the bridges, variables need to be measured, the relationship among the variables will be investigated, theories will be tested and the

results will be applied to many people or the target population. The main types of quantitative research designs and their primary use are listed below (Creswell, 2012):

- Survey design: used to describe trends for a population of a people.
- Correlational design: used to relate or associate the variables in a predictable pattern for one group of people.
- Experimental design: used to explain whether an intervention have impact on an outcome for one group as opposed to another group.

The main design of this study is a survey design. Survey research design is a quantitative procedure in which a survey is administered by a researcher among a sample or the entire population of people and on the grounds of the collected responses, the attitudes, opinions, behaviors or characteristics of a population can be explained. In other words, through this approach, quantitative data is first collected and then analyzed and interpreted; statistical procedures are used in order to describe the trends about responses to the questions; research hypotheses are tested using inferential statistics; individual opinions about policy issues are determined; important beliefs and attitudes are identified; and programs are evaluated (Creswell, 2012).

There are two kinds of surveys including cross-sectional and longitudinal survey design. This study will be conducted using a cross-sectional design. Cross-sectional survey designs, by which the data are collected at one point in time, have different types. They may be used to examine current attitudes, beliefs, opinions and practices. They also can be used to make comparisons between educational groups in terms of attitudes, beliefs, opinions and practices or even may be used to measure community trends, evaluate programs and assess social systems like students and teachers (Creswell, 2012).

Researchers mostly use a Likert rating scale in designing questionnaires to be used in surveys so that respondents can use this scale to answer the questionnaire items. A Likert survey or rating scale is a measure that asks individuals to indicate their level of agreement with various statements about a particular person, thing, or idea (Gall, Gall, & Borg, 2003).

The use of the questionnaires is common in educational research as a method of data collection when the researchers are inquiring about opinions and attitudes. Moreover, the researchers conduct descriptive studies to present basic demographic information about the respondents and to obtain more details about the people engaged with the world around them (Nardi, 2003).

As depicted in the conceptual framework and based on the discussions made in the statement of the problem section in chapter one, since this study mostly is meant to examine the predictability of competencies and capabilities to explain leadership performance in Malaysian HEIs, the survey design deems to be the proper selection. In other words, descriptive as well as inferential statistics will be used to analyze the collected data of the sample and inferences will be drawn to the population to generalize the findings.

Sampling and Population

According to Creswell (2012), in survey studies a sample is first selected and studied by the researcher and then the findings are generalized from the sample to the population.

In this study, academic leaders, which refer to vice-chancellors, deputy vice-chancellors, deans, directors, deputy deans, deputy directors, heads of departments,

and professors without any formal positions in Malaysian HEIs, are the target population. Based on the design of the study, a group of academic leaders from 9 public and private HEIs (5 public universities and 4 private universities) constituted the sample of the pilot study. These 9 universities were selected randomly from a list of Malaysian HIEs published in www.universitymalaysia.net and have been listed below:

- International Islamic University Malaysia (IIUM)
- Universiti Malaysia Perlis (UniMAP)
- Universiti Malaysia Sabah (UMS)
- Universiti Malaysia Kelantan (UMK)
- Universiti Malaysia Sarawak (UNIMAS)
- Malaysia Campus of University of Nottingham
- Universiti Teknologi Pertronas (UTP)
- Kolej Universiti Insaniah
- Universiti Tun Abdul Razak

Regarding the actual study, academic leaders from 25 institutions (13 public and 12 private universities) were focused. These 25 randomly selected universities from the above-mentioned website have been listed below:

- Universiti Malaya
- Universiti Kebangsaan Malaysia
- Universiti Putra Malaysia
- Universiti Sains Malaysia
- Universiti Teknologi Malaysia
- Universiti Tun Hussein Onn Malaysia

- Universiti Utara Malaysia
- Universiti Pertahanan Nasional Malaysia
- Universiti Teknikal Malaysia Melaka
- Universiti Sains Islam Malaysia
- Universiti Malaysia Pahang
- Universiti Pendidikan Sultan Idris
- Universiti Teknologi MARA
- International Centre for Education in Islamic Finance
- Universiti Tunku Abdul Rahman
- Penang Medical College
- Wawasan Open University
- Curtin University
- Swinburne University of Technology
- Cyberjaya University College of Medical Sciences
- Universiti Tenaga Nasional
- Taylor's University
- Multimedia University
- Monash University Malaysia
- Nilai University

It is worth noting that academic leaders from 18 out of the 20 public universities in Malaysia participated in this study. Focusing on these institutions and as quoted by Creswell (2012), the population coverage error was reduced (Salant & Dillman, 1994) since data were collected from 18 universities.

Pilot Study Instrument

Any researcher have three options to utilize an instrument in a research (Creswell, 2012) namely using available instruments, modifying the existing instruments, and designing new instruments. In the pilot study and following these criteria to select an appropriate instrument, the standard instrument developed by Scott et al. (2008) through ALTC study was employed to operationalize personal capability, interpersonal capability, cognitive capability, generic competency, role-specific competency, and leadership performance.

In addition, through an extensive literature review regarding change-oriented leadership behaviors, one scale was developed by the researcher to provide measurements for change-oriented capability. Thus, the questionnaire, which was distributed in the pilot study, comprised of a cover letter, participant's profile section, and the scales of personal capability (15 items), interpersonal capability (12 items), cognitive capability (14 items), change-oriented capability (64 items), generic competency (10 items), role-specific competency (6 items) and leadership performance (25 items). A Likert scale starting from low importance to high importance was also used to enable the respondents to rate the items of the survey instrument:

1= low importance

2= low to medium low importance

3= medium importance

4= medium to high importance

5= high importance

It is noteworthy that since a 5-point Likert scale in the previous similar studies had been employed, the same Likert scale was used in this study to enable the researcher to make item-by-item comparisons with the findings of the previous research works. Moreover, with respect to minimizing the problems associated with Common Method Variance (CMV) bias, as a validity threat to model building studies in which self-report questionnaires are employed to collect data (Reio, 2010), the following procedures were followed to minimize the likelihood of CMV:

- Anonymity and confidentiality of the participants were ensured during data collection.
- Clearly and precisely written items were used under each scale.
- Participants were informed that there was no preferred or correct answer and only their honest appraisal of the item was desired.
- A clear instruction for completing the survey was provided.

It is remarkable that after analyzing the collected data in the piloting phase through FA, the resulting components, as modified scales in Malaysian academic context, were used to collect data for the actual study to answer research questions.

change-oriented capability scale. The two standard instruments to measure change-oriented leadership style are the Change-centered, Production-centered and Employee-centered (CPE) and Managerial Practices Survey (MPS) instruments.

The CPE instrument, which was first developed by Ekvall and Arvonen (1991), is an instrument that measures task, relation and change-centered (oriented) behaviors. It has thirty items and each ten item operationalize one type of leadership styles. There

are four subscales under change-oriented leadership style namely promoting change and growth (2 items), having a creative attitude (5 items), risk taking (2 items), and having visionary qualities (1 item). Although this instrument was developed in Sweden, it collected data from an international pool of leaders in Sweden, Finland, and the United States (Ekvall & Arvonen, 1991) and was used successfully in a variety of research studies (Andersen, 2010; Ekvall & Ryhammar, 1998, 1999; Hansson & Andersen, 2007; Ryhammar & Smith, 1999; Sellgren et al., 2006, 2008; Skogstad & Einarsen, 1999; Vardaman, 2013).

MPS is another instrument to provide measurements for four aspects of behaviors including change-oriented, task-oriented, relation-oriented and external behaviors styles (Yukl, 2012). In this instrument, change-oriented leadership scale comprises four subscales and each subscale includes four items. These subscales are advocating change, envisioning change, encouraging innovation, and facilitating collective learning.

Nevertheless, in this study the scale of change-oriented capability was developed by the researcher through an extensive literature review of the most important studies in terms of theorizing change-oriented leadership (Arvonen, 2008; Ekvall, 1991; Ekvall & Arvonen, 1991; Yukl, 1999, 2004, 2012, 2013; Yukl et al., 2002). This scale includes six subscales which are advocating change (11 items), envisioning change (9 items), encouraging innovation and creativity (13 items), facilitating collective learning (14 items), risk taking (5 items), and monitoring the external environment (12 items). Example items are “Explaining why the change is necessary and needed”, “Articulating a clear, appealing vision of what can be attained by the work unit or university”, “Encouraging people to suggest novel ideas”,

“Providing resources and opportunities to test new ideas”, “Making quick decisions when necessary”, and “Being sensitive to the information regarding the economic conditions”.

other capabilities, competencies and performance scales. The survey instrument developed by Scott et al. (2008) in the ALTC study was used in the pilot study to operationalize personal capability, interpersonal capability, cognitive capability, generic competency, role-specific competency, and leadership performance. This instrument had been developed based on a review of more than 20 years of research in the area of HE leadership (Scott et al., 2008). In addition, the items had already been tested in studies of successful early career graduates in 9 professions (Vescio, 2005) and a large study of effective school leaders (Scott, 2003). Moreover, the instrument had been used in another recent study focusing on tertiary education leadership in Australia and New Zealand (Scott & McKellar, 2012). It is noteworthy that the items of these scales were directly in alignment with those organizational values and attributes that characterize the most change capable universities and were also consistent with the distinguishing attributes of effective HE lecturers (Scott et al., 2008).

personal capability scale. This scale consists of 15 items which had been categorized into three subscales namely self-regulation (6 items), decisiveness (4 items), and commitment (5 items). Example items are “Admitting to and learning from my errors”, “Being willing to take a hard decision”, and “Persevering when things are not working out as anticipated”.

interpersonal capability scale. Influencing (7 items) and empathizing (5 items) are the two subscales under interpersonal capability scale (12 items). Example

items are “Motivating others to achieve positive outcomes” and “Being transparent and honest in dealings with others”.

cognitive capability scale. Diagnosis (4 items), strategy (7 items), and flexibility and responsiveness (3 items) are the three subscales used to measure cognitive capability (14 items). Example items are “Recognizing patterns in a complex situation”, “Seeing and then acting on an opportunity for a new direction”, and “Making sense of and learning from experience”.

generic competency scale. University operations (6 items) and self-organization (4 items) are the two subscales used to provide measurements for generic competency scale (10 items). Example items are “Understanding the role of risk management and litigation in my work” and “Being able to organize my work and manage time effectively”.

role-specific competency scale. Learning and teaching (6 items) is the only subscale to operationalize role-specific competency scale. Example item is “Understanding how to implement successfully a new HE program”.

leadership performance scale. Leadership performance scale (25 items) has been operationalized in terms of five subscales including personal and interpersonal outcomes (5 items), learning and teaching outcomes (6 items), recognition and reputation (5 items), financial performance (4 items), and effective implementation (5 items). Example items are “Establishing a collegial working environment”, “Achieving high-quality graduate outcomes”, “Publishing refereed papers and reports on learning and teaching”, “Winning resources for your area of responsibility”, and “Successful implementation of new initiatives”.

Pilot study

In the pilot study (LIMEO-1), the main objective of the researchers is to make changes to or modify the developed or standard instruments. This modification is done based on feedbacks from a small number of individuals who completed and evaluated the instrument. Thus, the concerns of these individuals are reflected in the final version of the instrument. Because the pilot group provides feedback on the questionnaire, they must be excluded from the final sample for the study (Creswell, 2012). Consequently, all the academic leaders participated in the pilot study phase of this research will be excluded from the final sample list.

The second objective of the pilot study in this research was to check the reliability of the scales developed by Scott et al. (2008) as well as the change-oriented scale developed by the researcher in the context of Malaysian HE. The third objective of the piloting procedure was to identify the main components constructing leadership capabilities, managerial competencies, and leadership performance to collect data for the actual study.

preliminary analysis.

content and theoretical validity of the initial instrument. Content validity refers to the evidence that the content of a scale matches to the content of the construct it was designed to cover (Field, 2013). For this purpose, the scale of change-oriented capability developed by the researcher as well as other standard scales used in the study were checked for content and theoretical validity by researcher's supervisors. In fact, these academicians based on their established history of research and writing, formal education in the field, and university work experience checked the content and theoretical issues of each subscale of the scales in terms of many factors such as

Malaysian culture and current situation of Malaysian HE. This stage was carried out through submitting the pilot study instrument to the supervisors and requesting them to check the content and theoretical validity of the instrument. The results of these procedures highlighted the fact that the scales were valid contently and theoretically.

survey distribution and demographic information. The online version of the pilot study survey was designed using Google Form application and was administered among 585 academic leaders from 9 randomly selected public and private universities. To administer the online survey, one email was sent to the potential respondents in the selected public and private universities to invite them participate in the survey. Through this email, the survey URL and a brief explanation and guidelines for filling out the survey were provided. The respondents were also informed that their information would remain confidential. Additionally, four electronic reminders were sent to the potential respondents to ask non-respondents to complete the survey and to appreciate others who had already filled out the survey. In total, 90 completed surveys were collected (response rate = 15.85%). It is remarkable that although the typical response rate for an online survey is 30%, there is no standard for a minimum acceptable response rate in online surveys (Hamilton, 2003). In Table 3.1, the selected demographic information of the respondents of the pilot study survey have been summarized.

Table 3.1
Main Demographic Information of the Participants in the Pilot Study

Demographic Variable	Pilot Study	
	Frequency	Percent
Gender		
Male	66	73.3
Female	24	26.7
Age group	Frequency	Percent
Under 36	4	4.4
36-45	32	35.6
46-55	30	33.3
56-65	18	20.0
Over 65	6	6.7
Academic qualification	Frequency	Percent
Professor	32	35.6
Associate Professor	26	28.9
Assistant Professor/ Senior Lecturer	22	24.4
Other	10	11.1
University Type	Frequency	Percent
Public	67.0	74.4
Private	23.0	25.6
Leadership role outside HE	Frequency	Percent
Yes	45	50.0
No	45	50.0

missing value analysis. After data collection and at the time of screening the data for starting quantitative data analysis, encountering missing values would be a part and parcel of the analysis. If the pattern of the missing values is non-random, then the analysis of the dataset containing missing values would be problematic (Ho, 2013).

As cited by Ho (2013), if only less than 5% of data points in a large dataset are missing in a random pattern, the problems are less serious and almost any approaches taken to handle the missing values would result the same (Tabachnick & Fidell, 2001). In this research, missing value analysis in Statistical Package for the Social Sciences (SPSS) was employed to highlight the pattern of missing values.

There are a few strategies to deal with missing values such as list-wise deletion, pairwise deletion, mean substitution, regression-based imputation, and Expectation-Maximization (EM) algorithm. As cited and discussed by Ho (2013),

While the first four methods have some side effects on the data as well as the results of the analysis, EM algorithm has some advantages such as avoiding impossible matrices (e.g., non-positive definite matrices), avoiding model overfitting, and producing realistic estimates of variance (Tabachnick & Fidell, 2001). Thus, this algorithm was used to handle the issues of missing values.

The main assumption of EM technique is that the data must be missing at random. To check whether this assumption has been met, the significance level of Little's MCAR (Missing Completely At Random) test for the items of each subscale must be checked. If the significance level for this test is more than 0.05, it may be concluded that the data is missing randomly and thus, EM algorithm may be used to predict and replace the missing values. However, another accurate regression-based method also was employed to handle the issues of missing values in subscales which failed to meet the assumption of EM technique. Table 3.2 summarizes the results for each subscale.

Table 3.2
Missing Values Analysis Results

No.	Subscale name	Subscale items	Missing (Number)	Missing (percent)	Sig. of Little's MACR test	Method employed
1	Self-regulation	6	3	0.56%	0.107	EM
2	Decisiveness	4	4	1.11%	0.966	EM
3	Commitment	5	5	1.11%	0.178	EM
4	Influencing	7	4	0.63%	0.227	EM
5	Empathizing	5	10	2.22%	0.607	EM
6	Diagnosis	4	4	1.11%	0.850	EM
7	Strategy	7	6	0.95%	0.075	EM
8	Flexibility and Responsiveness	3	1	0.37%	0.051	EM
9	Advocating Change	11	9	0.91%	0.896	EM
10	Envisioning Change	9	7	0.86%	0.000	Regression
11	Encouraging Innovation and Having Creativity	13	32	2.74%	0.317	EM
12	Facilitating Collective Learning	14	40	3.17%	0.000	Regression
13	Risk Taking	5	12	2.67%	0.450	EM
14	Scanning External Environment	12	38	3.52%	0.642	EM
15	University Operations	6	24	4.44%	0.653	EM
16	Self-organization Skills	4	21	5.83%	0.354	EM

17	Learning and Teaching	6	24	4.44%	0.015	Regression
18	Personal and Interpersonal Outcomes	5	15	3.33%	0.000	Regression
19	Learning and Teaching Outcomes	6	23	4.26%	0.957	EM
20	Recognition and Reputation	5	22	4.89%	0.284	EM
21	Financial Performance	4	20	5.56%	0.177	EM
22	Effective Implementation	5	19	4.22%	0.280	EM

reliability estimation. As defined by Ho (2013), reliability refers to the ability of an instrument to provide measurement consistently for a phenomenon it has been designed to assess. There are two main procedures for checking the reliability of an instrument which are the external and internal consistency procedures. External consistency procedure includes test-retest and parallel forms of the same test methods and internal consistency procedure encompasses split-half technique, Cronbach's Alpha, and item analysis. In this study, Cronbach's Alpha method was used to check the internal reliability at subscale and scale levels. In Table 3.3, the results of reliability test have been summarized for all the 146 items at two levels.

Table 3.3
Reliability of the Pilot Study Instrument

Dimension name	Scale name	Subscale name	Subscale items	Alpha at subscale level	Alpha at scale level	
Capability	Personal	Self-regulation	6	0.690	0.849	
		Decisiveness	4	0.618		
		Commitment	5	0.735		
	Interpersonal	Influencing	7	0.792		
		Empathizing	5	0.767		
	Cognitive	Diagnosis	4	0.802		
		Strategy	7	0.857		
		Flexibility and Responsiveness	3	0.734		
		Change-oriented	Advocating Change	11		0.891
			Envisioning Change	9		0.864
	Encouraging Innovation and Having Creativity		13	0.941		
	Facilitating Collective Learning		14	0.946		
			Risk Taking	5		0.832
			Scanning External Environment	12		0.959

Table 3.3 continued					
Competency	Generic	University Operations	6	0.849	0.891
		Self-organization Skills	4	0.875	
	Role-specific	Learning and Teaching	6	0.925	0.925
Leadership Performance	Leadership Performance	Personal and Interpersonal Outcomes	5	0.861	0.960
		Learning and Teaching Outcomes	6	0.816	
		Recognition and Reputation	5	0.874	
		Financial Performance	4	0.852	
		Effective Implementation	5	0.898	

descriptive statistics. Upon completion of missing values analysis and reliabilities estimation, the “Descriptives” command in SPSS 23 was run to generate the mean and Standard Deviation (SD) scores for all the items in the pilot study instrument.

These statistics were generated to provide a more precise picture about the perception of the respondents in the pilot study sample with respect to leadership capabilities, managerial competencies, and leadership performance. Afterward, the items were ranked to enable the researcher compare the items descriptively.

With respect to personal capability scale, the results in Table 3.4 showed that the item “Having energy, passion and enthusiasm for learning and teaching”, with the focus on passion for learning and teaching in academic settings, had been ranked as the most important item with the mean score of 4.710. In addition, the item “Tolerating ambiguity and uncertainty”, as the least important item, had a mean score of 3.867.

Table 3.4
Descriptive Statistics of the Items of Personal Capability

Subscale	Item	Mean	SD	Rank
Self-regulation	1- Deferring judgment and not jumping in too quickly to resolve a problem	4.291	0.657	12
	2- Understanding my personal strengths and limitations	4.656	0.584	3
	3- Admitting to and learning from my errors	4.615	0.530	5
	4- Bouncing back from adversity	4.200	0.824	13
	5- Maintaining a good work/life balance and keeping things in perspective	4.589	0.652	6
	6- Remaining calm under pressure or when things take an unexpected turn	4.589	0.652	7
Decisiveness	7- Being willing to take a hard decision	4.402	0.699	10
	8- Being confident to take calculated risks	4.365	0.623	11
	9- Tolerating ambiguity and uncertainty	3.867	1.073	15
	10- Being true to one's personal values and ethics	4.632	0.588	4
Commitment	11- Having energy, passion and enthusiasm for learning and teaching	4.710	0.502	1
	12- Wanting to achieve the best outcome possible	4.677	0.488	2
	13- Taking responsibility for program activities and outcomes	4.572	0.578	8
	14- Persevering when things are not working out as anticipated	4.411	0.669	9
	15- Pitching in and undertaking menial tasks when needed	4.107	0.837	14

Focusing on interpersonal capability, the results displayed in Table 3.5 showed that the item “Being transparent and honest in dealings with others”, with a focus on transparency and honesty, had been rated as the most important item.

The mean score of this item was 4.717. Also, the item “Working constructively with people who are 'resistors' or are over-enthusiastic” was identified as the least important item. The concentration of this item, with the mean score of 4.044, was on dealing with resistors to change programs.

Table 3.5
Descriptive Statistics of the Items of Interpersonal Capability

Subscale	Item	Mean	SD	Rank
Influencing	16- Influencing people's behavior and decisions in effective ways	4.289	0.738	9
	17- Understanding how the different groups that make up my university operate and influence different situations	4.389	0.714	8
	18- Working with very senior people within and beyond my university without being intimidated	4.268	0.650	11
	19- Motivating others to achieve positive outcomes	4.611	0.612	2
	20- Working constructively with people who are 'resistors' or are over-enthusiastic	4.044	0.833	12
	21- Developing and using networks of colleagues to solve key workplace problems	4.270	0.685	10
	22- Giving and receiving constructive feedback to/from work colleagues and others	4.444	0.583	5

Table 3.5 continued				
Empathizing	23- Empathizing and working productively with students from a wide range of backgrounds	4.416	0.656	6
	24- Listening to different points of view before coming to a decision	4.545	0.602	3
	25- Empathizing and working productively with staff and other key players from a wide range of backgrounds	4.390	0.609	7
	26- Developing and contributing positively to team-based programs	4.492	0.541	4
	27- Being transparent and honest in dealings with others	4.717	0.562	1

As shown in Table 3.6, the main item in the category of cognitive capability was “Having a clear, justified and achievable direction in my area of responsibility”, with an emphasize on vision building and a mean score of 4.651. Additionally, the item “Recognizing how seemingly unconnected activities are linked”, with a mean score of 4.210 and a focus on recognizing the connectedness of activities, had been rated as the least important item.

Table 3.6
Descriptive Statistics of the Items of Cognitive Capability

Subscale	Item	Mean	SD	Rank
Diagnosis	28- Diagnosing the underlying causes of a problem and taking appropriate action to address it	4.645	0.504	2
	29- Recognizing how seemingly unconnected activities are linked	4.210	0.708	14
	30- Recognizing patterns in a complex situation	4.322	0.732	10
	31- Identifying from a mass of information the core issue or opportunity in any situation	4.367	0.608	9
Strategy	32- Seeing and then acting on an opportunity for a new direction	4.378	0.680	8
	33- Tracing out and assessing the likely consequences of alternative courses of action	4.322	0.684	11
	34- Using previous experience to figure out what's going on when a current situation takes an unexpected turn	4.422	0.719	6
	35- Thinking creatively and laterally	4.620	0.527	3
	36- Having a clear, justified and achievable direction in my area of responsibility	4.651	0.521	1
	37- Seeing the best way to respond to a perplexing situation	4.395	0.629	7
	38- Setting and justifying priorities for my daily work	4.478	0.585	5
Flexibility & Responsiveness	39- Adjusting a plan of action in response to problems that are identified during its implementation	4.281	0.703	13
	40- Making sense of and learning from experience	4.500	0.604	4
	41- Knowing that there is never a fixed set of steps for solving workplace problems	4.300	0.694	12

With respect to descriptive statistics related to change-oriented capability (Table 3.7), the items “Encouraging people to look at problems from different perspectives” (M= 4.542) and “Avoiding wishful thinking” (M= 3.851) had been rated

as the most and least important items, respectively. It is noticeable that the focus of the most important item was on broadening the perspective of people in analyzing problems and the emphasize of the least important item was on wishful thinking avoidance.

Table 3.7
Descriptive Statistics of the Items of Change-oriented Capability

Subscale	Item	Mean	SD	Rank
Advocating Change	42- Explaining why the change is necessary and needed	4.440	0.618	6
	43- Providing information showing how similar work units or competitors have better performance	4.133	0.767	50
	44- Explaining about undesirable outcomes that are likely to occur if emerging problems are ignored	4.289	0.797	25
	45- Explaining about undesirable outcomes that are likely to occur if new opportunities are exploited by competitors	4.208	0.867	39
	46- Influencing people to accept the need for change through increasing their awareness of problems without creating an excessive level of distress	4.267	0.805	29
	47- Having courage to persistently push for change when his/her career is at risk	4.222	0.776	34
	48- Having the ability to frame unfavorable events as an opportunity rather than a threat	4.167	0.738	46
	49- Having the ability to propose a strategy for responding to a threat or opportunity	4.300	0.678	23
	50- Involving people with relevant expertise in change processes	4.428	0.685	10
	51- Avoiding to advocate a costly major change when only incremental adjustments as necessary	4.136	0.733	49
	52- Avoiding to advocate the acceptance of a costly new initiative without considering the serious risks and obstacles	3.983	0.861	57
	Envisioning Change	53- Articulating a clear, appealing vision of what can be attained by the work unit or university	4.400	0.667
54- Articulating a vision which is relevant to the values, ideals, and needs of the people		4.497	0.626	4
55- Communicating the vision with colorful and emotional language		3.878	0.922	62
56- Using vivid imagery, metaphors, stories, symbols and slogans to communicate the vision		3.856	0.931	63
57- Building confidence among the people that they will be successful in implementing change programs		4.400	0.667	14
58- Avoiding the development of visions based on false assumptions		4.273	0.845	28
59- Avoiding wishful thinking		3.851	1.001	64
60- Avoiding taking actions that can divert attention from innovative solutions		3.953	0.804	60
61- Avoiding pursuing a risky and unrealistic vision that can result to performance decline		4.056	0.784	55
Encouraging Innovation and Having Creativity	62- Encouraging people to look at problems from different perspectives	4.542	0.563	1
	63- Encouraging people to think outside the box when solving problems	4.500	0.623	3
	64- Encouraging people to experiment with new ideas	4.406	0.653	11
	65- Encouraging people to find ideas in other fields that can be applied to their current problem or task	4.357	0.699	19
	66- Creating a climate of psychological safety and mutual trust in the university	4.360	0.721	18
	67- Encouraging people to suggest novel ideas	4.519	0.583	2
	68- Creating an organizational culture that values creativity and entrepreneurial activities	4.447	0.701	5
	69- Providing opportunities and resources to develop new products or services	4.406	0.745	12
	70- Serving as a champion or sponsor for acceptance of innovative proposals	4.185	0.770	42
	71- Offering ideas about new and different ways of doing things	4.372	0.692	16
	72- Seeing possibilities rather than problems	4.430	0.667	8
	73- Encouraging thinking along new ideas	4.383	0.726	15
	74- Liking to discuss new ideas	4.429	0.651	9

Table 3.7 continued					
Facilitating Collective Learning	75- Supporting the activities used to discover new knowledge, such as research or small-scale experiments	4.433	0.720	7	
	76- Supporting the activities to acquire new knowledge from external resources	4.347	0.721	20	
	77- Using practices to facilitate learning such as benchmarking or after-activity reviews	4.277	0.705	27	
	78- Providing resources and opportunities to test new ideas	4.162	0.846	47	
	79- Creating a climate of psychological safety among the people to increase learning from mistakes and failures	4.256	0.728	31	
	80- Avoiding common tendencies to misinterpret causes and over-generalize implications	4.179	0.743	44	
	81- Helping the people to better recognize failures	4.214	0.737	37	
	82- Helping the people to analyze their causes	4.222	0.683	35	
	83- Helping the people to identify remedies to avoid future recurrence	4.232	0.670	33	
	84- Influencing how new knowledge or a new technology is diffused and applied in the university by explaining why it is important	4.167	0.824	45	
	85- Guiding the people how to use new knowledge or technology at the university	4.234	0.738	32	
	86- Encouraging the use of knowledge sharing programs among the people	4.305	0.684	21	
	87- Helping people develop a better understanding about the determinants of organizational performance	4.154	0.731	48	
	88- Using more accurate, shared mental models to make strategic decisions or performance improvements	4.199	0.721	40	
	Risk Taking	89- Making quick decisions when necessary	4.367	0.680	17
		90- Being willing to take risks in decisions	4.258	0.787	30
		91- Trying to remove the obstacles related to maintaining the status quo	3.975	0.860	58
		92- Making personal sacrifices to pursue a vision or innovative strategy	3.986	0.942	56
93- Having some charisma attribution		3.975	0.924	59	
Scanning External environment	94- Monitoring the external environment and identify threats and opportunities for the university	4.216	0.756	36	
	95- Being sensitive to the information regarding concerns of customers and clients	4.285	0.806	26	
	96- Being sensitive to the information regarding the availability of suppliers and vendors	3.939	0.953	61	
	97- Being sensitive to the information regarding the actions of competitors	4.080	0.881	53	
	98- Being sensitive to the information regarding the market trends	4.210	0.797	38	
	99- Being sensitive to the information regarding the economic conditions	4.057	0.891	54	
	100- Being sensitive to the information regarding the government policies	4.295	0.914	24	
	101- Being sensitive to the information regarding the technological developments	4.305	0.767	22	
	102- Analyzing and interpreting the gathered information form the environment	4.182	0.815	43	
	103- Monitoring the external environment more when the university is highly dependent on outsiders	4.113	0.880	52	
	104- Monitoring the external environment more when the environment is rapidly changing	4.113	0.929	51	
	105- Monitoring the external environment more when the university faces severe competition or serious threats from outside enemies	4.190	0.828	41	

In terms of generic competency, the result shown in Table 3.8 implied that the item “Being able to organize my work and manage time effectively”, with a mean score of 4.674 and a focus on time management skills, had been ranked as the most important item from the viewpoints of the respondents in the pilot study. In addition, the item “Understanding the role of risk management and litigation in my work” had

been ranked as the least important item. The emphasize of this item was on risk management and its mean score was 4.175.

Table 3.8
Descriptive Statistics of the Items of Generic Competency

Subscale	Item	Mean	SD	Rank
University Operations	106- Understanding the role of risk management and litigation in my work	4.175	0.782	10
	107- Understanding how universities operate	4.575	0.593	2
	108- Understanding of industrial relations issues and processes as they apply to higher education	4.207	0.876	9
	109- Being able to help my staff learn how to deliver necessary changes effectively	4.360	0.763	8
	110- An ability to chair meetings effectively	4.572	0.610	3
	111- Having sound administrative and resource management skills	4.523	0.612	4
Self-organization Skills	112- Being able to manage my own ongoing professional learning and development	4.474	0.595	6
	113- Being able to use IT effectively to communicate and perform key work functions	4.393	0.725	7
	114- Being able to organize my work and manage time effectively	4.674	0.507	1
	115- Being able to make effective presentations to a range of different groups	4.520	0.533	5

Also, the results related to role-specific competency (Table 3.9) shed light on the fact that the item “Having a high level of up-to-date knowledge of what engages university students in productive learning”, with a mean score of 4.456 and an emphasize on gaining knowledge, had been ranked as the most important item. Additionally, the item “Knowing how to identify and disseminate good learning and management practice across the unit or university” had been rated as the least important item with a mean score of 4.357. The concentration of this item was on management skills.

Table 3.9
Descriptive Statistics of the Items of Role-specific Competency

Subscale	Item	Mean	SD	Rank
Learning and Teaching	116- Understanding how to develop an effective higher education learning program	4.438	0.669	2
	117- Having a high level of up-to-date knowledge of what engages university students in productive learning	4.456	0.639	1
	118- Understanding how to design and conduct an evaluation of a higher education learning program	4.358	0.723	5
	119- Understanding how to implement successfully a new higher education program	4.389	0.789	3
	120- Being on top of current developments in learning and teaching	4.389	0.760	4
	121- Knowing how to identify and disseminate good learning and management practice across the unit or university	4.357	0.680	6

Lastly, focusing on leadership performance, the results displayed in Table 3.10 revealed that the item “Achieving high-quality graduate outcomes”, focusing on producing quality graduates and having a mean score of 4.598, had been rated by the respondents as the most important item. Moreover, the item “Winning learning and teaching awards and prizes” had been rated as the least important item. The focus of this item was on winning awards and its mean score was 3.745.

Table 3.10
Descriptive Statistics of the Items of Leadership Performance

Subscale	Item	Mean	SD	Rank
Personal and Interpersonal Outcomes	122- Achieving goals set for your own professional development	4.411	0.763	8
	123- Establishing a collegial working environment	4.478	0.707	4
	124- Formative involvement of external stakeholders in your work	4.200	0.877	20
	125- Having high levels of staff support	4.389	0.745	9
	126- Producing future learning and teaching leaders	4.422	0.779	7
Learning and Teaching Outcomes	127- Achieving high-quality graduate outcomes	4.598	0.661	1
	128- Enhanced representation of equity groups	4.191	0.821	21
	129- Improving student satisfaction ratings for learning and teaching	4.540	0.596	2
	130- Increased student retention rates	4.273	0.828	15
	131- Producing significant improvements in learning and teaching quality	4.494	0.651	3
	132- Winning learning and teaching awards and prizes	3.745	1.053	25
Recognition and Reputation	133- Achieving a high profile for your area of responsibility	4.228	0.933	17
	134- Achieving positive outcomes from external reviews of the area	4.335	0.697	12
	135- Being invited to present to key groups on learning and teaching	4.080	0.890	24
	136- Publishing refereed papers and reports on learning and teaching	4.213	0.876	19
	137- Receiving positive user feedback for your area of responsibility	4.340	0.749	11
Financial Performance	138- Achieving a positive financial outcome for your area of responsibility	4.167	0.923	22
	139- Meeting student load targets	4.301	0.720	14
	140- Securing competitive funds related to learning and teaching	4.121	0.870	23
	141- Winning resources for your area of responsibility	4.234	0.817	16
Effective Implementation	142- Bringing innovative policies and practices into action	4.217	0.876	18
	143- Delivering agreed tasks or projects on time and to specification	4.438	0.729	6
	144- Delivering successful team projects in learning and teaching	4.333	0.774	13
	145- Producing successful learning systems or infrastructures	4.380	0.810	10
	146- Successful implementation of new initiatives	4.448	0.632	5

extremely correlated items elimination. The next step in screening the data was to check whether extremely correlated items were existed in the dataset. This procedure was one of the strategies to avoid some problems during the statistical analysis. For example, regarding FA as a part of the analysis in this study, when the

generated matrix of correlations is negative, which happens due to availability of highly correlated items in the dataset, some tests such as Kaiser-Meyer-Olkin (KMO) cannot be carried out. In this case there are two solutions which are increasing the sample size or excluding the extremely correlated items (Field, 2013).

From another point of view and regarding internal reliability concept, when the Alpha for a subscale exceeds 90%, it probably may be the indication of repetitious items or having more items in the subscale than are really necessary (Morgan, Leech, Gloeckner, & Barrett, 2011). In addition, items which are not correlated at subscale level are also problematic and must be taken care of since they are meant to operationalize one construct.

Thus, although PCA was employed to identify the latent variables in the collected data and multicollinearity as well as singularity could not create any problems to this analysis (Field, 2013), it was decided to exclude one item of each extremely correlated items to avoid problems in terms of internal reliability at subscale level and also to rephrase the remaining items when necessary.

After running the bivariate correlation analysis using Pearson Product Moment Correlation Coefficient method, one item of each highly correlated ($r \geq 0.75$) or lowly correlated pairs of items ($r \leq 0.25$) was removed. In addition, if one item had a high or low correlation with more than one item at subscale level, their correlations were evaluated deeply to determine the minimum number of items to be excluded. Following these steps, the necessary items were rephrased.

With respect to highly correlated items, after item examination, 22 items out of the initial 146 items were excluded. It is worth noting that 5 items were removed

from the encouraging innovation and having creativity subscale, 6 items were excluded from the facilitating collective learning subscale, 7 items were dropped from scanning the external environment subscale, 1 item was removed from the self-organization Skills subscale, 2 items were excluded from the learning and teaching subscale, and 1 item was excluded from the financial performance subscale.

Regarding lowly correlated items, 3 items from the self-regulation subscale, 1 item from the decisiveness subscale, 1 item from the commitment subscale, 1 item from the influencing subscale, 1 item from the empathizing subscale, 1 item from the strategy subscale, 1 item from the advocating change subscale, and 1 item from the envisioning change subscale were excluded (in total, 10 items).

As the complementary stage, another group of 9 items which were not correlated significantly with other items at scale level (2 items from the personal capability scale, 1 item from the interpersonal capability scale, 4 items from the change-oriented capability scale, and 2 items from the leadership performance scale) were deleted.

These procedures resulted to have 105 appropriate items in the instrument to run PCA and check for the latent variables within the collected data. The final step at this stage was to check the reliability at subscale and scale levels after the removal of the 41 items (22 highly correlated items at subscale level, 10 lowly correlated items at subscale level, and 9 non-significantly correlated items at scale level). The results have been presented in Table 3.11.

Table 3.11
Reliability of the Pilot Study Instrument after 41 Items Excluded

Dimension	Scale	Subscale	Subscale items	Alpha at subscale level	Alpha at scale level
Capability	Personal	Self-regulation	3	0.726	0.821
		Decisiveness	2	0.791	
		Commitment	3	0.666	
	Interpersonal	Influencing	5	0.776	0.851
		Empathizing	4	0.765	
	Cognitive	Diagnosis	4	0.802	0.913
		Strategy	6	0.866	
		Flexibility and Responsiveness	3	0.734	
	Change-oriented	Advocating Change	8	0.870	0.970
		Envisioning Change	7	0.843	
		Encouraging Innovation and Having Creativity	7	0.898	
		Facilitating Collective Learning	8	0.901	
		Risk Taking	5	0.832	
Scanning External Environment		5	0.882		
Competency	Generic	University Operations	6	0.849	0.882
		Self-organization Skills	3	0.817	
	Role-specific	Learning and Teaching	4	0.889	0.889
Leadership Performance	Leadership Performance	Personal and Interpersonal Outcomes	5	0.861	0.958
		Learning and Teaching Outcomes	4	0.741	
		Recognition and Reputation	5	0.874	
		Financial Performance	3	0.753	
		Effective Implementation	5	0.898	

PCA. Orderly simplification of many inter-correlated items to a few representative factors/components is the main objective to run Exploratory Factor Analysis (EFA). In other words, it allows researchers to reduce a big number of items to a few representative factors/components to be used for subsequent analysis. This procedure entails the computation of the correlation matrix for all items, extraction of initial factors/components, and rotation of the extracted factors/components to a terminal solution (Ho, 2013).

Although there is a main debate about the sample size in EFA and many rules of thumb have been proposed on the basis of the studies focusing on this issue, the

factor loadings and communalities need to be taken into account to judge the adequacy of the sample size (Field, 2013). Guadagnoli and Velicer (1988) proposed that:

- The factor is reliable regardless of the sample size if it has four or more items with loadings greater than 0.6.
- Factors with 10 or more loadings greater than .40 are reliable if the sample size is greater than 150.
- Factors with a few low loadings should not be interpreted unless the sample size is 300 or more.

Also, MacCallum, Widaman, Zhang, and Hong (1999) showed that as the communalities become lower, the importance of sample size increases and with all the communalities above 0.6, relatively small samples (less than 100) may be perfectly adequate.

statistical requirements. Issues related to the statistical requirement of the analysis have been discussed under this subsection.

assumptions. The assumptions underlying EFA have been classified into statistical and conceptual assumptions. In terms of statistical assumptions, normality and linearity must be checked since departure from them can diminish the observed correlation between measured variables. The other important assumption in this category is the sufficient significant correlations in the correlation matrix of the items. In other words, the researcher must ensure that the data matrix has sufficient correlations to justify the application of EFA (Ho, 2013).

With respect to the importance of normality, it is worth noting that the rationale behind hypothesis testing relies on having something that is normally distributed and

if this assumption is violated, then the logic behind hypothesis testing is flawed. This mirrors the importance of checking for normality. However, on the grounds of central limit theorem, the sampling distribution tends to be normal in big samples regardless of the shape of the data that have been collected. Additionally, the sampling distribution will tend to be normal regardless of the population distribution in samples of 30 or more and as the sample gets bigger, then the researcher can be more confident that the sampling distribution is normally distributed. The final issue about normality as the main assumption for many statistical tests is that normality is a matter of importance when the researcher would like to generalize the findings to the population. On the other hand, if the sample is the same as the population or there is no need to generalize the findings, there won't be any concerns about normality (Field, 2013).

Regarding conceptual assumptions, a few issues need to be addressed. For example, it is important to select the items to reflect the underlying dimensions that are assumed to exist in the set of selected items. The other issue is that the sample must be homogeneous with respect to the underlying factor structure (Ho, 2013).

In this study, on the grounds of central limit theorem, the data were considered as normally distributed regardless of the shape of the distribution (Field, 2013). With respect to checking for linearity, building the scatterplots and examining them for all the items in each scale was impractical. Hence, linearity was assessed through plotting the scatterplots for only the items with the maximum and minimum skewness at scale level (Tabachnick & Fidell, 2013). This process resulted that the data was quite roughly normal, linear and suitable for the analysis. In other words, no strong evidence of curvilinearity was detected. Additionally, the correlation matrices at scale level

were screened. This procedure also revealed that there were enough correlations between the items, indicating the factorability of correlation matrices.

outliers. Many recent reference books about statistics and SPSS were consulted to check the requirements of the analysis and to select the most appropriate method. The only book which discussed about checking for multivariate and univariate outliers in order to run PCA or other common EFA techniques was the one authored by Tabachnick and Fidell (2013). In the next step, some boxplots as a graphical approach to detect univariate outliers at scale and dimension level were charted. The results showed that the case with the ID of S66 was the only outlier at scale level (role-specific competency and leadership performance) as well as at dimension level (competencies and leadership performance). However this outlier fell beyond ± 1.5 but within ± 3 interquartile range and as discussed by Meyers, Gamst, and Guarino (2013), these kinds of cases may be considered outliers in some contexts and in other words, are not recognized as extreme scores in general. Thus, it was decided to retain this case for conducting the PCA.

Thus, in the pilot study of this research, the sample was comprised of 90 academic leaders. Additionally, on the basis of the guidelines provided by Stevens (2009), the critical value for testing the significance of the factor loading for each item was computed to be 0.542. In other words, only items with the loading above this critical value were considered significant to be loaded in a component.

extraction method. PCA and FA are the two methods to extract factor/component solutions. In SPSS, six methods for FA including principal axis factoring, unweighted least squares, generalized least squares, maximum likelihood, alpha factoring and image factoring have been provided. The choice to select whether

PCA or FA lies with the objective of the researcher. If the objective is only data reduction to obtain the minimum number of components required to represent the original set of data, then PCA is the best choice. On the other hand, if the objective is to identify theoretically meaningful underlying dimensions of a phenomenon, then FA with its more restrictive assumptions is required (Ho, 2013). This implies that only FA can estimate the underlying factors and it relies on various assumptions for these estimates to be accurate (Field, 2013).

With respect to PCA, it is worth noting that this method is an exploratory technique to locate themes (latent variables) from several (numerically rated) items in a single questionnaire. Also, it analyses all the variance in the items.

Hence, in this study, PCA as the method for extracting components and analyzing all the variance in the items was employed since the aim of this part of the study was to locate themes or latent variables from several numerically rated items in a single questionnaire (Mayers, 2013).

number of components/ factors determination. There are four methods to determine the number of factors/components to be extracted which are eigenvalue-based method, scree plot, Velicer's Minimum Average Partial (MAP) test, and parallel analysis (Ho, 2013).

Using eigenvalue criterion, only factors/components with the eigenvalues greater than 1 are significant. Also, as cited by Ho (2013), scree plot is used to identify the optimum number of factors/components that can be extracted before the amount of unique variance begins to dominate the common variance structure (Hair, Black, Babin, Anderson, & Tatham, 2006).

MAP test, as the third method, involves a complete PCA followed by the examination of a series of matrices of partial correlations. Additionally, parallel analysis involves extracting eigenvalues from random datasets that parallel the actual dataset in term of the number of cases and variables as well as making comparisons between the eigenvalues (O'Connor, 2000).

As discussed and cited by Ho (2013), while the first two methods have their own deficiencies and lack of accuracy, MAP test and parallel analysis are considered by the statisticians to be the superior methods in determining the number of factors/components to be extracted and yield optimum solutions (Wood, Tataryn, & Gorsuch, 1996; Zwick & Velicer, 1986).

In this study, Velicer's MAP test was employed for determining the number of retaining components. It is notable that based on the results of MAP test, the number corresponding to the "Smallest Average Squared Correlation" in the generated table of "Average Partial Correlations" will be the true number of components to be extracted.

rotation method. Orthogonal and oblique are the two classes for factor/component rotation. Orthogonal rotation assumes that the factors/components are independent while the oblique rotation allows for correlated factors/components (Ho, 2013).

There are three methods for orthogonal rotation including Varimax, Quartimax and Equamax. In addition, Direct oblimin and Promax are the two methods under oblique method. These methods differ in how they rotate the factors/components and therefore, the resulting output depends on which method is selected. Quartimax

rotation attempts to maximize the spread of factor loadings for an item across all factors/components. Therefore, interpreting items becomes easier. However, this often results in lots of items loading highly onto a single factor/component. Varimax is the opposite and it attempts to maximize the dispersion of loadings within factors/components. Therefore, it tries to load a smaller number of items highly onto each factor/component. This results in more interpretable clusters of factors/components. Equamax is a hybrid of the other two approaches and is reported to behave erratically to a large degree. The case with oblique rotations is more complex because correlation between factors/components is permitted. In the case of Direct oblimin, the degree to which factors/components can correlate is determined by the value of a constant called Delta, which is by default 0 in SPSS. Regarding Promax rotation, it may be noted that it is a faster procedure designed for very large datasets (Field, 2013).

The selection of the right rotation method depends on the expectations of the researcher. If the researcher expects the factors/components to be independent, then one of the orthogonal rotation methods must be selected. However, if there are strong theoretical grounds for supposing that the factors/components might correlate, then any methods under oblique rotation should be selected. In practice, there are strong evidence to believe that orthogonal rotations are a complete nonsense for naturalistic data, and certainly for any data involving humans. As such, some argue that orthogonal rotations should never be used (Field, 2013).

In the piloting phase of this study, Promax as one of the two methods under oblique rotation category was used since it was assumed that the constructs were correlated.

running PCA. This analysis was particularly run to identify the main constructs of capabilities, competencies, and leadership performance on the grounds of the collected data. Even though the sample size was 90 and the data had been collected from 9 public and private universities, strong quality evidence has been provided to support the emerged components. Additionally, the output as discussed in the following sub-sections, clearly indicated that the findings were creditable and valid. In other words, from a theoretical and statistical points of view, the emerged components were reliable and contently valid to be used for data collection in the actual phase of the research.

personal capability scale. A PCA was conducted on the 8 items of personal capability scale with oblique rotation (Promax). The KMO measure verified the sampling adequacy for the analysis, $KMO = 0.787$. Bartlett's test of sphericity $\chi^2 (28) = 233.813$, $p < 0.001$, indicated that correlations among the items were sufficiently large for PCA. An initial analysis was run to obtain eigenvalues for each component in the data. Two components had eigenvalues over Kaiser's criterion of 1 and in combination explained 58.78% of the variance. As the next step of the analysis, Velicer's MAP test was run to determine the accurate number of components to be extracted. The results showed that the value of "smallest average squared partial correlation" in the table of "average partial correlations" was 0.0485, and the corresponding number to this value was 1. In other words, only one component emerged based on the results of MAP test. As the final step, PCA for the second run was executed and this time, it was requested to generate one component. The reliability of the component was computed as well. This component, containing 8 items, explained 45.89% of the variance.

Table 3.12 shows the factor loadings as well as other important statistics as the output of the analysis.

Table 3.12
PCA with Promax Rotation for Personal Capability

No	Item	Component 1	h ²	Corrected item-total correlation	Alpha if item deleted
1	Being confident to take calculated risks	.721	.520	.618	.790
2	Wanting to achieve the best outcome possible	.719	.517	.600	.797
3	Understanding my personal strengths and limitations and bouncing back from adversity	.700	.490	.562	.799
4	Admitting to and learning from my errors and deferring quick judgments	.699	.489	.563	.800
5	Remaining calm under pressure or when things take an unexpected turn and keeping things in perspective	.685	.469	.553	.799
6	Being willing to take a hard decision	.650	.423	.534	.802
7	Pitching in and undertaking menial tasks when needed	.633	.400	.509	.812
8	Taking responsibility for program activities and outcomes	.603	.364	.482	.809
Eigenvalue		3.671			
% of variance		45.89			
Alpha		.821			
Note. Factor loadings > 0.542 are in boldface and h² stands for communalities					

In addition, the diagonal elements of the anti-image correlation matrix, which indicate the sampling adequacy for each pair of given items (Field, 2013), were examined. These values were above the bare minimum of 0.5 (the minimum correlation was 0.656). Hence, there was no need to exclude any of these items from the analysis and rerun PCA. The determinant of the correlation matrix was also 0.065 which was bigger than 0.00001. Moreover, the minimum correlation between the items in the emerged component was 0.208 and the maximum was 0.658.

It is also worth noting that all the data had corrected item-total correlations above 0.45, which was encouraging since it was greater than the proposed value of 0.3 (Field, 2013). Lastly, although there are not any fast or hard rules regarding the

proportion of residuals below 0.05 in the output generated by reproduced correlation matrix (Field, 2013), according to the results of the reproduced correlation matrix, 23 (82%) non-redundant residuals with absolute values greater than 0.05 were identified in this analysis.

interpersonal capability scale. A PCA was run on the 9 items of interpersonal capability scale with oblique rotation (Promax). The KMO measure verified the sampling adequacy for the analysis, KMO = 0.850. Bartlett’s test of sphericity χ^2 (36) = 279.200, $p < 0.001$, indicated that correlations among the items were sufficiently large for PCA. Through the initial PCA, one component emerged which could explain 46.84% of the variance.

As the next step, Velicer’s MAP test was run to determine the accurate number of components to be extracted. The results showed that the value of “smallest average squared partial correlation” in the table of “average partial correlations” was 0.0312 and the corresponding number to this value was 1. In other words, only one component emerged on the grounds of the results of MAP test which confirmed the results of the initial PCA. Table 3.13 displays all the important statistics regarding this analysis.

Table 3.13
PCA with Promax Rotation for Interpersonal Capability

No.	Item	Component 1	h^2	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1	Giving and receiving constructive feedback to/from work colleagues and others	.796	.633	.704	.823
2	Developing and using networks of colleagues to solve key workplace problems	.787	.619	.697	.821
3	Empathizing and working productively with students from a wide range of backgrounds	.704	.496	.598	.832

Table 3.13 continued					
4	Empathizing and working productively with staff and other key players from a wide range of backgrounds	.698	.487	.580	.834
5	Listening to different points of view before coming to a decision	.674	.454	.573	.835
6	Developing and contributing positively to team-based programs	.668	.446	.552	.838
7	Working with very senior people within and beyond my university without being intimidated	.621	.386	.521	.840
8	Working constructively with people who are 'resistors' or are over-enthusiastic	.611	.374	.508	.847
9	Motivating others to achieve positive outcomes	.566	.320	.460	.846
Eigenvalue		4.216			
% of variance		46.84			
Alpha		.851			
Note. Factor loadings > 0.542 are in boldface and h² stands for communalities					

Notably, the minimum correlation among the diagonal elements of the anti-image correlation matrix was 0.806; the minimum correlation among the items of the emerged component was 0.229 and the maximum was 0.668; the determinant of the correlation matrix was 0.038; all the data had corrected item-total correlations above 0.45; and 22 (61%) non-redundant residuals with absolute values greater than 0.05 were identified in this analysis.

cognitive capability scale. A PCA was undertaken on the 13 items of cognitive capability scale with oblique rotation (Promax). The KMO measure verified the sampling adequacy for the analysis, KMO = 0.887. Bartlett's test of sphericity χ^2 (78) = 632.581, $p < 0.001$, did denote that correlations among the items were sufficiently large for PCA. An initial analysis revealed the emergence of two components which in combination, could explain 60.36% of the variance. Velicer's MAP test was also run to determine the accurate number of components to be extracted.

The results showed that the value of “smallest average squared partial correlation” in the table of “average partial correlations” was 0.0314 and the corresponding number to this value was 2. In other words, Velicer’s MAP test confirmed the results of the initial PCA. Some of the main statistics regarding this analysis have been provided in Table 3.14.

Table 3.14
PCA with Promax Rotation for Cognitive Capability

No.	Items	Component		h ²	Corrected item-total correlation	Alpha if item deleted
		1	2			
1	Having a clear, justified and achievable direction in my area of responsibility	.952	-.233	.679	.698	.875
2	Making sense of and learning from experience	.856	-.073	.658	.715	.872
3	Adjusting a plan of action in response to problems that are identified during its implementation	.780	.075	.688	.760	.866
4	Setting and justifying priorities for my daily work by using previous experience to figure out issues	.771	.034	.629	.729	.870
5	Seeing the best way to respond to a perplexing situation	.753	.142	.723	.770	.865
6	Thinking creatively and laterally	.655	.011	.438	.554	.890
7	Seeing and then acting on an opportunity for a new direction	.559	.219	.515	.612	.886
8	Recognizing patterns in a complex situation	-.252	.886	.565	.545	.832
9	Recognizing how seemingly unconnected activities are linked	-.057	.854	.671	.688	.800
10	Identifying from a mass of information the core issue or opportunity in any situation	.108	.750	.676	.725	.795
11	Knowing that there is never a fixed set of steps for solving workplace problems	.036	.604	.393	.498	.839
12	Tracing out and assessing the likely consequences of alternative courses of action	.291	.596	.661	.680	.802
13	Diagnosing the underlying causes of a problem and taking appropriate action to address it	.244	.563	.551	.628	.818
Eigenvalue		6.554	1.293			
% of Variance		50.42%	9.95%			
Alpha		.891	.841			

Note. Factor loadings > .542 are in boldface and h² stands for communalities

In addition, the measures of sampling adequacy for each given pairs of items were examined and the minimum was 0.843; the determinant of the correlation matrix was 0.001; all the items in both components had corrected item-total correlations above 0.45; and 38 (48%) non-redundant residuals with absolute values greater than 0.05 were identified in this analysis.

It is important to note that in the first emerged component, the minimum correlation among the items was 0.323 and the maximum was 0.690; and in the second component, the minimum and maximum correlation coefficients among the items were 0.275 and 0.622, respectively.

Additionally, no cross-loading item within the two components was detected; and the correlation between the two components was 0.634 which supported the assumption of the relationship between the components as well as the meaningfulness of employing oblique rotation in this study (Field, 2013).

change-oriented capability scale. A PCA was conducted on the 40 items of change-oriented capability scale with oblique rotation (Promax). The KMO measure verified the sampling adequacy for the analysis, $KMO = 0.869$. Bartlett's test of sphericity $\chi^2 (780) = 3077.947, p < 0.001$, revealed that correlations among the items were sufficiently large for PCA. An initial PCA yielded eight components to emerge which in combination could explain 73.10% of the variance.

Through the complementary analysis, Velicer's MAP test results showed that the value of "smallest average squared partial correlation" in the table of "average partial correlations" was 0.0218 and the corresponding number to this value was 5. In other words, only five components emerged through MAP test. As the final step, PCA

for the second time was run and this time, it was requested to produce five components regardless of eigenvalues. It is notable that these five components, containing 26 items, explained 64.63% of the variance. In Table 3.15, the main statistics regarding the analysis have been presented.

Table 3.15
PCA with Promax Rotation for Change-oriented Capability

No.	Item	Component					h ²	Corrected item-total correlation	Alpha is item deleted
		1	2	3	4	5			
1	Being sensitive to the information regarding the technological developments	.909	-.038	-.055	-.061	.052	.728	.786	.911
2	Monitoring the external environment more when the university is highly dependent on outsiders, faces severe competition and the environment is rapidly changing	.809	.037	-.110	.118	.096	.780	.854	.906
3	Using more accurate, shared mental models to make strategic decisions or performance improvements	.799	.018	.078	-.097	.039	.684	.769	.913
4	Explaining about undesirable outcomes that are likely to occur if new opportunities are exploited by competitors	.763	.089	-.181	.197	-.044	.650	.717	.916
5	Influencing how new knowledge or a new technology is diffused and applied in the university by explaining why it is important	.703	.102	.140	-.086	.032	.675	.763	.913
6	Identifying environmental threats and opportunities for the university and interpreting the collected information	.670	-.018	.176	-.095	.156	.671	.751	.913
7	Being sensitive to the information regarding political issues (e.g. governmental policies and actions of competitors)	.660	-.074	-.253	.238	.132	.508	.612	.924
8	Helping the people to better recognize failures	.560	-.004	.161	.048	.112	.584	.688	.917
9	Encouraging the use of new technology and knowledge sharing programs among the people at the university	.558	.102	.413	-.195	-.145	.591	.621	.921
10	Having some charisma attribution	.500	-.091	.062	-.079	.449	.603	-	-
11	Helping the people to identify remedies to avoid future recurrence	.451	-.036	.152	.162	.193	.588	-	-
12	Encouraging people to look at problems from different perspectives	.450	.101	.369	.107	-.273	.583	-	-
13	Explaining why the change is necessary and needed	-.052	.806	.248	-.059	-.143	.705	.734	.863

Table 3.15 continued									
14	Creating a climate of psychological safety and mutual trust in the university	.039	.742	-.001	.158	.047	.772	.799	.850
15	Creating an organizational culture that values creativity and entrepreneurial activities	-.169	.719	.367	-.028	.003	.707	.735	.862
16	Providing information showing how similar work units or competitors have better performance	.038	.640	.034	-.147	.197	.489	.571	.890
17	Providing resources for the people to increase learning from mistakes and failures	.141	.627	-.116	.260	.041	.703	.693	.868
18	Building confidence among the people that they will be successful in implementing change programs	.393	.590	.043	-.074	.000	.695	.701	.867
19	Being willing to take risks in decisions	-.124	-.104	.733	-.134	.394	.607	.510	.888
20	Offering ideas about new and different ways of doing things and accepting innovative proposals	-.025	.060	.715	-.081	.296	.720	.802	.811
21	Seeing possibilities rather than problems	-.006	.192	.680	.026	.034	.665	.764	.821
22	Liking and encouraging to discuss new ideas	.137	.109	.563	.288	-.190	.714	.713	.834
23	Supporting the activities to facilitate learning and acquire new knowledge from research, small-scale experiments and external resources	.161	.020	.552	.047	.155	.622	.696	.837
24	Having courage to persistently push for change when his/her career is at risk	-.190	.304	.523	.178	.006	.524	-	-
25	Encouraging people to find ideas in other fields that can be applied to their current problem or task	.384	.088	.511	-.006	-.046	.694	-	-
26	Articulating and communicating a vivid vision which is relevant to the values, ideals, and needs of the people	-.076	.101	.510	.421	-.019	.668	-	-
27	Having the ability to frame unfavorable events as an opportunity rather than a threat	.043	-.049	.418	.414	.181	.691	-	-
28	Avoiding taking actions that can divert attention from innovative solutions	-.125	.057	-.046	.775	.027	.535	.620	.667
29	Avoiding the development of visions based on false assumptions	-.105	.466	-.192	.729	-.032	.795	.614	.675
30	Avoiding pursuing a risky and unrealistic vision that can result to performance decline	.435	-.205	-.015	.634	-.146	.610	.572	.720
31	Involving people with relevant expertise in change processes	.099	-.005	.110	.524	.209	.597	-	-
32	Avoiding to advocate a costly major change when only incremental adjustments as necessary	.080	-.081	.283	.493	.004	.489	-	-
33	Articulating a clear, appealing vision of what can be attained by the work unit or university	.004	.026	.180	.484	.221	.554	-	-
34	Having the ability to propose a strategy for responding to a threat or opportunity	-.061	-.148	.362	.470	.387	.730	-	-

Table 3.15 continued									
35	Avoiding common tendencies to misinterpret causes and over-generalize implications	.258	-.072	.298	.458	-.045	.637	-	-
36	Trying to remove the obstacles related to maintaining the status quo	.339	-.120	.154	-.082	.630	.725	.564	.654
37	Communicating the vision with colorful and emotional language	-.050	.354	-.220	.203	.606	.646	.577	.647
38	Making quick decisions when necessary	-.046	-.101	.267	.150	.562	.528	.579	.659
39	Being sensitive to the information regarding economic issues (e.g. suppliers and vendors, customers and market trends)	.195	.445	-.072	-.057	.532	.751	-	-
40	Making personal sacrifices to pursue a vision or innovative strategy	.061	.324	.259	-.124	.467	.632	-	-
Eigenvalue		18.879	2.422	1.608	1.534	1.408			
% of Variance		47.20%	6.06%	4.02%	3.84%	3.52%			
Alpha		0.924	0.887	0.867	0.768	0.739			
Note. Factor loadings > .542 are in boldface and h² stands for communalities									

It is remarkable that the minimum correlation among the diagonal elements of the anti-image correlation matrix was 0.808; all the items in the five components had corrected item-total correlations above 0.50; and although, the determinant of the correlation matrix was smaller than 0.00001, this did not cause any problems regarding multicollinearity to the analysis since PCA had been employed rather than FA in this study.

In addition, the correlation matrices of the items in each emerged component were examined. This procedure revealed that in the first component, the minimum correlation was 0.342 and the maximum was 0.722; in the second component, the minimum was 0.401 and the maximum was 0.737; in the third component, the minimum was 0.361 and the maximum was 0.741; in the fourth component, the minimum was 0.502 and the maximum was 0.563; and in the fifth component, the minimum was 0.491 and the maximum was 0.509. It is worth noting that no cross-loading item in the five components was detected. Moreover, 264 (33%) non-

redundant residuals with absolute value greater than 0.05 were identified in this analysis. Lastly, Table 3.16 shows the correlation among the emerged components, indicating the meaningfulness of the rotation method used in this analysis.

Table 3.16
Change-oriented Capability Components Correlation Matrix

Component	1	2	3	4	5
1	1.000				
2	.479	1.000			
3	.631	.466	1.000		
4	.557	.528	.534	1.000	
5	.494	.369	.408	.403	1.000

generic competency scale. A PCA was carried out on the 9 items of generic competency scale with oblique rotation (Promax). The KMO measure confirmed the sampling adequacy for the analysis, KMO = 0.866. Bartlett's test of sphericity $\chi^2 (36) = 412.768, p < 0.001$, showed that correlations among the items were sufficiently large for PCA. Two components were emerged through the initial PCA which in combination explained 68.10% of the variance. Velicer's MAP test was also run to determine the accurate number of components to be extracted. The results exhibited that the value of "smallest average squared partial correlation" in the table of "average partial correlations" was 0.0522 and the corresponding number to this value was 2. This confirmed the results of the initial PCA. Table 3.17 displays the important statistics with respect to this analysis.

Table 3.17
PCA with Promax Rotation for Generic Competency

No.	Item	Component		h ²	Corrected item-total correlation	Alpha if item deleted
		1	2			
1	Being able to organize my work and manage time effectively	.925	-.170	.711	.688	.820
2	Being able to make effective presentations to a range of different groups	.858	.030	.765	.771	.786
3	Having sound administrative and resource management skills	.840	-.016	.691	.682	.817
4	Being able to use IT effectively to communicate and perform key work functions and enhance my professional development	.768	.060	.644	.685	.830
5	Understanding of industrial relations issues and processes as they apply to higher education	-.170	.946	.747	.709	.732
6	Being able to help my staff learn how to deliver necessary changes effectively	-.083	.884	.707	.680	.745
7	Understanding the role of risk management and litigation in my work	.047	.770	.636	.642	.764
8	Understanding how universities operate	.264	.550	.531	.536	.813
9	An ability to chair meetings effectively	.453	.495	.697	-	-
Eigenvalue		4.085	1.324			
% of Variance		53.93%	14.71%			
Alpha		.852	.815			
Note. Factor loadings > .542 are in boldface and h² stands for communalities						

It is notable that the minimum correlation among the diagonal elements of the anti-image correlation matrix was 0.817; the determinant of correlation matrix was also 0.008; all the items in both components had corrected item-total correlations above 0.50; no cross-loading item was detected between the two emerged components; the correlation between the two components was 0.549; and 17 (47%) non-redundant residuals with absolute values greater than 0.05 were identified in this analysis. The correlation matrices of the items in each component were also analyzed. Through this step, it was identified that in the first component, the minimum correlation was 0.520

and the maximum was 0.731; and in the second component, the minimum and the maximum correlations were 0.400 and 0.614, respectively.

role-specific competency scale. A PCA was run on the 4 items of role-specific competency scale with oblique rotation (Promax). The KMO measure confirmed the sampling adequacy for the analysis, KMO = 0.801. Bartlett’s test of sphericity $\chi^2(6) = 206.207, p < 0.001$, disclosed that correlations among the items were sufficiently large for PCA. An initial analysis was performed to obtain eigenvalues for each component in the data. One component had eigenvalue over Kaiser’s criterion of 1 and explained 75.45% of the variance. Velicer’s MAP test was also carried out to determine the accurate number of components to be extracted. The results showed that the value of “smallest average squared partial correlation” in the table of “average partial correlations” was 0.1313 and the corresponding number to this value was 1. This result confirmed the output of the initial PCA. In Table 3.18, the necessary information regarding the analysis have been provided.

Table 3.18
PCA with Promax Rotation for Role-specific Competency

No.	Items	Component 1	h ²	Corrected item-total correlation	Alpha if item deleted
1	Understanding how to develop and evaluate an effective higher education learning program	.902	.814	.813	.836
2	Knowing how to identify and disseminate good learning and management practice across the unit or university	.875	.766	.771	.851
3	Having a high level of up-to-date knowledge of what engages university students in productive learning	.860	.739	.740	.864
4	Being on top of current developments in learning and teaching	.835	.698	.713	.877
Table 3.18 continued					
Eigenvalue		3.018			
% of Variance		75.45%			
Alpha		.889			
Note. Factor loadings > .542 are in boldface and h² stands for communalities					

It is worth noticing that the minimum correlation among the diagonal elements in the anti-image correlation matrix was 0.779; the determinant of correlation matrix was also 0.093; all the data had item-total correlations above 0.70; the minimum correlation between the items of the component was 0.557 and the maximum was 0.736; and 5 (83%) non-redundant residuals with absolute values greater than 0.05 were identified through the analysis.

leadership performance scale. A PCA was conducted on the 22 items of leadership performance scale with oblique rotation (Promax). The KMO measure confirmed the sampling adequacy for the analysis, $KMO = 0.899$. Bartlett's test of sphericity $\chi^2 (231) = 1628.146, p < 0.001$, implied that correlations among the items were sufficiently large for PCA. Four components through the initial PCA were emerged which in combination explained 71.70% of the variance.

However, Velicer's MAP test resulted in emergence of two components since the value of "smallest average squared partial correlation" in the table of "average partial correlations" was 0.0310 and the corresponding number to this value was 2.

As the final step, PCA for the second time was run and this time, it was requested to produce two components. It is notable that these two emerged components, containing 19 items, explained 61.14% of the variance. Table 3.19 exhibits the main information regarding the analysis.

Table 3.19
PCA with Promax Rotation for Leadership Performance

No.	Item	Component		h ²	Corrected item-total correlation	Alpha if item deleted
		1	2			
1	Achieving positive outcomes from external reviews of the area	.885	-.190	.575	.675	.928
2	Securing competitive funds related to learning and teaching as well as to the area of responsibility	.883	-.018	.758	.813	.921
3	Bringing innovative policies and practices into action	.832	.017	.714	.796	.922
4	Achieving a high profile for your area of responsibility	.806	.001	.650	.763	.924
5	Being invited to present to key groups on learning and teaching	.779	-.006	.599	.745	.925
6	Winning learning and teaching awards and prizes	.759	-.105	.471	.592	.934
7	Meeting student load targets	.726	-.082	.447	.609	.930
8	Publishing refereed papers and reports on learning and teaching	.719	.080	.607	.735	.925
9	Receiving positive user feedback for your area of responsibility	.650	.204	.658	.768	.924
10	Delivering agreed tasks or projects on time and to specification	.643	.169	.601	.730	.926
11	Successful implementation of new initiatives	.566	.327	.699	.774	.925
12	Formative involvement of external stakeholders in your work	.469	.359	.596	-	-
13	Producing significant improvements in learning and teaching quality	.377	.288	.383	-	-
14	Establishing a collegial working environment	-.217	.951	.650	.699	.907
15	Improving student satisfaction ratings for learning and teaching	-.161	.909	.638	.696	.908
16	Enhanced representation of equity groups	.007	.835	.706	.782	.900
17	Having high levels of staff support	-.033	.768	.554	.673	.909
18	Achieving goals set for your own professional development	-.007	.757	.566	.666	.910
19	Producing successful learning systems or infrastructures	.111	.669	.568	.682	.909
20	Delivering successful team projects in learning and teaching	.337	.633	.826	.858	.893
21	Producing future learning and teaching leaders	.261	.588	.639	.746	.903
22	Achieving a positive financial outcome for your area of responsibility	.283	.505	.545	-	-
Eigenvalue		11.969	1.481			
% of Variance		54.41%	6.73%			
Alpha		.932	.916			

Note. Factor loadings > .542 are in boldface and h² stands for communalities

It is remarkable that the minimum correlation among the elements of the anti-image correlation matrix was 0.827; the determinant of correlation matrix was less than 0.00001 (1.788E-9); all the items in both components had corrected item-total

correlations above 0.55; the correlation between the two components was 0.730; no cross-loading item in the two components was identified; and 106 (45%) non-redundant residuals with absolute value greater than 0.05 were identified in this analysis. In addition, through examining the correlation matrices of the items in each component, it was identified that in the first component, the minimum correlation was 0.333 and the maximum was 0.761; and in the second component, the minimum and maximum correlations were 0.430 and 0.789, respectively.

PCA results summary. On the grounds of the results of PCA, one component for personal capability scale, one component for interpersonal capability scale, two components for cognitive capability scale, five components for change-oriented capability scale, two components for generic competency scale, one component for role-specific competency scale, and two components for leadership performance scale were emerged. In Table 3.20, the labels of the emerged components or subscales, the number of items in each subscale, and the computed reliability estimates have been provided.

Table 3.20
The Final 87 Items Grouped in 14 Components

Scale	Subscale	Subscale items	Alpha at subscale level	Alpha at scale level
Personal Capability	Making Decisions and Judgments (MDJ)	8	0.821	0.821
Interpersonal Capability	Sharing Information and Data (SID)	9	0.851	0.851
Cognitive Capability	Strategic Adaptive Thinking (SAT)	7	0.891	0.913
	Analyzing Problems and Alternatives (APA)	6	0.841	
Change-oriented Capability	Strategic Environmental Scanning (SES)	9	0.924	0.951
	Supporting Organizational Culture (SOC)	6	0.887	
	Thinking Out of the Box (TOB)	5	0.867	
	Having Clear Objective Focus (HCOF)	3	0.768	
	Overcoming Obstacles (OOb)	3	0.739	
Generic Competency	Being Performance Driven (BPD)	4	0.852	0.859
	Understanding Operations and Risks (UOR)	4	0.815	

Table 3.20 continued				
Role-specific Competency	Benchmarking Standards and Practices (BSP)	4	0.889	0.889
Leadership	Recognition and Prestige (RP)	11	0.932	0.952
Performance	Academic Professional Excellence (APE)	8	0.916	

Research Questions and the Proposed Analysis

Table 3.21 summarizes the questions and the statistical tests to answer them.

Table 3.21
The Questions and Statistical Tests

No.	Question	Proposed Method	Comments
1	What are the descriptively prominent elements of capabilities and competencies in explaining leadership performance as well as the main leadership performance indicators in Malaysian HE context?	Descriptive Statistics	The results are applicable to the actual study sample.
2	To what extent different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian academic context? i. To what extent different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian HE system? ii. To what extent different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian public research & comprehensive HEIs? iii. To what extent different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian public focused HEIs? iv. To what extent different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian private focused HEIs?	Regression Variance-Based Structural Equation Modeling (VB-SEM)	The results are generalizable to the target population.
3	What are the main issues in Malaysian academic context from the perspectives of academic leaders? i. What are the priorities in Malaysian HE and its sectors from the perspectives of academic leaders? ii. What are the values in Malaysian HE and its sectors from the perspectives of academic leaders? iii. What are the challenges in Malaysian HE and its sectors from the perspectives of academic leaders? iv. What are the solutions in Malaysian HE and its sectors from the perspectives of academic leaders?	Thematic Analysis Descriptive Statistics	The results are applicable to the actual study sample.

As displayed in Table 3.21, descriptive statistics (Field, 2013) was considered for answering research question 1. Regarding research question 2 and to select the

appropriate approach, Hair, Hult, Ringle, and Sarstedt (2014) was consulted and following the proposed guidelines and due to below-mentioned issues, a VB-SEM approach was considered for the data analysis.

- The main aim was to predict the target construct (leadership performance) as well as to identify the main driver constructs (leadership capabilities and managerial competencies)
- Sample size issues and the shape of the distribution of the data
- Limitations related to the minimum number of items under each construct

Another important issue to be addressed is related to the extensively discussed VB-SEM bias in Covariance-Based Structural Equation Modeling (CB-SEM) textbooks in terms of overestimation and underestimation of the path coefficients in measurement and structural models, respectively. Although this limitation has been emphasized widely, as quoted by Hair et al. (2014), the results of simulation studies have shown very small differences between the results of CB-SEM and VB-SEM which is an indication of irrelevancy of the Partial Least Squares Structural Equation Modeling (PLS-SEM) bias for most applications (Reinartz, Haenlein, & Henseler, 2009). Hence, SmartPLS 3, as a VB-SEM analytic tool, was selected to analyze the data. Lastly, to answer research question 3, a thematic analysis using ATLAS.ti 7 was performed to categorize the collected data and SPSS 23 was utilized to generate descriptive and frequencies tables.

Summary

In this chapter the main philosophical assumptions, the design of the research study, the issues of sampling method as well as target population, instrumentation in

the pilot study, the procedure for pilot study, and the proposed techniques to answer research questions were covered. In the next chapter, the detailed information with respect to the main analysis to answer research questions have been provided.

CHAPTER 4

RESEARCH FINDINGS AND RESULTS

Introduction

This research study aimed at descriptively identifying the prominent leadership capabilities, managerial competencies, and leadership performance indicators in Malaysian HE on the grounds of the instrument which had been modified through chapter 3 in Malaysian context.

In addition, other objectives were persuaded through this research such as determining the extent to which leadership performance in Malaysian HE was explained by leadership capabilities and managerial competencies as well as investigating the current issues of Malaysian HE from the perspectives of Malaysian academic leaders. To achieve these objectives a series of descriptive and inferential statistic techniques were employed.

It is noteworthy that upon completion of data collection, missing values analysis was performed to predict and replace missing values prior to undertaking descriptive analysis to answer research question 1. In addition, for screening the data before performing analysis to answer research questions 2, SPSS 23 was employed.

For this aim, the screening procedure for multiple regression analysis suggested by Field (2013) was carried out followed by double checking the existence of outliers through examination of the factor scores (Garson, 2016). Consequently, outlying cases and those with undue influence over the analysis were detected and eliminated from the dataset. Afterwards, the data was considered for analysis through a Structural Equation Modeling (SEM) approach.

To answer research question 3, a thematic analysis using ATLAS.ti 7 was performed to identify the main categories within the collected data. Moreover, SPSS 23 was utilized to generate descriptive and frequencies tables. In the following subsections, all the procedures in terms of collecting data, data screening, data analysis, and interpretation of the results have been presented.

Data Collection Procedures in the Actual Study

A database of 2831 email addresses of potential respondents from 25 HEIs was created as the first step of data collection. The database was loaded to SurveyMonkey online survey management system and only 2786 email addresses were recognized as valid email addresses. As the next step, the survey instrument resulted from the pilot study was distributed among 2786 respondents.

A few electronic reminders were also sent to the respondents to ask them complete the survey. It is noticeable that the hardcopy of the survey was also distributed among the respondents of two faculties in one of the public universities.

In total, 432 respondents (418 through online platform and 14 through hardcopy distribution) from 22 universities filled out the survey instrument (Response rate: 18.34%). The first examination of the collected data revealed that 32 respondents had only answered demographic questions.

In addition, another 32 respondents had not rated the items of leadership performance scale. Consequently, 64 cases were deleted from the dataset. This procedure resulted to have 368 completed surveys (Final response rate: 13.20%). Table 4.1 displays the demographic information of the respondents in the actual study.

Table 4.1
Main Demographic Information of the Participants in the Actual Study

Demographic Variable	Actual Study	
Gender	Frequency	Percent
Male	219	59.5
Female	149	40.5
Age group	Frequency	Percent
Under 36	15	4.1
36-45	108	29.3
46-55	130	35.3
56-65	90	24.5
Over 65	25	6.8
Academic qualification	Frequency	Percent
Professor	161	43.8
Associate Professor	82	22.3
Assistant Professor/ Senior Lecturer	99	26.9
Other	26	7.1
University Type	Frequency	Percent
Public Research & comprehensive	196	53.3
Public Focused	94	25.5
Private Focused	78	21.2
Leadership role outside HE	Frequency	Percent
Yes	185	50.3
No	183	49.7

Missing Values Analysis

In Table 4.2, the results of missing values analysis at subscale level have been presented. Based on these results, EM and regression based techniques were employed to predict and replace the missing values in this research study.

Table 4.2
Missing Values Analysis Results

No.	Variable Name	No. of Items	Little MCAR Test Sig.	Method
1	Making decisions and judgments (MDJ)	8	0.001	Regression
2	Sharing information and data (SID)	9	0.002	Regression
3	Strategic adaptive thinking (SAT)	7	0.012	Regression
4	Analyzing problems and alternatives (APA)	6	0.985	EM
5	Strategic environmental scanning (SES)	9	0.208	EM
6	Supporting organizational culture (SOC)	6	0.776	EM
7	Thinking out of the box (TOB)	5	0.529	EM
8	Having clear objective focus (HCOF)	3	0.575	EM
9	Overcoming obstacles (OOB)	3	0.388	EM
10	Being performance driven (BPD)	4	0.309	EM
11	Understanding operations and risks (UOR)	4	0.407	EM
12	Benchmarking standards and practices (BSP)	4	0.045	Regression
13	Recognition and Prestige (RP)	11	0.256	EM
14	Academic professional excellence (APE)	8	0.034	Regression

Research Question 1

To answer this research question, the “Descriptives” command in SPSS 23 was run to generate the mean and SD scores for all the items in the actual study survey. These statistics were generated at subscale level to provide a more precise picture about the perceptions of the respondents in the actual study sample with respect to leadership capabilities, managerial competencies, and leadership performance. Afterward, the items were ranked to enable the researcher compare the items descriptively. It is noticeable that the following 5-point Likert scale, starting from low importance to high importance, had been used in the actual study instrument:

1= low importance

2= low to medium low importance

3= medium importance

4= medium to high importance

5= high importance

The results, which are applicable to the actual study sample, have been elaborated in the following subsections.

personal capability.

making decisions and judgements. Making decisions and judgements was the only subscale constructing personal capability. As displayed in Table 4.3, the item “Wanting to achieve the best outcome possible”, with a focus on outcome-orientation, had been rated by the respondents in the category of HE system, public research & comprehensive HEIs, and public focused HEIs as the most prominent item to

determine leadership performance. Regarding private focused HEIs context, the respondents had rated the item “Remaining calm under pressure or when things take an unexpected turn and keeping things in perspective”, with an emphasize on calmness and peacefulness, as the most prominent element.

Table 4.3
Descriptive Statistics of Making Decisions and Judgements

Items of Making Decisions and Judgements	HE System (N=368)		Public Research & Comprehensive HEIS (N=196)		Public Focused HEIs (N=94)		Private Focused HEIs (N=78)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1- Being confident to take calculated risks	4.166	.762	4.143	.765	4.234	.782	4.141	.734
2- Wanting to achieve the best outcome possible	4.630	.608	4.658	.591	4.660	.597	4.526	.659
3- Understanding my personal strengths and limitations and bouncing back from adversity	4.411	.645	4.412	.676	4.394	.643	4.431	.569
4- Admitting to and learning from my errors and deferring quick judgments	4.387	.662	4.360	.681	4.383	.674	4.462	.596
5- Remaining calm under pressure or when things take an unexpected turn and keeping things in perspective	4.528	.652	4.478	.697	4.585	.629	4.586	.550
6- Being willing to take a hard decision	4.332	.751	4.367	.690	4.255	.816	4.338	.819
7- Pitching in and undertaking menial tasks when needed	3.867	.903	3.899	.923	3.862	.899	3.792	.862
8- Taking responsibility for program activities and outcomes	4.480	.629	4.508	.626	4.468	.634	4.423	.635
Average at subscale level	4.350	***	4.353	***	4.355		4.337	***

The maximum and minimum mean scores are in **boldface**.

Also, the item “Pitching in and undertaking menial tasks when needed”, had been rated as the least prominent item in Malaysian HE system and all its sectors. Additionally, the focus of this item was on undertaking menial tasks in case it was necessary.

It is remarkable that the mean score of this subscale in the context of public focused HEIs (M=4.355) was higher in comparison with the subscale mean scores in the other 3 contexts.

interpersonal capability.

sharing information and data. The items of sharing information and data subscale, as the only subscale under interpersonal capability scale, with their means and SDs have been displayed in Table 4.4.

Table 4.4
Descriptive Statistics of Sharing Information and Data

Items of Sharing Information and Data	HE System (N=368)		Public Research & Comprehensive HEIS (N=196)		Public Focused HEIs (N=94)		Private Focused HEIs (N=78)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
9- Giving and receiving constructive feedback to/from work colleagues and others	4.478	.638	4.492	.648	4.447	.650	4.482	.604
10- Developing and using networks of colleagues to solve key workplace problems	4.311	.710	4.293	.728	4.351	.651	4.305	.738
11- Empathizing and working productively with students from a wide range of backgrounds	4.322	.745	4.399	.749	4.245	.714	4.220	.762
12- Empathizing and working productively with staff and other key players from a wide range of backgrounds	4.443	.670	4.427	.694	4.514	.616	4.397	.671
13- Listening to different points of view before coming to a decision	4.462	.668	4.467	.703	4.516	.607	4.385	.649
14- Developing and contributing positively to team-based programs	4.473	.638	4.449	.696	4.531	.597	4.462	.527
15- Working with very senior people within and beyond my university without being intimidated	4.166	.735	4.156	.715	4.239	.724	4.100	.797
16- Working constructively with people who are 'resistors' or are over-enthusiastic	3.736	.900	3.788	.879	3.713	.927	3.633	.919
17- Motivating others to achieve positive outcomes	4.550	.632	4.558	.619	4.578	.587	4.494	.714
Average at subscale level	4.327	***	4.337	***	4.348	***	4.275	***

The maximum and minimum mean scores are in **boldface**.

The examination this information did reveal that the item “Motivating others to achieve positive outcomes”, had been rated by the respondents in all the 4 contexts as the most important item to explain leadership performance. The focus of this item was on motivating and inspiring people towards outcome-orientation. Additionally, the item “Working constructively with people who are 'resistors' or are over-enthusiastic” had been rated as the least prominent element. In fact, it had the minimum

mean scores in all the 4 contexts. Also, this item was the only item with mean scores smaller than 4 in all the contexts and its focus was on dealing with people who resist new programs. It is worth noting that the mean score of sharing information and data subscale in the context of public focused HEIs (M=4.348) was higher comparing with the subscale mean scores in the other 3 contexts.

cognitive capability.

strategic adaptive thinking. In regards to strategic adaptive thinking, the examination of Table 4.5 indicated that the item “Having a clear, justified and achievable direction in my area of responsibility” had been rated by the respondents in Malaysian HE system and its sectors as the most prominent element in contributing to leadership performance. The concentration of this item was on envisioning capacity of the academic leaders.

Table 4.5
Descriptive Statistics of Strategic Adaptive Thinking

Items of Strategic Adaptive Thinking	HE System (N=368)		Public Research & Comprehensive HEIs (N=196)		Public Focused HEIs (N=94)		Private Focused HEIs (N=78)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
18- Having a clear, justified and achievable direction in my area of responsibility	4.691	.520	4.678	.558	4.707	.490	4.705	.459
19- Making sense of and learning from experience	4.564	.582	4.554	.583	4.532	.617	4.628	.537
20- Adjusting a plan of action in response to problems that are identified during its implementation	4.461	.608	4.463	.612	4.445	.648	4.474	.552
21- Setting and justifying priorities for my daily work by using previous experience to figure out issues	4.343	.677	4.376	.652	4.356	.673	4.244	.742
22- Seeing the best way to respond to a perplexing situation	4.291	.717	4.273	.741	4.274	.692	4.359	.689
23- Thinking creatively and laterally	4.510	.632	4.513	.647	4.489	.618	4.526	.618
24- Seeing and then acting on an opportunity for a new direction	4.367	.678	4.392	.665	4.331	.709	4.346	.680
Average at subscale level	4.461	***	4.464	***	4.448	***	4.469	***

The maximum and minimum mean scores are in **boldface**.

In addition, the item “Seeing the best way to respond to a perplexing situation”, with a focus on responding to the turmoil environments, had the minimum mean score in Malaysian HE system, public research & comprehensive HEIs, and public focused HEIs contexts. This shed light on the fact that this item was the least important element in these contexts. Focusing on private focused HEIs, the results of the examination of the data revealed that the item “Setting and justifying priorities for my daily work by using previous experience to figure out issues”, with a stress on prioritizing daily activities, had been rated by the respondents as the least prominent element in this context.

It is noteworthy that the mean scores of all the items under this subscale were above 4, indicating the considerable significance of this subscale in explaining leadership performance from the perspective of the respondents in the actual study. Also, the mean score of strategic adaptive thinking subscale in the context of private focused HEIs (M=4.469) was higher in comparison with the subscale mean scores in the other 3 contexts.

analyzing problems and alternatives. The most prominent item under this subscale, which had been rated by the respondents in Malaysian HE system and its sectors, was “Diagnosing the underlying causes of a problem and taking appropriate action to address it”. In other words, the mean scores of this item, as displayed in Table 4.6 were maximum in all the 4 contexts and its focus was on leaders’ problem solving skills.

Table 4.6
Descriptive Statistics of Analyzing Problems and Alternatives

Items of Analyzing Problems and Alternatives	HE System (N=368)		Public Research & Comprehensive HEIS (N=196)		Public Focused HEIs (N=94)		Private Focused HEIs (N=78)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
25- Recognizing patterns in a complex situation	4.260	.709	4.270	.702	4.198	.727	4.308	.708
26- Recognizing how seemingly unconnected activities are linked	4.006	.791	3.970	.802	4.063	.745	4.026	.821
27- Identifying from a mass of information the core issue or opportunity in any situation	4.236	.761	4.274	.769	4.191	.723	4.192	.790
28- Knowing that there is never a fixed set of steps for solving workplace problems	4.278	.784	4.252	.825	4.255	.761	4.372	.705
29- Tracing out and assessing the likely consequences of alternative courses of action	4.176	.721	4.183	.719	4.160	.752	4.179	.698
30- Diagnosing the underlying causes of a problem and taking appropriate action to address it	4.447	.657	4.476	.658	4.404	.693	4.427	.612
Average at subscale level	4.234	***	4.237	***	4.212	***	4.251	***

The maximum and minimum mean scores are in **boldface**.

Also, the item “Recognizing how seemingly unconnected activities are linked” had been rated by the respondents in Malaysian HE system and its sectors as the least important leadership performance determinant. This item had the minimum mean scores in all the 4 contexts and its focus was on recognizing the connectedness of the activities in academic environments.

It is remarkable that the mean scores of all the items in the 4 different contexts were greater than 4. This suggested the prominence of these items in explaining leadership performance from the viewpoints of the actual study sample. Also, the mean score of analyzing problems and alternatives subscale in the context of private focused HEIs (M=4.251) was greater than its mean scores in the other 3 contexts.

change-oriented capability.

strategic environmental scanning. With respect to strategic environmental scanning, the examination of the descriptive statistics displayed in Table 4.7 shed light

on the fact that the item “Encouraging the use of new technology and knowledge sharing programs among the people at the university” had the maximum mean scores in Malaysian HE system and public research & comprehensive HEIs contexts. The stress of this item was on utilizing new technology and knowledge sharing programs at universities. Additionally, the item “Being sensitive to the information regarding the technological developments”, focusing on sensitivity to technological developments, had the maximum mean score in the context of public focused HEIs. Moreover, the item “Monitoring the external environment more when the university is highly dependent on outsiders, faces severe competition and the environment is rapidly changing”, with an emphasize on strategic environmental scanning, had the maximum mean score in private focused HEIs context.

Table 4.7
Descriptive Statistics of Strategic Environmental Scanning

Items of Strategic Environmental Scanning	HE System (N=368)		Public Research & Comprehensive HEIs (N=196)		Public Focused HEIs (N=94)		Private Focused HEIs (N=78)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
31- Being sensitive to the information regarding the technological developments	4.023	.808	4.035	.805	4.128	.751	3.866	.867
32- Monitoring the external environment more when the university is highly dependent on outsiders, faces severe competition and the environment is rapidly changing	4.058	.815	4.087	.820	4.004	.763	4.051	.866
33- Using more accurate, shared mental models to make strategic decisions or performance improvements	4.046	.857	4.067	.840	4.096	.777	3.936	.985
34- Explaining about undesirable outcomes that are likely to occur if new opportunities are exploited by competitors	3.880	.862	3.873	.894	3.848	.829	3.936	.827
35- Influencing how new knowledge or a new technology is diffused and applied in the university by explaining why it is important	4.044	.812	4.045	.786	4.082	.889	3.995	.787
36- Identifying environmental threats and opportunities for the university and interpreting the collected information	4.088	.850	4.114	.815	4.119	.865	3.986	.919
37- Being sensitive to the information regarding political issues (e.g. governmental policies and actions of competitors)	3.897	.958	3.930	.932	3.880	.971	3.833	1.012
38- Helping the people to better recognize failures	3.980	.906	4.050	.877	3.869	.986	3.936	.873

Table 4.7 continued									
39- Encouraging the use of new technology and knowledge sharing programs among the people at the university	4.092	.835	4.143	.795	4.099	.883	3.957	.869	
Average at subscale level	4.012	***	4.038	***	4.014	***	3.944	***	
The maximum and minimum mean scores are in boldface .									

With respect to the least prominent element under this subscale, the examination of the data showed that the item “Explaining about undesirable outcomes that are likely to occur if new opportunities are exploited by competitors”, had been rated by the respondents in Malaysian HE system, public research & comprehensive HEIs, and public focused HEIs contexts as the least prominent item. The focus of this item was on taking existing opportunities before they are being exploited by the competitors in the market. Also, the item “Being sensitive to the information regarding political issues (e.g. governmental policies and actions of competitors)” had the minimum mean score in the context of private focused HEIs. The stress of this item was on sensitivity to political and governmental information.

It is notable that the mean scores of some items under this subscale were smaller than 4. In addition, the mean score of strategic environmental scanning subscale in the context of public research & comprehensive HEIs (M=4.038) was greater than its mean scores in the other 3 contexts.

supporting organizational culture. The descriptive statistics associated with supporting organizational culture subscale have been presented in Table 4.8. The item “Building confidence among the people that they will be successful in implementing change programs” had been rated by the respondents in Malaysian HE system, public research & comprehensive HEIs, and public focused HEIs as the main leadership performance determinant. The emphasize of this item was on flourishing people who

make changes confidently. About private focused HEIs context, the results showed that the item “Creating a climate of psychological safety and mutual trust in the university”, with a stress on building a psychologically safe workplace, had been rated as the most prominent element with the maximum mean score in this context.

Table 4.8
Descriptive Statistics of Supporting Organizational Culture

Items of Supporting Organizational Culture	HE System (N=368)		Public Research & Comprehensive HEIS (N=196)		Public Focused HEIs (N=94)		Private Focused HEIs (N=78)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
40- Explaining why the change is necessary and needed	4.328	.750	4.395	.697	4.269	.792	4.231	.821
41- Creating a climate of psychological safety and mutual trust in the university	4.373	.741	4.364	.761	4.275	.750	4.513	.659
42- Creating an organizational culture that values creativity and entrepreneurial activities	4.254	.800	4.314	.788	4.098	.791	4.293	.824
43- Providing information showing how similar work units or competitors have better performance	3.962	.867	4.023	.826	3.977	.905	3.794	.908
44- Providing resources for the people to increase learning from mistakes and failures	4.116	.812	4.126	.785	4.108	.796	4.099	.903
45- Building confidence among the people that they will be successful in implementing change programs	4.392	.668	4.410	.675	4.425	.634	4.310	.691
Average at subscale level	4.238	***	4.272	***	4.192	***	4.206	***

The maximum and minimum mean scores are in **boldface**.

Also “Providing information showing how similar work units or competitors have better performance” was the least prominent item rated the respondents in all the different 4 contexts. In other words, the mean scores of this item in the 4 contexts were minimum and its concentration was on providing examples in terms of performance effectiveness.

It is notable that the mean score of supporting organizational culture subscale in the context of public research & comprehensive HEIs (M=4.272) was higher than its mean scores in the other 3 contexts.

thinking out of the box. As displayed in Table 4.9, the item “Seeing possibilities rather than problems”, with a stress on optimism, had been rated as the most prominent element in Malaysian HE system, public research & comprehensive HEIs, and private focused HEIs contexts. In regards to public focused HEIs, the results showed that the item “Liking and encouraging to discuss new ideas” had the maximum mean score in this context.

Table 4.9
Descriptive Statistics of Thinking Out of the Box

Items of Thinking Out of the Box	HE System (N=368)		Public Research & Comprehensive HEIS (N=196)		Public Focused HEIs (N=94)		Private Focused HEIs (N=78)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
46- Being willing to take risks in decisions	4.324	.719	4.337	.748	4.346	.686	4.262	.691
47- Offering ideas about new and different ways of doing things and accepting innovative proposals	4.348	.678	4.396	.685	4.351	.639	4.224	.696
48- Seeing possibilities rather than problems	4.373	.759	4.433	.743	4.334	.781	4.269	.768
49- Liking and encouraging to discuss new ideas	4.359	.701	4.403	.637	4.372	.729	4.231	.805
50- Supporting the activities to facilitate learning and acquire new knowledge from research, small-scale experiments and external resources	4.340	.722	4.385	.680	4.327	.758	4.244	.776
Average at subscale level	4.349	***	4.391	***	4.346	***	4.246	***

The maximum and minimum mean scores are in **boldface**.

Also, the item “Being willing to take risks in decisions” had been rated by the respondents in Malaysian HE system and public research & comprehensive HEIs contexts as the least important item in explaining leadership performance. The focus of this item was on risk taking abilities of academic leaders. Additionally, the item “Supporting the activities to facilitate learning and acquire new knowledge from research, small-scale experiments and external resources”, with an emphasize on gaining knowledge, had been rated by the respondents in public focused HEIs context as the least prominent item. Moreover, the item “Offering ideas about new and

different ways of doing things and accepting innovative proposals” had the minimum mean score in the context of private focused HEIs. The concentration of this item was on innovativeness.

It is noteworthy that all the items in this category had mean scores greater than 4, implying the meaningfulness of this subscale in contributing to leadership performance in HE institutions from the viewpoints of the actual study sample. Also, the mean score of thinking out of the box subscale in the context of public research & comprehensive HEIs (M=4.391) was greater than its mean scores in the other 3 contexts.

having clear objective focus. The three item under having clear objective focus subscale with their means and SDs have been exhibited in Table 4.10. As shown, the item “Avoiding the development of visions based on false assumptions”, focusing on preciseness in vision building, had been rated by the respondents in the 4 contexts as the most significant item in determining leadership performance.

Table 4.10
Descriptive Statistics of Having Clear Objective Focus

Items of Having Clear Objective Focus	HE System (N=368)		Public Research & Comprehensive HEIS (N=196)		Public Focused HEIs (N=94)		Private Focused HEIs (N=78)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
51- Avoiding taking actions that can divert attention from innovative solutions	3.892	.913	3.916	.932	3.965	.758	3.744	1.025
52- Avoiding the development of visions based on false assumptions	4.103	.901	4.093	.895	4.086	.900	4.149	.925
53- Avoiding pursuing a risky and unrealistic vision that can result to performance decline	4.036	.875	4.002	.911	4.059	.816	4.095	.858
Average at subscale level	4.010	***	4.004	***	4.037	***	3.996	***

The maximum and minimum mean scores are in **boldface**.

Also, the item “Avoiding taking actions that can divert attention from innovative solutions” had been ranked by the respondents in the actual study as the least prominent item. In fact, the mean scores of this item were minimum in the 4 different contexts. In addition, this item, focusing on avoiding any distracting actions which could impede innovative solutions, was the only item in the 4 contexts with a mean score smaller than 4. Moreover, the mean score of having clear objective focus subscale in the context of public focused HEIs (M=4.037) was greater than its mean scores in the other 3 contexts.

overcoming obstacles. Focusing on overcoming obstacles subscale, the examination of the descriptive statistics displayed in Table 4.11 highlighted the fact that the item “Making quick decisions when necessary” had been rated as the most significant element in determining leadership performance in the 4 different contexts. The stress of this item was on leaders’ quick decision making capacities.

Table 4.11
Descriptive Statistics of Overcoming Obstacles

Items of Overcoming Obstacles	HE System (N=368)		Public Research & Comprehensive HEIS (N=196)		Public Focused HEIs (N=94)		Private Focused HEIs (N=78)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
54- Trying to remove the obstacles related to maintaining the status quo	3.833	.927	3.947	.911	3.712	.922	3.692	.946
55- Communicating the vision with colorful and emotional language	3.613	1.054	3.701	1.053	3.672	.952	3.323	1.133
56- Making quick decisions when necessary	4.262	.777	4.237	.786	4.328	.735	4.244	.809
Average at subscale level	3.903	***	3.961	***	3.904	***	3.753	***

The maximum and minimum mean scores are in **boldface**.

Additionally, the item “Communicating the vision with colorful and emotional language”, with an emphasize on an appropriate way of communicating the vision, had been rated by the respondents as the least important element. It is noticeable that only one item had mean scores greater than 4 in the different contexts.

Also, the mean score of overcoming obstacles subscale in the context of public research & comprehensive HEIs (M=3.961) was greater than its mean scores in the other 3 contexts.

generic competency.

being performance driven. The mean scores and SDs of the items under being performance driven subscale have been displayed in Table 4.12. Regarding the most prominent element in this category, the item “Being able to organize my work and manage time effectively” had been rated by the respondents. The mean scores of this item were maximum in the 4 different contexts and its stress was on leaders’ time management skills.

Table 4.12
Descriptive Statistics of Items of Being Performance Driven

Items of Being Performance Driven	HE System (N=368)		Public Research & Comprehensive HEIS (N=196)		Public Focused HEIs (N=94)		Private Focused HEIs (N=78)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
57- Being able to organize my work and manage time effectively	4.595	.612	4.633	.550	4.538	.681	4.571	.673
58- Being able to make effective presentations to a range of different groups	4.400	.710	4.459	.657	4.376	.665	4.282	.866
59- Having sound administrative and resource management skills	4.414	.734	4.414	.746	4.377	.698	4.462	.751
60- Being able to use IT effectively to communicate and perform key work functions and enhance my professional development	4.221	.756	4.243	.754	4.255	.761	4.125	.760
Average at subscale level	4.408	***	4.437	***	4.386	***	4.360	***

The maximum and minimum mean scores are in **boldface**.

With respect to the least important element, “Being able to use IT effectively to communicate and perform key work functions and enhance my professional development” had been rated. The focus of this item was on IT utilization to communicate and enhance performance effectiveness.

It is remarkable that all the items under this subscale had mean scores greater than 4 in different contexts, implying the meaningfulness of them in determining leadership performance from the perspectives of the sampled respondents. Moreover, the mean score of being performance driven subscale in the context of public research & comprehensive HEIs (M=4.437) was greater than its mean scores in the other 3 contexts.

understanding operations and risks. The most prominent item in this category, as exhibited in Table 4.13, was “Understanding how universities operate”. The mean scores of this item, concentrating on university operations, were maximum in the 4 different contexts.

Table 4.13
Descriptive Statistics of Understanding Operations and Risks

Items of Understanding Operations and Risks	HE System (N=368)		Public Research & Comprehensive HEIs (N=196)		Public Focused HEIs (N=94)		Private Focused HEIs (N=78)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
61- Understanding of industrial relations issues and processes as they apply to higher education	4.118	.818	4.112	.845	4.214	.714	4.018	.861
62- Being able to help my staff learn how to deliver necessary changes effectively	4.297	.710	4.342	.717	4.299	.636	4.179	.769
63- Understanding the role of risk management and litigation in my work	4.115	.790	4.130	.784	4.213	.717	3.963	.873
64- Understanding how universities operate	4.433	.732	4.408	.757	4.500	.652	4.412	.763
Average at subscale level	4.241	***	4.248	***	4.307	***	4.143	***

The maximum and minimum mean scores are in **boldface**.

In addition, the item “Understanding the role of risk management and litigation in my work” had been ranked as the least important item from the viewpoints of the respondents in the contexts of Malaysian HE system, public focused HEIs, and private focused HEIs. The emphasize of this item was on understanding the significance of risk management and litigation in workplaces. With respect to public research &

comprehensive HEIs, the item “Understanding of industrial relations issues and processes as they apply to higher education”, with a stress on university-industry linkages, had the minimum mean score.

It is noticeable that the mean scores of all the items in different contexts were greater than 4 except the mean score of the item “Understanding the role of risk management and litigation in my work” in the context of private focused HEIs. Additionally, the mean score of understanding operations and risks subscale in the context of public focused HEIs (M=4.307) was greater than its mean scores in the other 3 contexts.

role-specific competency.

benchmarking standards and practices. Benchmarking standards and practices was the only subscale under role-specific competency. As displayed in Table 4.14, the item “Understanding how to develop and evaluate an effective higher education learning program” had been rated by the respondents in the contexts of Malaysian HE system, public research & comprehensive HEIs, and public focused HEIs as the most pivotal element in explaining leadership performance. The concentration of this item was on designing learning programs at universities. With respect to private focused HEIs context, the item “Having a high level of up-to-date knowledge of what engages university students in productive learning” had the maximum mean score. The emphasize of this item was on knowledge associated with engaging students in productive learning processes.

Table 4.14
Descriptive Statistics of Benchmarking Standards and Practices

Items of Benchmarking standards and Practices	HE System (N=368)		Public Research & Comprehensive HEIS (N=196)		Public Focused HEIs (N=94)		Private Focused HEIs (N=78)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
65- Understanding how to develop and evaluate an effective higher education learning program	4.372	.747	4.401	.726	4.399	.682	4.266	.864
66- Knowing how to identify and disseminate good learning and management practice across the unit or university	4.294	.738	4.308	.748	4.266	.721	4.293	.739
67- Having a high level of up-to-date knowledge of what engages university students in productive learning	4.358	.752	4.361	.768	4.380	.722	4.327	.755
68- Being on top of current developments in learning and teaching	4.316	.808	4.349	.779	4.330	.767	4.218	.921
Average at subscale level	4.335	***	4.355	***	4.344	***	4.276	***

The maximum and minimum mean scores are in **boldface**.

Additionally, the item “Knowing how to identify and disseminate good learning and management practice across the unit or university”, had the minimum mean scores in the contexts of Malaysian HE system, public research & comprehensive HEIs, and private focused HEIs. The focus of this item was on good practices dissemination in higher learning institutions. Moreover, the item “Being on top of current developments in learning and teaching”, with a focus on having the most recent knowledge on learning and teaching, had the minimum mean score in the context of private focused HEIs.

It is noticeable that all the items had mean scores greater than 4 in the 4 different contexts, indicating the meaningfulness of them in explaining leadership performance from the perspectives of the sampled academic leaders. Also, the mean score of benchmarking standards and practices subscale in the context of public research & comprehensive HEIs (M=4.355) was greater than its mean scores in the other 3 contexts.

leadership performance.

recognition and prestige. The mean scores and SDs of the performance indicators under recognition and reputation subscale have been displayed in Table 4.15. The item “Delivering agreed tasks or projects on time and to specification”, with a focus on effectiveness and punctuality, had been ranked by the respondents in the 4 different contexts as the most important performance indicator.

Table 4.15
Descriptive Statistics of Recognition and Prestige

Items of Recognition and Prestige	HE System (N=368)		Public Research & Comprehensive HEIS (N=196)		Public Focused HEIs (N=94)		Private Focused HEIs (N=78)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
69- Achieving positive outcomes from external reviews of the area	4.121	.776	4.199	.742	3.995	.785	4.077	.834
70- Securing competitive funds related to learning and teaching as well as to the area of responsibility	4.027	.873	4.071	.807	4.085	.863	3.846	1.020
71- Bringing innovative policies and practices into action	4.258	.767	4.306	.769	4.267	.791	4.128	.727
72- Achieving a high profile for your area of responsibility	4.118	.853	4.138	.909	4.191	.708	3.979	.863
73- Being invited to present to key groups on learning and teaching	3.915	.908	4.003	.863	3.915	.888	3.692	1.010
74- Winning learning and teaching awards and prizes	3.418	1.073	3.453	1.080	3.415	1.031	3.333	1.113
75- Meeting student load targets	4.052	.838	4.123	.814	4.022	.880	3.910	.840
76- Publishing refereed papers and reports on learning and teaching	4.003	.975	4.006	.990	4.117	.890	3.859	1.028
77- Receiving positive user feedback for your area of responsibility	4.292	.699	4.314	.702	4.340	.665	4.176	.731
78- Delivering agreed tasks or projects on time and to specification	4.465	.688	4.464	.682	4.479	.668	4.449	.732
79- Successful implementation of new initiatives	4.338	.719	4.374	.662	4.308	.776	4.282	.788
Average at subscale level	4.091	***	4.132	***	4.103	***	3.976	***

The maximum and minimum mean scores are in **boldface**.

Also, the item “Winning learning and teaching awards and prizes” had the minimum mean scores in the 4 different contexts. This suggested the least prominence of this item from the perspectives of respondents in the actual study as a leadership performance indicator. The focus of this item was on winning prizes. It is noticeable that the mean score of recognition and prestige subscale in the context of public

research & comprehensive HEIs (M=4.132) was higher than its mean scores in the other 3 contexts.

academic professional excellence. Focusing on academic professional excellence subscale, the examination of the descriptive statistics in Table 4.16 showed that the item “Establishing a collegial working environment”, with an emphasize on creating a conducive academic environment, had been ranked by the respondents in the context of Malaysian HE system and public research & comprehensive HEIs as the most important leadership performance indicator. Also, the item “Having high levels of staff support”, stressing on receiving support from the staff, was identified as the most pivotal indicator in the context of public focused HEIs. Additionally, the item “Improving student satisfaction ratings for learning and teaching” had the maximum mean score in the context of private focused HEIs. The focus of this item was on improving student satisfaction ratings.

Table 4.16
Descriptive Statistics of Academic Professional Excellence

Items of Academic Professional Excellence	HE System (N=368)		Public Research & Comprehensive HEIS (N=196)		Public Focused HEIs (N=94)		Private Focused HEIs (N=78)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
80- Establishing a collegial working environment	4.438	0.704	4.527	.644	4.393	.736	4.268	.780
81- Improving student satisfaction ratings for learning and teaching	4.416	0.695	4.444	.659	4.393	.736	4.372	.740
82- Enhanced representation of equity groups	3.983	0.833	4.033	.845	3.940	.803	3.910	.840
83- Having high levels of staff support	4.428	0.712	4.463	.682	4.436	.665	4.330	.834
84- Achieving goals set for your own professional development	4.318	0.785	4.383	.752	4.298	.801	4.178	.834
85- Producing successful learning systems or infrastructures	4.307	0.722	4.371	.704	4.294	.774	4.163	.688
86- Delivering successful team projects in learning and teaching	4.277	0.750	4.345	.702	4.245	.772	4.145	.828
87- Producing future learning and teaching leaders	4.397	0.712	4.449	.689	4.340	.741	4.333	.733
Average at subscale level	4.320	***	4.377	***	4.293	***	4.212	***

The maximum and minimum mean scores are in **boldface**.

With respect to the least important leadership performance indicator, the item “Enhanced representation of equity groups” was identified with the minimum mean scores in the 4 different contexts. The focus of this item was on representation of equity groups.

It is remarkable that the mean score of academic professional excellence subscale in the context of public research & comprehensive HEIs (M=4.377) was greater than its mean scores in the other 3 contexts.

Research Question 2

To answer this research question, many issues were considered in terms of selecting an appropriate approach. Nonetheless, following the guiding principles proposed by Hair et al. (2014), VB-SEM was considered for data analysis. The initial model, to be estimated using VB-SEM in Malaysian HE system and its sectors, has been displayed in Figure 4.1. It is noticeable that all the information associated with data screening and analysis have been provided for research questions 2-i to 2-iv.

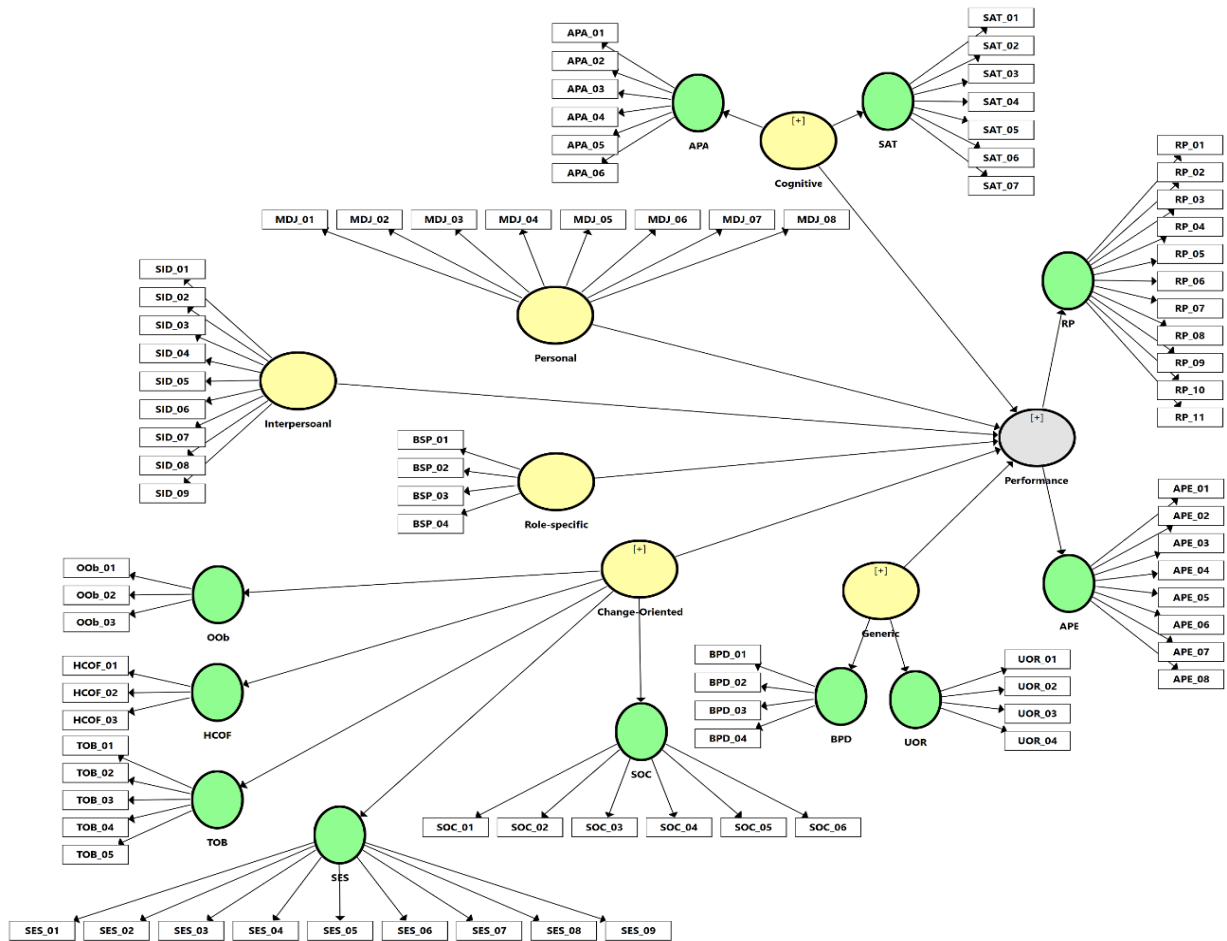


Figure 4.1. The Initial Path Model

research question 2-i.

initial data screening procedure. A few scatterplots were charted for roughly estimating the linear relationships between the exogenous and endogenous constructs as well as looking for obvious unusual cases (Field, 2013). Thereafter, a preliminary regression analysis was carried out using SPSS 23 to detect cases with undue influence over the main analysis. Then, the selected generated outputs including residuals, Cook's distances as overall influence of a cases on a model (Cook & Weisberg, 1982), Mahalanobis distances (Barnett & Lewis, 1994; Stevens, 2009), standardized DFBeta and DFFit values (Field, 2013), and Leverage values (Field, 2013; Stevens, 2009)

were examined. This procedure was followed by re-investigating the existence of outliers in the dataset on the basis of standardized factor scores (Garson, 2016) using SmartPLS 3.

Through this procedure 22 outlying cases with overall undue influence over the analysis were detected and removed from the dataset. Hence, Partial Least Squares (PLS) algorithm was run for the data collected from 346 cases.

reflective measurement model evaluation. The procedure to evaluate reflective measurement models proposed by Hair et al. (2014) were followed to evaluate each of the first and second order reflective measurement models in the path model.

indicator reliability. Indicator reliability for the manifest variables (indicators) of each latent construct were evaluated. All the items with outer loadings below 0.4 were deleted. In addition, items with outer loadings between 0.4 and 0.7 were assessed thoroughly and only those were deleted which their removal did lead to an increase in the composite reliability or Average Variance Extracted (AVE) above the suggested threshold values.

It is noticeable that the threshold value for AVE is 0.5; the values of 0.6 to 0.7 for exploratory research are viewed as acceptable threshold values for composite reliability; values of 0.7 to 0.9 for advanced stages of research are regarded as satisfactory values for composite reliability; and composite reliability values of 0.9 (and definitely greater than 0.95) are not desirable since they indicate that the manifest variables or indicators are unlikely to be valid measures for the construct (Hair et al., 2014). Through this procedure, 23 non-contributing items were removed.

Cronbach's alpha, composite reliability, and convergent validity. Cronbach's Alpha statistic has been viewed as the traditional measure of estimating internal consistency of the latent constructs. This coefficient is very sensitive to the number of indicators in a scale, it generally tends to underestimate the internal reliability, and assumes that all the indicator variables are equally reliable. Due to the limitations of Cronbach's Alpha statistic in the population, composite reliability measure is computed in research studies. It is noteworthy that PLS-SEM prioritizes the manifest variables or indicators based on their individual reliability.

The other main assessment of the measurement model is about the concept of convergent validity. This characteristic of a latent variable is the extent to which an indicator correlates positively with alternative indicators of the same latent variable. A common measure to establish convergent validity is the AVE. This criterion is defined as the grand mean value of the squared loadings of the manifest variables associated with the construct. This average is equivalent to the communality of a construct. An AVE value of 0.5 or higher, on average, indicates that the latent variable explains more than 50 percent of the variance of its indicator variables. Conversely, when the AVE value is less than 50 percent, on average, it is viewed as an indication that more error remains in the indicators than the variance explained by the latent variable (Hair et al., 2014).

In Table 4.17, Cronbach Alpha, composite reliability, and AVE values of the latent variables have been presented, indicating no cause for concern in terms of measurement models evaluation since all the values were well above the recommended minimum values.

Table 4.17
Alpha, Composite Reliability, and AVE

Constructs	Cronbach's Alpha	Composite Reliability	AVE
APA	0.884	0.912	0.633
APE	0.859	0.899	0.642
BPD	0.800	0.870	0.627
Change-oriented	0.944	0.950	0.512
Cognitive	0.923	0.934	0.522
Generic	0.880	0.905	0.544
Interpersonal	0.823	0.872	0.532
Performance	0.897	0.916	0.521
Personal	0.768	0.842	0.517
RP	0.797	0.860	0.553
Role-specific	0.867	0.910	0.717
SAT	0.859	0.893	0.544
SES	0.888	0.912	0.598
SOC	0.879	0.908	0.623
TOB	0.871	0.907	0.660
UOR	0.813	0.877	0.641

discriminant validity. In this study, the HeteroTrait-MonoTrait (HTMT) ratio (Henseler, Ringle, & Sarstedt, 2015) was applied as the new criterion to assess discriminant validity in variance-based structural equation modelling. The rationale to apply this new criterion was the insufficiency in sensitivity of Fornell-Larcker criterion and cross-loadings based approaches to detect discriminant validity problems (Garson, 2016). As cited by Henseler et al. (2015), while the HTMT value less than 1 is considered as the indication of the establishment of discriminant validity between two constructs, three threshold values for HTMT criterion have been suggested as the followings:

- HTMT_{0.85}: This criterion is the most conservative criterion in assessing discriminant validity. HTMT values greater than 0.85 indicate discriminant validity problems (Kline, 2011).
- HTMT_{0.9}: This criterion is a more liberal criterion. Based on this criterion, HTMT values below 0.9 indicate the establishment of discriminant validity (Gold, Malhotra, & Segars, 2001).

- $HTMT_{inference}$: This criterion is computed through the bootstrapping routine to test whether a HTMT Value is significantly different from 1. This criterion has been suggested to assess the discriminant validity among constructs which are conceptually highly similar (Henseler et al., 2015).

In Table 4.18, the results of the assessment of discriminant validity have been presented. Each cell contains the HTMT ratio of the original sample as well as the 95% confidence intervals (two tailed).

Table 4.18
Discriminant Validity

Constructs	Personal	Interpersonal	Cognitive	Change-oriented	Generic	Role-specific
Interpersonal	0.787 (0.705, 0.86)	****				
Cognitive	0.848 (0.792, 0.901)	0.827 (0.764, 0.882)	****			
Change-oriented	0.721 (0.649, 0.786)	0.772 (0.708, 0.832)	0.867 (0.827, 0.903)	****		
Generic	0.7 (0.613, 0.781)	0.776 (0.697, 0.848)	0.779 (0.715, 0.836)	0.859 (0.81, 0.903)	****	
Role-specific	0.624 (0.534, 0.706)	0.66 (0.566, 0.747)	0.771 (0.711, 0.825)	0.811 (0.754, 0.863)	0.866 (0.817, 0.911)	****
Performance	0.573 (0.474, 0.663)	0.765 (0.689, 0.835)	0.752 (0.678, 0.817)	0.812 (0.76, 0.861)	0.862 (0.814, 0.905)	0.834 (0.782, 0.885)

Based on $HTMT_{0.85}$ criterion, 4 out of 20 comparisons violated the criterion. However, the result showed that on the grounds of $HTMT_{0.9}$ criterion, discriminant validity was achieved among all the latent variables. This latter result was confirmed by performing bootstrapping routine for 5000 bootstrap subsamples as well. It is worth noting that all the upper levels of the confidence intervals were well below the threshold value of 1, indicating that the discriminant validity was met for all the constructs on the grounds of $HTMT_{inference}$ criterion.

correlation among the constructs. In Table 4.19, the correlation among the first and second order constructs have been presented.

Table 4.19
Correlation Among the Constructs

Constructs	Change-oriented	Cognitive	Generic	Interpersonal	Performance	Personal	Role-specific
Change-oriented	1						
Cognitive	0.811	1					
Generic	0.784	0.701	1				
Interpersonal	0.687	0.725	0.668	1			
Performance	0.749	0.684	0.768	0.664	1		
Personal	0.619	0.715	0.58	0.634	0.486	1	
Role-specific	0.734	0.69	0.757	0.566	0.737	0.51	1

structural model evaluation. The suggested guidelines by Hair et al. (2014) to evaluate inner or structural model were followed to evaluate the structural model. This procedure encompasses the assessment of collinearity among the constructs, path coefficients assessment, the evaluation of model's predictive accuracy and f^2 effect sizes, and lastly, the evaluation of model's predictive relevance and q^2 effect sizes.

collinearity. Collinearity arises when two indicators in a formative measurement model or two latent variables in a structural model are highly correlated. When more than two indicators or latent variables are involved in this situation, the phenomenon is called multicollinearity. Collinearity can prove problematic from methodological and also interpretational standpoints and as a consequence, the outer weights in the outer model and path coefficients in the inner model cannot be estimated precisely (Garson, 2016; Hair et al., 2014). It is noticeable that eliminating redundant indicators from the measurement models, constructing higher order constructs are a few of the options to treat collinearity problems (Hair et al., 2014).

To detect collinearity among the latent variables, VIF values were assessed. As cited by Hair et al. (2014), VIF values of 5 and higher indicate a potential collinearity problem (Hair, Ringle, & Sarstedt, 2011). The examination of the VIF values in this model showed that all the VIF values were smaller than 5.

path coefficients. The guidelines proposed by Hair et al. (2014) were followed to check for the significance of the path coefficients in the inner model as well as the relevance of these relationships. For this purpose, two rounds of complete bootstrapping routines with 5000 bootstrapped samples were run. In the first run, “No Sign Changes” option was selected. Non-significant relationships were further examined in the second round in which the option of “Individual Changes” had been selected. It is noticeable that performing two rounds of bootstrapping with different configurations has been suggested to check for sign indeterminacy characteristics of PLS-SEM which causes arbitrary sign changes in the bootstrapped estimates of path coefficients, loadings, and weights in comparison with the estimates which are obtained from the original sample.

Through the first run, only one non-significant path from cognitive capability to leadership performance was detected. The repetition of the analysis for the second time confirmed the results of the first run. Thus, cognitive capability was deleted from the model and the final round of complete bootstrapping (with the option “No Sign Changes” enabled) was performed to estimate the final coefficients and their significance. The results have been presented in Table 4.20.

Table 4.20
Path Coefficients

Paths	Original Sample	T Statistics	P Values
Change-oriented -> Performance	0.234	3.775	0.000
Generic -> Performance	0.291	3.928	0.000
Interpersonal -> Performance	0.223	4.152	0.000
Personal -> Performance	-0.109	2.501	0.012
Role-specific -> Performance	0.275	4.77	0.000

The sizes of the path coefficients in PLS-SEM can be interpreted as standardized beta coefficients in Ordinary Least Squares (OLS) regression. In other words, the path coefficients represent the estimated changes in the endogenous latent variable due to a unit of change in the exogenous latent variables. In addition, if one path is larger than another, its effect on the endogenous construct will be greater. (Hair et al., 2014).

Focusing on inner model relationships statistics, it was revealed the effect of generic competency on leadership performance in Malaysian HE was greater than other exogenous latent constructs, followed by role-specific competency, change-oriented capability, interpersonal capability, and personal capability. It is noticeable that personal capability in this analysis was the only exogenous latent variable which negatively contributed to leadership performance as opposed to what had been hypothesized.

Upon deletion of cognitive capability from the model, the structural model was reassessed for collinearity. The results have been presented in Table 4.21, indicating no cause for concern.

Table 4.21
Collinearity Assessment

Exogenous Constructs	VIF
Change-oriented	3.453
Generic	3.441
Interpersonal	2.316
Personal	1.892
Role-specific	2.666

coefficient of determination (R²). Coefficient of determination (R²), which is a measure of model's predictive accuracy and presents the exogenous constructs combined effects on the endogenous construct, is the most commonly used measure to evaluate the structural model. This coefficient also represents the amount of variance in the endogenous construct explained by all the exogenous constructs linked to it. Another important issue is that since the number of exogenous constructs has a considerable impact on the value of R², only Adjusted R² can be used to compare different PLS-SEM results involving models with different numbers of exogenous constructs and/or datasets with different sample sizes. It is worth noting that while the exact interpretation of R² value level is dependent on the particular model and research discipline, in general, R² values of 0.25, 0.50, and 0.75 for endogenous constructs can be described as weak, moderate, and substantial, respectively (Hair et al., 2014). Table 4.22 presents the R² and Adjusted R² values for the endogenous constructs in the model.

Table 4.22
R² Values in the Model

Endogenous Constructs	R²	Adjusted R²
APE	0.892	0.891
BPD	0.851	0.85
Performance	0.696	0.691
RP	0.852	0.851
SES	0.825	0.824
SOC	0.857	0.856
TOB	0.774	0.773
UOR	0.865	0.865

In this analysis and focusing on the structural or inner model, R^2 value for leadership performance in Malaysian HE was 0.696, indicating a relatively substantial model's predictive accuracy. In other words, personal, interpersonal, and change-oriented capabilities as well as generic and role-specific competencies explained 69.6% of the variance in leadership performance in Malaysian HE system. It is noticeable that Adjusted R^2 was 0.691 as well.

effect size (f^2). In PLS-SEM, the changes in R^2 when a specific exogenous latent variable is omitted from the model can be used as a measure to evaluate whether the omitted exogenous construct has a substantive effect on the model's predictive accuracy. This measure is referred to the effect size (f^2) and is computed for all of the exogenous (Hair et al., 2014).

The f^2 values are automatically generated by SmartPLS 3 software based on R^2 values when a specific exogenous construct is in the model and when it is omitted from the model. As cited by Hair et al. (2014), guidelines proposed by Cohen (1988) were followed to evaluate this effect size. On the grounds of these guidelines, the sizes of 0.02, 0.15, and 0.35 are regarded as small, medium, and large effect sizes, respectively. Table 4.23 presents the f^2 values for all the exogenous constructs in the model, indicating the fact that the sizes of the effects of all the exogenous constructs on leadership performance were in the range of small to relatively medium

Table 4.23
 f^2 Effect Sizes on Model's Predictive Accuracy

Exogenous Constructs	f^2
Change-oriented	0.05
Generic	0.08
Interpersonal	0.07
Personal	0.02
Role-specific	0.09

. However, role-specific competency had the maximum effect size, followed by generic competency, interpersonal capability, change-oriented capability, and personal capability.

predictive relevance assessment (Q^2). As debated by Hair et al. (2014), another main step in evaluating the structural model is to examine Stone-Geisser's Q^2 value (Geisser, 1974; Stone, 1974) as a measure of the model's predictive relevance. When PLS-SEM exhibits predictive relevance, it accurately predicts the data points in reflective measurement models of endogenous constructs and endogenous single-item constructs (Garson, 2016). A Q^2 value greater than zero for an endogenous construct that has a reflective measurement model specification or for an endogenous single-item construct is viewed as the predictive relevance for that particular construct (Hair et al., 2014). Q^2 values are obtained by using an iterative process known as blindfolding procedure for a certain omission distance. In other words, it is a reuse technique that omits every d^{th} data point in the endogenous construct's indicators and estimates the parameters with the remaining data points (Tenenhaus, Vinzi, Chatelin, & Lauro, 2005). The omitted data points are considered as missing values and the resulting estimates are then used to predict them (Hair et al., 2014). The difference between the true (omitted) data points and the predicted ones are used to compute Q^2 measure. Although there are two approaches to calculate Q^2 measure namely cross-validated redundancy approach and cross-validated communality approach, in this analysis and as suggested by Hair et al. (2014), cross-validated redundancy approach was selected since it perfectly fits the PLS-SEM approach. It is noticeable that the omission distance must be chosen in a way that the number of observations used in the model estimation divided by this value is not an integer. Thus, since the number of observations in this analysis was 346, the default value of 7 was chosen as the omission

distance. The results have been displayed in Table 4.24, indicating that the model has predictive relevance for these constructs since Q^2 values are greater than zero.

Table 4.24
Q² Values in the Model

Endogenous Constructs	Q²
APE	0.571
BPD	0.526
Performance	0.359
RP	0.468
SES	0.492
SOC	0.531
TOB	0.509
UOR	0.552

effect size (q²). The Q^2 values which are estimated through the blindfolding procedure are regarded as the measures of how well the path model can predict the originally observed variables (Hair et al., 2014). Analogous to f^2 effect size, the relative impact of exogenous constructs on predictive relevance can be computed by means of q^2 measure.

Unlike f^2 effect sizes, q^2 measures for the exogenous constructs are not automatically calculated by SmartPLS 3 software. Thus, to determine the q^2 effect sizes, Q^2 values were estimated for two times with the default settings (omission distance = 7). In the first round, the specific exogenous construct was included in the model and in the second round, it was excluded from the model. Consequently, q^2 values were computed manually on the grounds of the guiding principles proposed by (Hair et al., 2014). The results of these procedures have been summarized in Table 4.25.

Table 4.25
q² Effect Sizes on Model's Predictive Relevance

Exogenous Constructs	q²
Personal	0.005
Interpersonal	0.017
Change-oriented	0.012
Generic	0.019
Role-specific	0.022

As discussed by Hair et al. (2014), the guidelines suggested by Cohen (1988) were followed to determine the size of the effects of the exogenous constructs. Based on these guidelines, values of 0.02, 0.15, and 0.35 represent small, medium, and large effects, respectively. In this analysis, although all the sizes are small, the size of the effect of role-specific competency on model's predictive relevance was greater, comparing with other exogenous latent variables.

detecting unobserved heterogeneity. The result of measurement models and structural model evaluations for the aggregate data, prior to running Finite Mixture Partial Least Square (FIMIX-PLS) as a method to detect unobserved heterogeneity, has been presented in Figure 4.2.

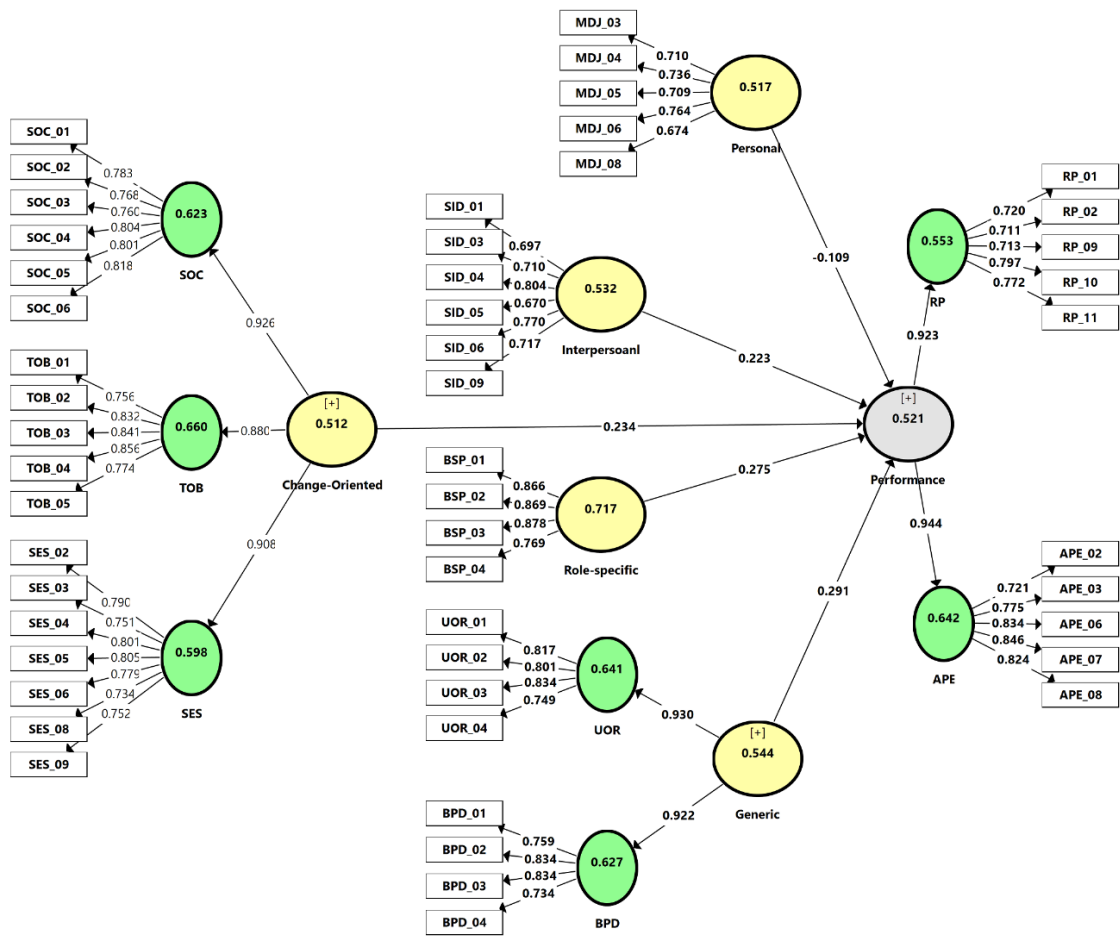


Figure 4.2. The Path Model Before Performing FIMIX-PLS

However, as suggested by Hair et al. (2014), FIMIX-PLS analysis was considered to detect unobserved heterogeneity within the data.

Unobserved heterogeneity, as a threat to the validity of PLS-SEM results (Hair et al., 2014), refers to the situation in which there are one or more variables which have not been included in the model, but do account for the differences among estimated path coefficients for different subpopulations. If these variables are important, the model will be dissimilar across different groups and in other words, the computed path coefficients will reflect bad averages across the distinct groups. As a consequence, this will lead to increase of Type I and Type II errors (Garson, 2016).

Regardless of the method used to handle the issue of unobserved heterogeneity, it can be determined that the threat of unobserved heterogeneity to the validity of the model will be low under two conditions (Becker, Rai, Ringle, & Völckner, 2013):

- The average variance explained in PLS path models for the multi-segment solution is considerably lower than the overall sample.
- The model-selection criteria in FIMIX-PLS segmentation method collectively indicate a one-segment solution as showing the best fit and the large deterioration in fit for the best multi-segment solution.

From a statistical point of view, FIMIX-PLS is meant to segment observations into groups which may be subject to different analyses, policies, etc., based on the context. Therefore, it is viewed as an alternative to cluster analysis as another approach in identifying groups in the face of unobserved heterogeneity. Under FIMIX-PLS, the number of groups are specified in advance. In fact, through performing FIMIX-PLS, the data are optimally partitioned into given number of groups and the path coefficients are estimated for each group or segment. Cases are assigned to the groups in a manner which optimizes the likelihood function and maximizes segment-specific explained variances. Multivariate normality of the data in the endogenous latent variables of the model is the statistical assumption of FIMIX-PLS. This means that, unlike traditional PLS, FIMIX-PLS is considered as a parametric approach. Another important aspect of FIMIX-PLS is that since it is a data-driven strategy, it must be assured that the best-solution groups have theoretical grounds (Garson, 2016).

It is worth noting that since sometimes FIMIX-PLS, similar to any other data-driven strategies, reflects noise in the data rather than the true underlying segments,

performing a cross-validation analysis using a hold-out validation sample (Becker et al., 2013) has been suggested.

In this analysis, FIMIX-PLS module in SmartPLS 3 was conducted to detect unobserved heterogeneity. Following the guidelines proposed by Hair, Sarstedt, Matthews, and Ringle (2016) in terms of configuring this software to run FIMIX-PLS, the stop criterion was set at 1.0E-10 to make certain that the algorithm converges at reasonably low levels of iterative changes in the log-likelihood values. In addition, the value of 5000 iterations was specified as the maximum number of iterations to ensure a sound balance between warranting acceptable computational running time and getting precise-enough results. Also, the number of repetitions was set at 10 to investigate the possible occurrence of a local optimum.

The final issue in terms of running FIMIX-PLS is about determining the alternating number of segments. As proposed by Hair et al. (2016), the range of possible segment numbers depends on the interplay between the sample size and the minimum sample size requirements to reliably estimate the given model. Hence the guidelines proposed by Hair et al. (2014) were followed to determine the minimum sample size. On the grounds of this principle, since the number of arrows pointing to leadership performance in the model was 5, the minimum sample size was computed to be 50. Hence, given the fact that the sample size in this analysis was 346, the maximum of 6 segments were determined for running the analysis. However, as notified by Hair et al. (2016), since it was highly unlikely that the cases were evenly distributed across these 6 segments, the maximum number of 5 segments was considered as a preferable number of the segments since this number of segments could also support group-specific PLS path analyses. It is noteworthy that in terms of

determining the true number of segments as one of the main purposes of FIMIX-PLS and according to Hair et al. (2016), whenever the Modified Akaike Information Criterion with 3 Factors (AIC₃) and Consistent Akaike Information Criterion (CAIC) indicate the same number of segments, this result meets the correct number of segments. In addition, a joint consideration of AIC₃ and Bayesian Information Criteria (BIC) appears promising in terms of determining the number of segments to be retained. Moreover, a segment number as indicated by Modified Akaike Information Criterion with 4 Factors (AIC₄) and BIC can be considered as the third alternative. It is noticeable that choosing fewer segments than indicated by Akaike Information Criterion (AIC) and more segments than indicated by Minimum Description Length with 5 Factors (MDL5) has been suggested as well. The other important criterion is Entropy Criterion (EN) which should be greater than 0.5 for a valid segment solution. Lastly, after selecting a segment solution, not only it must be ensured that the segment sizes in the final solution meet the requirements of the analysis in terms of minimum sample size, but also the segments must be theoretically underpinned and managerially relevant. In Table 4.26, the results of FIMIX-PLS have been displayed.

Table 4.26
Fit Indices and Relative Segment Sizes for FIMIX-PLS Solutions

Criteria	1 Segment (N= 346)	2 Segment (N1= 252, N2= 94)	3 Segment Solution (N1= 230, N2= 71, N3=45)	4 Segments (N1= 158, N2= 100, N3=63, N4= 25)	5 Segments (N1= 102, N2= 96, N3=52, N4= 49, N5= 47)
AIC	2,914.091	2,494.393	2,158.432	-2,050.73	-4,185.42
AIC3	2,934.091	2,535.393	2,220.432	-1,967.73	-4,081.42
AIC4	2,954.091	2,576.393	2,282.432	-1,884.73	-3,977.42
BIC	2,991.020	2,652.097	2,396.911	-1,731.48	-3,785.39
CAIC	3,011.020	2,693.097	2,458.911	-1,648.48	-3,681.39
MDL5	3,458.735	3,610.913	3,846.828	209.541	-1,353.27
LnL	-1,437.045	-1,206.196	-1,017.216	1,108.37	2,196.71
EN	N/A	0.871	0.936	0.803	0.818

In this analysis, the sample size was 346 and the minimum sample size, as computed earlier, was 50. Hence, selecting the 3-segments, 4-segments and 5-segments solutions were not reasonable since the size of at least one segment in any of these three solutions was less than the required minimum sample size of 50, indicating a cause for concern for a precise segment-specific PLS-SEM analysis. In addition, the quality criteria including AIC, AIC3, AIC4, BIC, MDL5, and CAIC jointly indicated a 2-segments solution, since these values, comparing with the same values in the 1-segment solution, were minimum, implying less data loss in the model. This result was confirmed since EN value (0.871) clearly exhibited a clear-cut classification of data into 2 segments.

ex post analysis. For the explanation of the latent segment structure, guidelines suggested by Hair et al. (2016) and the step by step instructions illustrated by Matthews, Sarstedt, Hair, and Ringle (2016) were followed. For this purpose, first, each observation was assigned to a single segment of the 2-segments solution using the maximum segment membership probabilities. Next, the collected data were partitioned using 13 demographic variables namely gender, age group, marital status, academic qualification, main disciplinary background, university type, leadership level, current role, current tenure, immediate previous role, immediate previous tenure, new role application intention, and previous experience outside HE. Finally, the overlap between the FIMIX-PLS partitions and the partitions produced by exploratory variable(s) was examined. It is noticeable that a 60 percent of the overlap has been proposed as a satisfactory level of overlap.

In this study the level of the overlap between the FIMIX-PLS partitions and the partitions produced by current tenure as one of the categorical variables with five classes was well above 60 percent (66.47%), as shown in Table 4.27.

Table 4.27
FIMIX-PLS Groups

Groups based on Current Tenure	FIMIX- PLS Groups		Total
	1	2	
Less than 1 year	35	17	52
1-3 years	124	41	165
4-6 years	53	18	71
7-10 years	18	12	30
More than 10 years	22	6	28
Total	252	94	346

Based on this information, group 1 was considered as the leaders with less than 6 years of tenure in their current roles or low-current-tenure leaders and group 2 was regarded as high-current-tenure leaders who were leaders with a current tenure of more than 6 years.

segment-specific models estimation. As the final step of model evaluation, all the undertaken procedures for evaluating the path model developed based on the aggregate data were replicated for the models of low-current-tenure leaders and high-current-tenure leaders. In other words, the guidelines for evaluation of outer and inner models proposed by Hair et al. (2014) were followed and the developed models on the grounds of FIMIX-PLS were estimated. The results, indicating the fulfillment of all the statistical requirements of the analysis, have been provided in a few tables in the appendices section. Also, the final models have been displayed in the Figures 4.3 and 4.4.

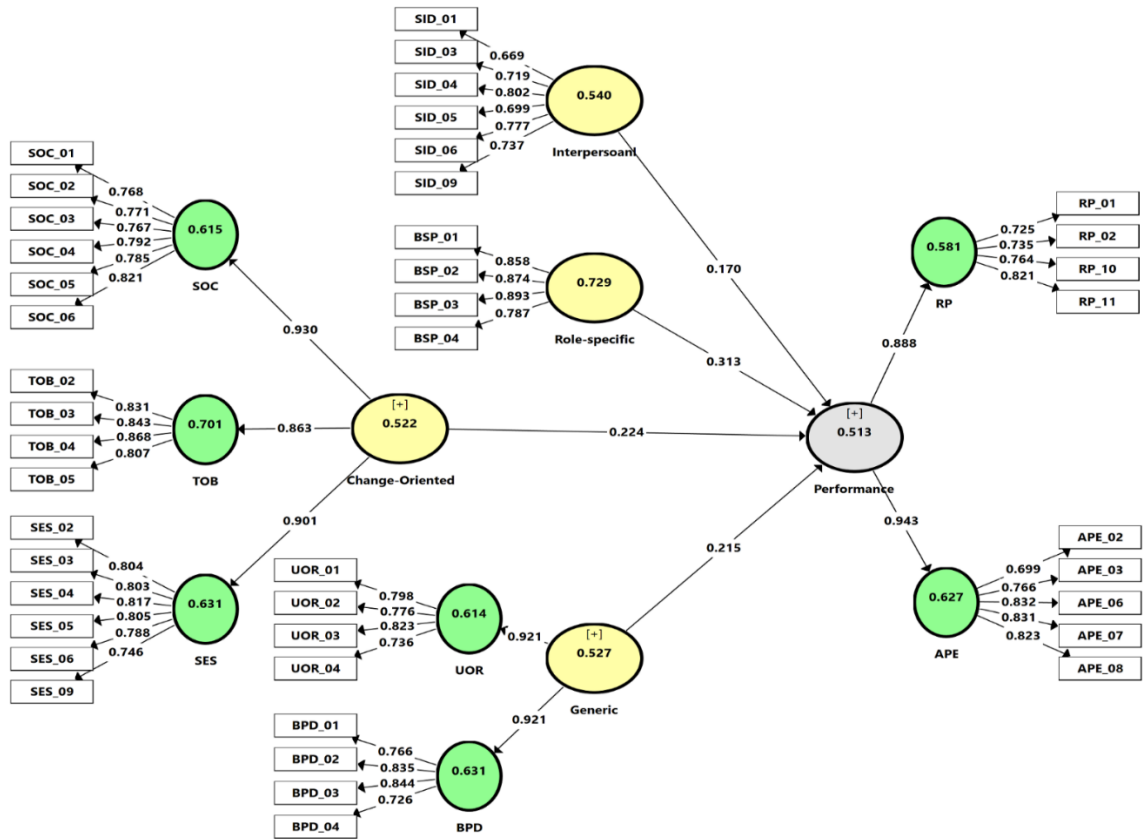


Figure 4.3. The Low-Current-Tenure Leaders Model

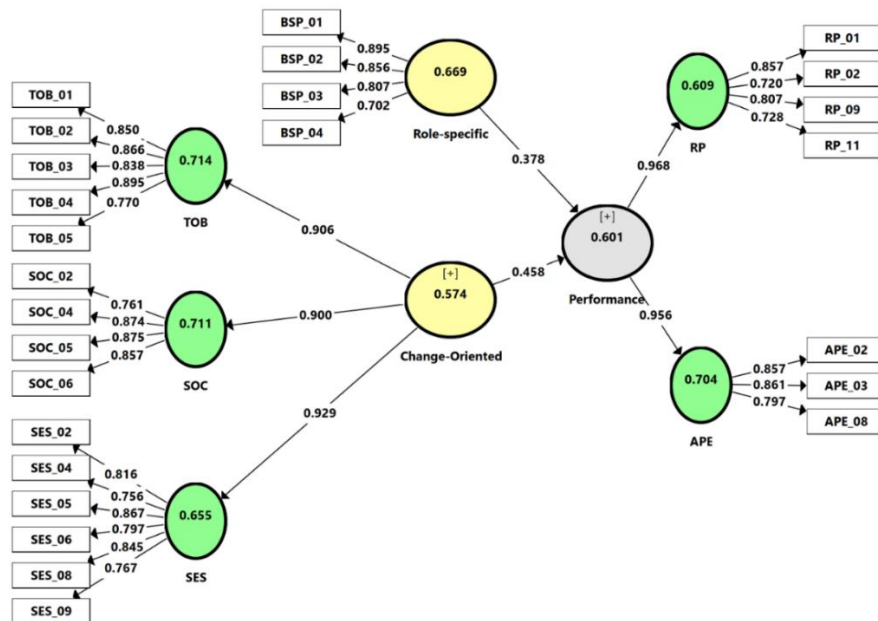


Figure 4.4. The High-Current-Tenure Leaders Model

Even though all of the constructs building Academic Leadership Capability Framework (Fullan & Scott, 2009; Scott et al., 2008; Scott & McKellar, 2012; Scott et al., 2012) were underpinned and supported by a few leadership theories explained in chapter one, as illustrated in low-current-tenure leaders model ($R^2= 65.8\%$), the evidence in Malaysian HE context did not provide support for the contribution of personal and cognitive capabilities to leadership performance. In addition, personal, interpersonal, and cognitive capabilities as well as generic competency were not supported, as the significant determinants of leadership performance, based on high-current-tenure leaders model ($R^2= 61.4\%$).

It is noticeable that change-oriented capability in both models of low-current-tenure leaders and high-current-tenure leaders was a significant determinant of leadership performance, indicating the tendency towards transformation in Malaysian HE. This was in line with the theories underpinning the contribution of change-oriented behaviors to leadership performance (Arvonen, 2008; Ekvall, 1991; Ekvall & Arvonen, 1991; Yukl, 1999, 2004, 2012; Yukl et al., 2002) in the context of Malaysian HE. In addition, while leaders in the group of low-current-tenure benefitted from both types of managerial competencies, the results implied that leaders with higher tenure focused on their role-specific competency to enhance their leadership performance.

Importance-Performance Map Analysis (IPMA). As cited by Hair et al. (2014), the results and findings of the basic PLS-SEM can be extended by the extraction of latent variable scores using IPMA (Völckner, Sattler, Hennig-Thurau, & Ringle, 2010).

For a specific endogenous latent variable representing a key target construct in the model, IPMA contrasts the unstandardized total effects (importance) of other

constructs in explaining the key target construct with their average latent variable scores (performance) to highlight the significant areas to be improved by management activities. In fact, on the basis of the output of IPMA, the latent variables with high importance and low performance are viewed as the major areas of improvement (Hair et al., 2014).

Therefore, IPMA was employed to evaluate the performance of the exogenous constructs of the model. The analysis was carried out for the three models as the outcomes of FIMIX-PLS. For this reason, leadership performance was considered as the target construct and the values 1 and 5 were set as the minimum and maximum values for all the manifest variables prior to running IPMA. It is noteworthy that the analysis was performed using the default settings of IPMA module in SmartPLS 3.

The results of IPMA analysis have been summarized in Tables 4.28 and 4.29 as well as Figures 4.5 and 4.6. In fact, while in the model of low-current-tenure leaders, role-specific competency had the maximum relative importance, change-oriented capability had the maximum relative importance in explaining the key target construct in the model of high-current-tenure leaders. It was also revealed that in the model of low-current-tenure leaders, interpersonal capability had the minimum relative importance to explain the key target construct in the context of Malaysian HE.

Table 4.28
IPMA for the Low-Current-Tenure Leaders Model

Construct	Importance	Performance	Index value
Change-oriented	0.209	80.527	4.221
Generic	0.213	83.832	4.353
Interpersonal	0.187	87.219	4.489
Role-specific	0.26	84.26	4.37

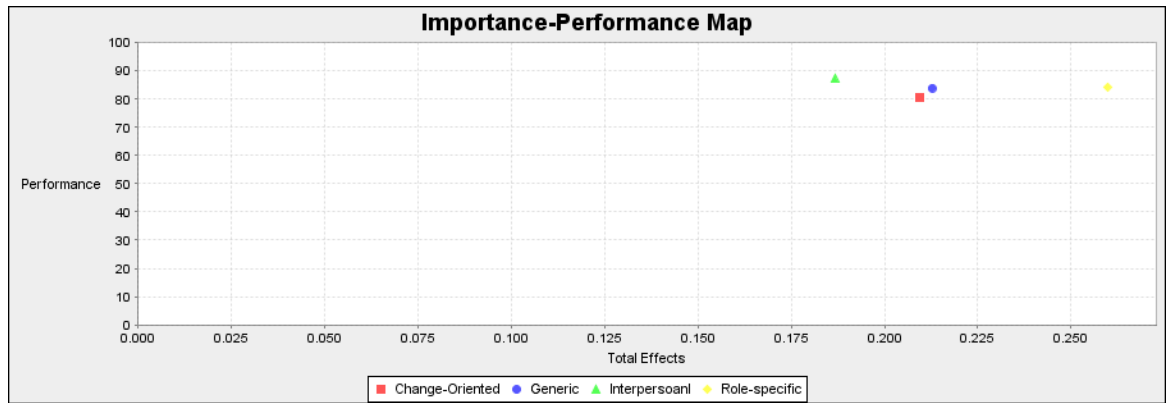


Figure 4.5. IPMA for the Low-Current-Tenure Leaders Model

Table 4.29
IPMA for the High-Current-Tenure Leaders Model

Construct	Importance	Performance	Index value
Change-oriented	0.475	79.382	4.175
Role-specific	0.363	81.977	4.279

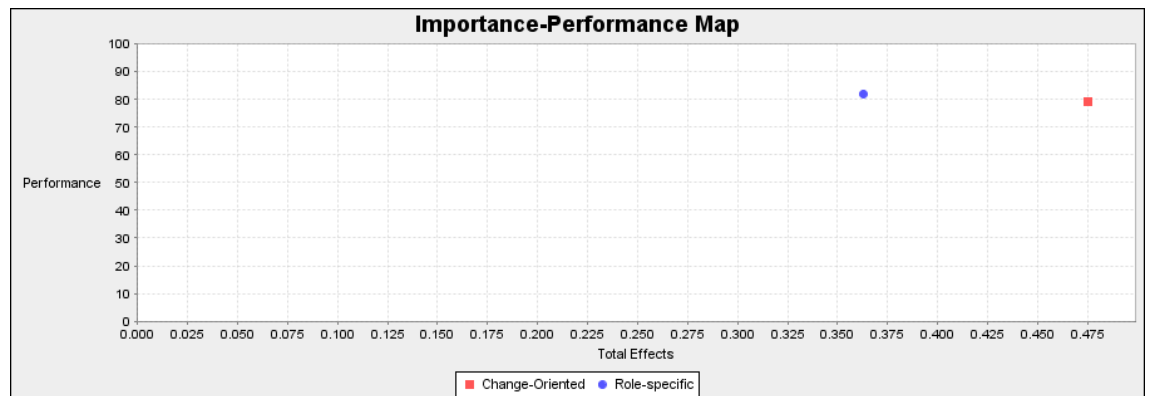


Figure 4.6. IPMA for the High-Current-Tenure Leaders Model

It is noteworthy that in low-current-tenure leaders model, an increase of 1 point in the performances of change-oriented capability, generic competency, interpersonal capability, and role-specific competency led to the increase of the performance of

leadership performance by the size of 0.209, 0.213, 0.187, and 0.260, respectively. Focusing on high-current-tenure leaders model, it was revealed that 1point increase in the performances of change-oriented capability and role-specific competency leads to the performance increase of the key target construct by the size of 0.475 and 0.363, correspondingly.

summary. This analysis aimed to investigate the extent to which different types of capabilities and competencies explain leadership performance in the context of Malaysian HE. To collect data, the scales developed through the pilot study phase were employed. In addition, due to the nature of the problem and given the statistical requirements for performing a sound and precise analysis, PLS-SEM was considered as the main approach to analyze the data. For this aim, SmartPLS 3 software package was employed. The analysis of the data at aggregate level indicated that cognitive capability was not a significant predictor of leadership performance in the context of Malaysian HE. Additionally, it revealed that personal capability was the only construct which contributed to leadership performance adversely. Moreover, the analysis did show that the coefficient of the path from generic competency towards leadership performance was greater than other path coefficients in the structural model, implying the greater effect of this exogenous construct on leadership performance. Thereafter, the model was examined for identifying and treating unobserved heterogeneity using FIMIX-PLS (Hair et al., 2014; Hair et al., 2016). The output of this analysis shed light on the fact that the overlap between current tenure, as one of the categorical variables with five classes, and the FIMIX-PLS partitions was 66.47%. Since segmenting the data on the grounds of current tenure was managerially relevant, current tenure was considered for analysis. Hence, the classes under current tenure were merged to form a new current tenure variable with two classes, namely low-current-tenure leaders and

high-current-tenure leaders, corresponding to the two segments produced by FIMIX-PLS. Next, PLS-SEM algorithm was run for low-current-tenure leaders model and high-current-tenure leaders model to evaluate the outer and inner models in each of these path models.

The output of PLS-SEM showed that in low-current-tenure leaders model, change-oriented and interpersonal capabilities as well as generic and role-specific competencies were significant determinants of leadership performance in the context of Malaysian HE. Focusing on high-current-tenure leaders model, the output showed that only the paths from change-oriented capability and role-specific competency to leadership performance were significant.

Finally, IPMA was run to extend the findings of PLS-SEM for the low-current-tenure leaders model and high-current-tenure leaders model to identify the major areas of improvement to be addressed by management activities. The output showed that role-specific competency and change-oriented capability were the major areas of improvement to be addressed by managerial activities in the models of low-current-tenure leaders and high-current-tenure leaders, respectively.

research question 2-ii.

initial data screening procedure. The guidelines provided by Field (2013) were followed to screen the data prior to undertaking the main analysis. As the first step, a few scatterplots were built to detect and eliminate obvious unusual cases. Thereafter, due to similarities between regression analysis and PLS-SEM, a regression analysis was run using SPSS 23 to detect outliers and cases with undue influence and the selected outputs were examined. Through this procedure standardized residuals (Field, 2013), Cook's distances (Cook & Weisberg, 1982), Mahalanobis distances

(Barnett & Lewis, 1994; Stevens, 2009), standardized DFBeta and DFFit values (Field, 2013), and the Leverage values (Field, 2013; Stevens, 2009) were examined. This procedure was followed by re-investigating the existence of outliers in the dataset on the grounds of standardized factor scores (Garson, 2016) using SmartPLS 3. These screening procedures resulted to identify and eliminate 15 problematic cases from the dataset. Therefore, PLS algorithm was run for the data collected from 181 respondents in the context of Malaysian public research & comprehensive HEIs.

reflective measurement model evaluation.

indicator reliability. The outer loadings of all of the items in different constructs were evaluated and following the guidelines provided by Hair et al. (2014), the non-contributing items were deleted from their respective constructs. This procedure led to removal of 25 items.

Cronbach's alpha, composite reliability, and convergent validity. In Table 4.30, Cronbach's Alpha, composite reliability, and AVE have been presented for all the first and second order constructs in the model. All the reliability values were above 0.7 and there was no AVE value smaller than 0.5. This indicated no cause for concern in terms of establishing reliability and convergent validity of the first and second order measurement models.

Table 4.30
Alpha, Composite Reliability, and AVE

Constructs	Cronbach's Alpha	Composite Reliability	AVE
APA	0.874	0.905	0.616
APE	0.856	0.893	0.584
BPD	0.782	0.86	0.607
Change-oriented	0.944	0.95	0.516
Cognitive	0.916	0.928	0.521
Generic	0.880	0.905	0.544
HCOF	0.829	0.898	0.746
Interpersonal	0.822	0.871	0.532
Performance	0.894	0.913	0.513

Table 4.30 continued			
Personal	0.780	0.851	0.534
RP	0.758	0.847	0.580
Role-specific	0.868	0.919	0.791
SAT	0.839	0.882	0.556
SES	0.892	0.915	0.606
SOC	0.85	0.899	0.691
TOB	0.849	0.898	0.689
UOR	0.833	0.889	0.666

discriminant validity. To assess discriminant validity, HTMT criterion was applied. Table 4.31 displays HTMT values as well as 95% confidence intervals (two tailed) for these statistics. It is noticeable that these confidence intervals were generated using the bootstrapping routine with 5000 subsamples.

Table 4.31
Discriminant Validity

Constructs	Personal	Interpersonal	Cognitive	Change-oriented	Generic	Role-specific
Interpersonal	0.683 (0.558, 0.804)	****				
Cognitive	0.793 (0.696, 0.878)	0.833 (0.754, 0.9)	****			
Change-oriented	0.729 (0.627, 0.82)	0.756 (0.655, 0.841)	0.886 (0.836, 0.928)	****		
Generic	0.632 (0.494, 0.76)	0.741 (0.634, 0.836)	0.761 (0.659, 0.851)	0.837 (0.757, 0.906)	****	
Role-specific	0.548 (0.425, 0.667)	0.697 (0.577, 0.8)	0.762 (0.675, 0.84)	0.79 (0.711, 0.861)	0.892 (0.829, 0.947)	****
Performance	0.586 (0.457, 0.7)	0.811 (0.72, 0.891)	0.827 (0.744, 0.896)	0.857 (0.788, 0.914)	0.9 (0.846, 0.948)	0.883 (0.824, 0.936)

Based on this information and on the grounds of HTMT_{0.85} criterion, only 5 violations were detected. However, none of the HTMT values were greater than 0.9 which indicated the establishment of discriminant validity based on HTMT_{0.9} criterion. Additionally, the upper levels of the confidence intervals for all the HTMT values were less than 1, implying that discriminant validity was established based on HTMT_{inference} criterion as well.

correlation among the constructs. Table 4.32 shows the correlation coefficients among the first and second order constructs in this analysis. Based on this information, the exogenous constructs had quite considerable correlations with leadership performance as the endogenous construct.

Table 4.32
Correlation Among the Constructs

Constructs	Change-oriented	Cognitive	Generic	Interpersonal	Performance	Personal	Role-specific
Change-oriented	1						
Cognitive	0.826	1					
Generic	0.764	0.684	1				
Interpersonal	0.666	0.725	0.632	1			
Performance	0.788	0.749	0.801	0.699	1		
Personal	0.627	0.672	0.523	0.549	0.492	1	
Role-specific	0.717	0.68	0.783	0.592	0.779	0.451	1

structural model evaluation.

collinearity. Through examining VIF values of the exogenous constructs in the model, no value greater than 5 was detected. This did imply that collinearity could not be a problem for the initial model under study. Hence, the model was considered for evaluation of the significance of the path coefficients.

path coefficients. To evaluate the significance of the path coefficients in the inner model and as suggested by Hair et al. (2014), two rounds of complete bootstrapping routines with Bias-Corrected and Accelerated (BCa) confidence intervals were performed. In the first run, “No Sign Changes” option and in the second run, “Individual Changes” were selected. In the first run of bootstrapping routine, the path from cognitive capability to leadership performance was identified as the only non-significant path. For the second run, the option of “Individual Changes” was selected and through this analysis, the previous finding was confirmed. Hence,

cognitive capability was eliminated from the model and all the parameters were re-estimated using a complete bootstrapping routine with BCa confidence intervals (with “No Sign Changes” option selected). The results, indicated that removing cognitive capability had caused a non-significant path from personal capability to leadership performance.

As a result and following the guidelines proposed by Hair et al. (2014), “Individual Changes” option was selected and another bootstrapping routine was performed to re-assess the non-significant path. The results of this procedure, confirmed that the path from personal capability to leadership performance was not significant.

Consequently, personal capability was eliminated from the model. Once more, “No Sign Changes” option was selected and bootstrapping routine with 5000 subsamples was performed to re-evaluate the path coefficients. The results have been displayed in Table 4.33.

Table 4.33
Path Coefficients

Paths	Original Sample	T Statistics	P Values
Change-oriented -> Performance	0.262	3.309	0.001
Generic -> Performance	0.268	3.455	0.001
Interpersonal -> Performance	0.199	3.369	0.001
Role-specific -> Performance	0.264	4.502	0.000

Based on this information and focusing on the inner model, the effect of generic competency on the endogenous latent variable was greater than other exogenous constructs, followed by role-specific competency, change-oriented capability, and interpersonal capability.

It is noteworthy that upon completion of this evaluation, multicollinearity among the exogenous constructs was reassessed. The output of this analysis, shown in Table 4.34, shed light on the fact that collinearity was not a matter of concern in this analysis.

Table 4.34
Collinearity Assessment

Exogenous Constructs	VIF
Change-oriented	2.949
Generic	3.401
Interpersonal	1.943
Role-specific	2.859

coefficient of determination (R²). The values of R² and Adjusted R² for all the endogenous constructs in the model have been displayed in Table 4.35.

Table 4.35
R² Values in the Model

Endogenous Constructs	R²	Adjusted R²
APE	0.924	0.923
BPD	0.837	0.836
HCOF	0.684	0.682
Performance	0.766	0.760
RP	0.819	0.818
SES	0.83	0.829
SOC	0.829	0.829
TOB	0.705	0.704
UOR	0.873	0.873

Focusing on the inner model, the results of the analysis showed that 76.6% of the variance in leadership performance was explained by the exogenous constructs in the model. This indicated that the predictive accuracy of the model in the context of Malaysian public research & comprehensive HEIs was above the substantial level. It is notable that the Adjusted R² value in this analysis was 0.760.

effect size (f^2). Table 4.36 displays the f^2 values as the measures for assessing exogenous constructs' contributions to the endogenous construct's R^2 value (predictive accuracy).

Table 4.36
 f^2 Effect Sizes on Model's Predictive Accuracy

Exogenous Constructs	f^2
Change-oriented	0.01
Generic	0.09
Interpersonal	0.09
Role-specific	0.10

Although all the sizes were in the range of small to relatively medium, the effect of role-specific competency on the predictive accuracy of the model, comparing with other exogenous constructs, was maximum.

predictive relevance assessment (Q^2). Blindfolding procedure was performed to obtain Q^2 values as a measure of model's predictive relevance for data points of the indicators in reflective measurement models of the endogenous constructs. Since the number of observation (sample size) was 188, the default value of omission distance was selected. The results have been presented in Table 4.37, implying the model's predictive relevance since all the Q^2 values were greater than zero.

Table 4.37
 Q^2 Values in the Model

Endogenous Constructs	Q^2
APE	0.534
BPD	0.501
HCOF	0.509
Performance	0.384
RP	0.469
SES	0.499
SOC	0.571
TOB	0.481
UOR	0.577

effect size (q^2). To assess the q^2 effect sizes, Q^2 values were estimated for two times with the default settings (omission distance = 7). In the first round, the specific exogenous construct was included in the model and in the second round, it was excluded from the model. Consequently, q^2 values were computed manually as presented in Table 4.38. Despite the fact that all the effect sizes were small (Cohen, 1988), the size of the effect of role-specific competency on model's predictive relevance, comparing with other exogenous constructs, was greater.

Table 4.38
 q^2 Effect Sizes on Model's Predictive Relevance

Exogenous Constructs	q^2
Interpersonal	0.016
Change-oriented	0.018
Generic	0.016
Role-specific	0.019

detecting unobserved heterogeneity. The result of measurement models and structural model evaluations for the aggregate data has been displayed in Figure 4.7.

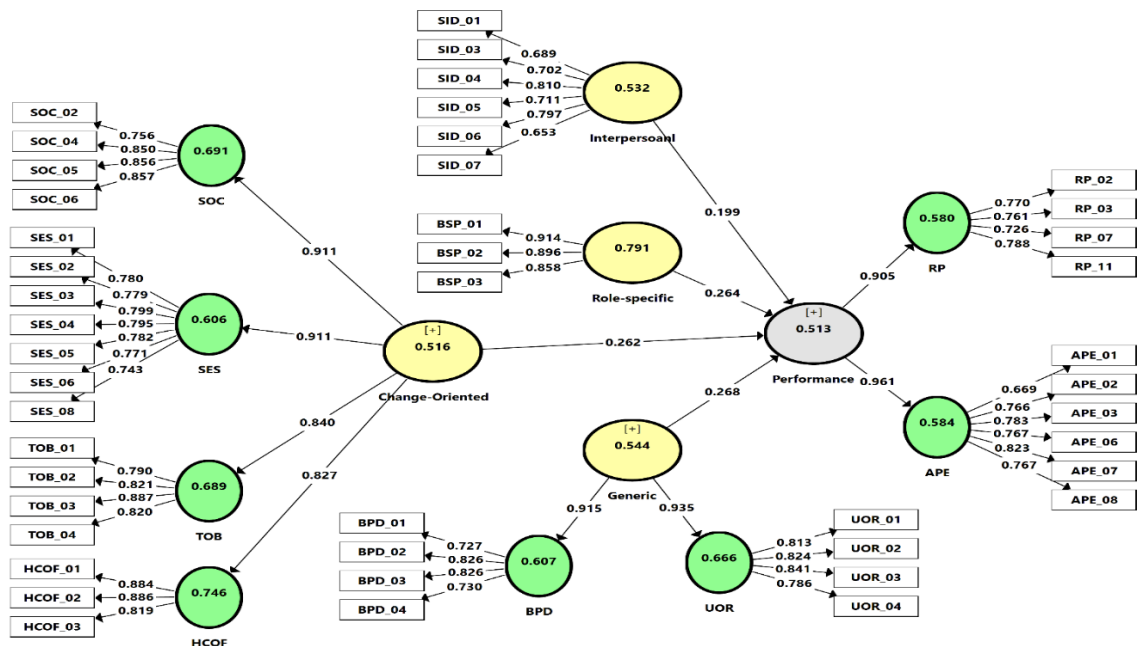


Figure 4.7. The Path Model Before Performing FIMIX-PLS

For detecting unobserved heterogeneity within the data, FIMIX-PLS module in SmartPLS 3 software package was run. For this purpose, the number of repetitions was set at 10, the value of stop criterion was set at 1.0E-10, the maximum iterations value was set at 5000, and the analysis was performed 4 times for evaluating the results of 1-segment to 4-segments solutions. It may be noted that the sample size and the required minimum samples size were 181 and 40, respectively, denoting that performing the analysis for a 5-segments solution was not reasonable. The results of the analysis have been presented in Table 4.39.

Table 4.39
Fit Indices and Relative Segment Sizes for FIMIX-PLS Solutions

Criteria	1 Segment (N= 181)	2 Segments (N1= 128, N2= 53)	3 Segments (N1= 117, N2= 34, N3= 30)	4 Segments (N1= 54, N2= 52, N3= 45, N4= 30)
AIC	1,854.878	1,660.255	-2,215.738	-2,236.118
AIC3	1,875.878	1,703.255	-2,150.738	-2,149.118
AIC4	1,896.878	1,746.255	-2,085.738	-2,062.118
BIC	1,922.046	1,797.791	-2,007.836	-1,957.849
CAIC	1,943.046	1,840.791	-1,942.836	-1,870.849
MDL5	2,358.720	2,691.932	-656.226	-148.772
LnL	-906.439	-787.128	1,172.869	1,205.059
EN	N/A	0.848	0.930	0.814

These findings showed that selecting a 3-segments or a 4-segments solution was not sensible due to very small sample size in at least one segment in these solutions. The evaluation of other quality criteria explicitly denoted unobserved heterogeneity within the data. In other words, the results indicated a 2-segments solution since AIC3, AIC4, BIC, and CAIC values in this solution were minimum and EN was greater 0.5.

ex post analysis. Following the guidelines of conducting Ex post analysis (Hair et al., 2016; Matthews et al., 2016) and as displayed in Table 4.40, the data categorized

by leadership level had an overlap of 66 percent with the data partitioned using FIMIX-PLS module of SmartPLS 3.

Table 4.40
FIMIX-PLS Groups

Groups based on Leadership Level	FIMIX-PLS Groups		Total
	Group 1	Group2	
University-Faculty Level	39	31	70
Department-Individual Professorial Level	89	22	111
Total	128	53	181

This results suggested the use of leadership level as the exploratory variable in the further segment-specific PLS-SEM analysis. It is noticeable that university level and faculty level corresponded to FIMIX-PLS group 1 and department level and individual professorial level corresponded to FIMIX-PLS group 2.

segment-specific models estimation. The two emerged models on the grounds of FIMIX-PLS namely university-faculty level leaders model and department-individual professorial level leaders model were reassessed on the grounds of the proposed guiding principles related to treating unobserved heterogeneity (Hair et al., 2014; Hair et al., 2016; Matthews et al., 2016). It is noticeable that all the statistical requirements of the analysis were met and the detailed information regarding the relevant statistics such as Cronbach's Alpha, composite reliability, convergent validity, discriminant validity, path coefficients, collinearity, model's predictive accuracy and relevance as well as effect sizes for both models have been provided in the appendices section. In addition, the final models have been illustrated in Figures 4.8 and 4.9.

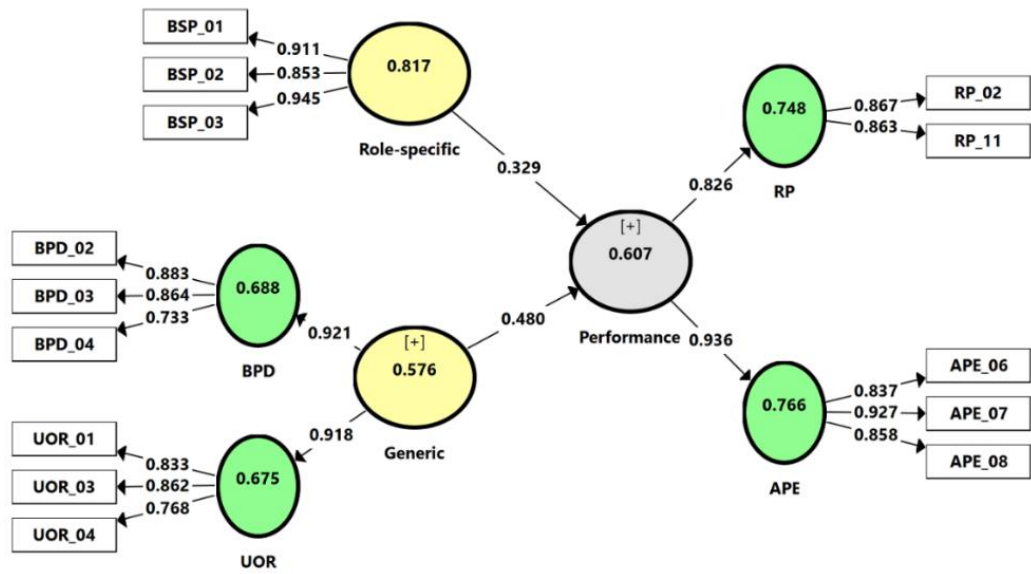


Figure 4.8. The University-Faculty Level Leaders Model

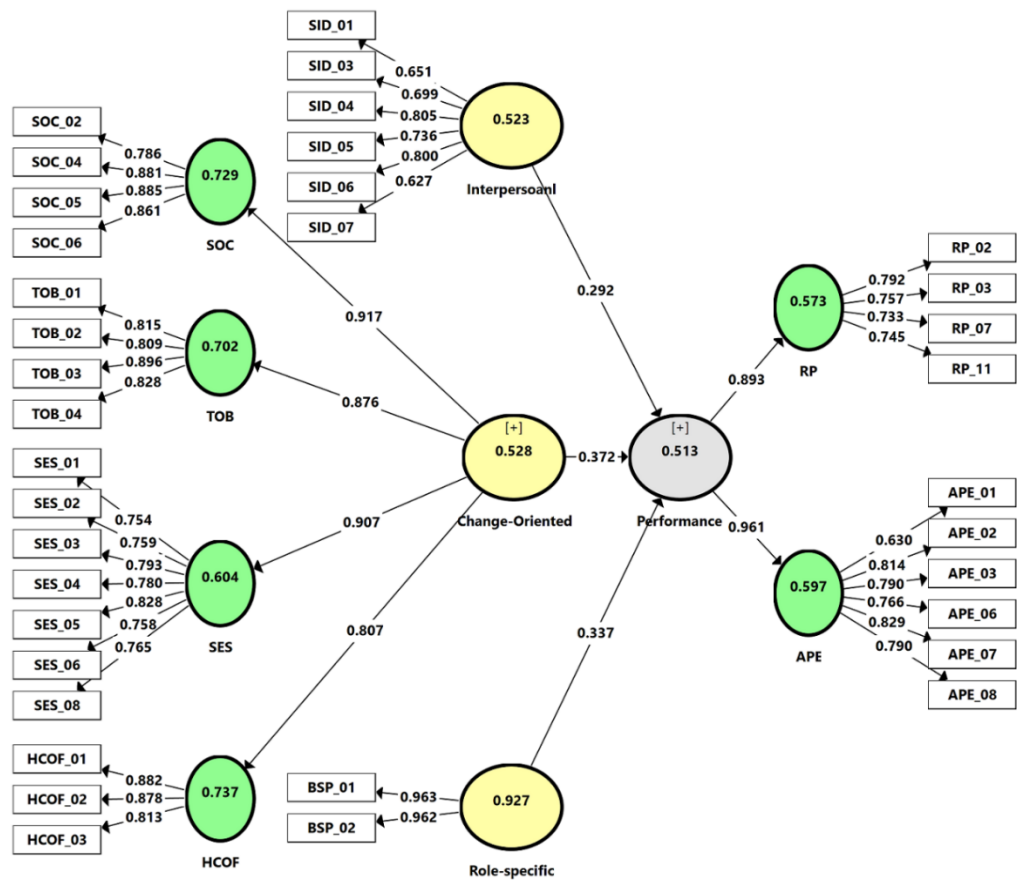


Figure 4.9. The Department-Individual Professorial Level Leaders Model

As illustrated in university-faculty level leaders model ($R^2= 56.9\%$), the evidence in Malaysian public research & comprehensive HE context did not support the contribution of personal, interpersonal, and cognitive capabilities to leadership performance.

In addition, personal capability, cognitive capability, and generic competency were not supported, as the significant determinants of leadership performance, based on department-individual professorial level leaders model ($R^2= 75.4\%$).

The results also indicated that leaders at university-faculty level were more management-oriented since in the developed university-faculty level leaders model, only the managerial competencies were identified as the main significant constructs to explain leadership performance. Focusing on department-individual professorial level leaders model, the results did disclose that two types of leadership capabilities and one type of managerial competencies were effective constructs in determining leadership performance, suggesting that leaders in this category had a stronger tendency towards exercising leadership capabilities. Given Malaysian HE strategic plan and the emphasis on undergoing transformations in Malaysian HE, the results showed that change-oriented capability (Arvonen, 2008; Ekvall, 1991; Ekvall & Arvonen, 1991; Yukl, 1999, 2004, 2012; Yukl et al., 2002) was a significant determinant of leadership performance only in department-individual professorial level leaders model.

IPMA. To evaluate the performance of the exogenous constructs, IPMA was employed. The analysis was performed for the two models as the outcomes of FIMIX-PLS. To this aim, leadership performance was set as the key target construct and for all the manifest variables, the values 1 and 5 were set as the minimum and maximum

values, respectively. Tables 4.41 and 4.42 as well as Figures 4.10 and 4.11 show the results of IMPA for FIMIX-PLS outcomes.

Table 4.41
IPMA for the University-Faculty Level Leaders Model

Construct	Importance	Performance	Index value
Generic	0.454	86.308	4.452
Role-specific	0.262	86.808	4.472

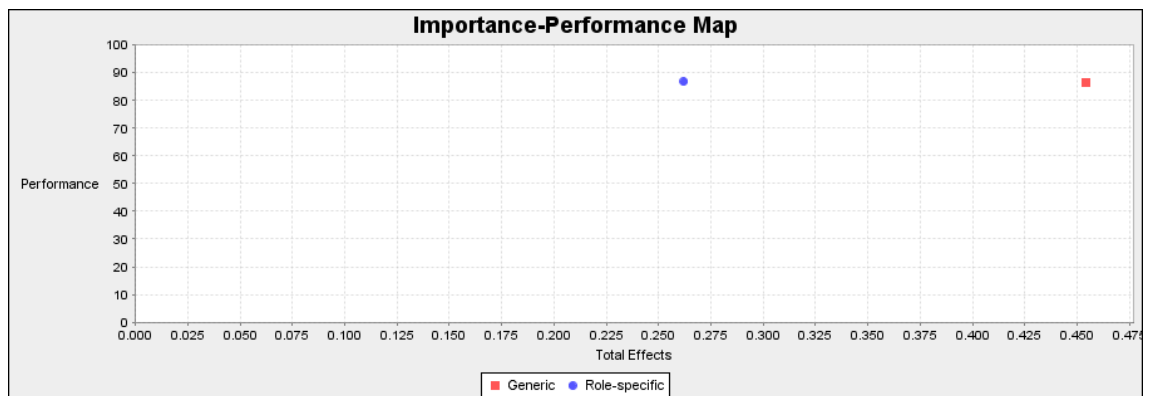


Figure 4.10. IPMA for the University-Faculty Level Leaders Model

Table 4.42
IPMA for the Department-Individual Professorial Level Leaders Model

Construct	Importance	Performance	Index value
Change-oriented	0.327	79.077	4.163
Interpersonal	0.309	85.015	4.401
Role-specific	0.239	83.973	4.359

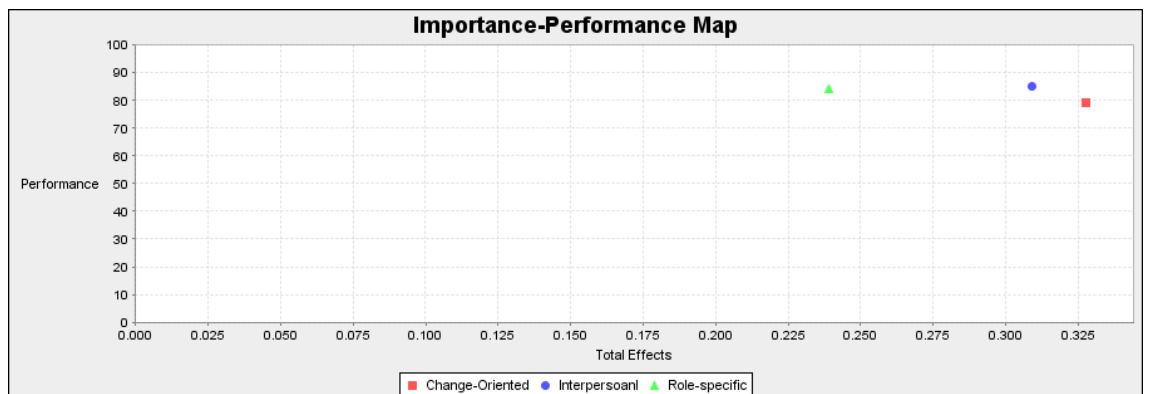


Figure 4.11. IPMA for the Department-Individual Professorial Level Leaders Model

Regarding university-faculty level leaders model, the output of IPMA revealed that generic competency, due to its higher importance in explaining the target construct in comparison with role-specific competency, must be focused as a priority in terms of improvement. Particularly, the results showed that 1 point increase in the performances of generic and role-specific competencies leads to the increase of the performance of leadership performance by the size of 0.454 and 0.262, respectively.

With respect to department-individual professorial level leaders model, the results implied that change-oriented capability had the highest relative importance in explaining the target construct, followed by interpersonal capability and role-specific competency. In other words, the results indicated that 1 point increase in the performances of change-oriented capability, interpersonal capability, and role-specific competency leads to the increase of the performance of leadership performance as the key target construct by the size of 0.327, 0.309, and 0.239, respectively.

summary. This analysis was undertaken to examine the extent to which different types of capabilities and competencies explain leadership performance in the context of Malaysian public research & comprehensive HE. The data were collected using the scales developed through piloting phase. In addition, PLS-SEM was considered as the main approach for the data analysis and SmartPLS 3 software package was employed to analyze the data. The analysis of the data at aggregate level indicated that personal and cognitive capabilities were not significant determinants of leadership performance in Malaysian public research & comprehensive HE. Moreover, the analysis did show that the coefficient of the path from generic competency towards leadership performance was greater than other path coefficients in the structural model. Afterward, the model was focused for identifying and treating unobserved

heterogeneity using FIMIX-PLS (Hair et al., 2014; Hair et al., 2016). The output of this analysis highlighted the fact that the level of the overlap between the FIMIX-PLS partitions and the partitions produced by leadership level with eight classes as one of the explanatory variables was 66 percent, implying a considerable level of overlap for the precise application of FIMIX-PLS. Hence, the classes under leadership level were merged to form a new leadership level variable with two classes, namely university-faculty level leaders and department-individual professorial level leaders, corresponding to the two segments produced by FIMIX-PLS. Next, PLS-SEM algorithm was run for both university-faculty level leaders model and department-individual professorial level leaders model to evaluate their outer and inner models.

The output of PLS-SEM showed that in university-faculty level leaders model, none of the leadership capabilities were significant in explaining leadership performance in the context of Malaysian public research & comprehensive HE. Focusing on department-individual professorial level leaders model, the output showed that only the path from generic competency to leadership performance was not significant in the context under study.

Finally, IPMA was run to extend the findings of PLS-SEM for the university-faculty level leaders and department-individual professorial level leader's models to identify the major areas of improvement to be addressed by management activities.

The output of IPMA showed that generic competency was the major area of improvement in the university-faculty level leaders model. Additionally, change-oriented capability was identified as the major area of improvement to be addressed by management activities on the grounds of department-individual professorial level leaders model.

research question 2-iii & 2-iv. To collect data for answering research question 2-iii and 2-iv, the previously developed scales were distributed among the leaders in 7 public focused and 12 private focused HEIs. In total, 94 surveys had been filled out by the leaders in Malaysian public focused and 78 had been completed by those leaders in private focused HEIs. Even though on the basis of the guidelines proposed by Hair et al. (2014), the sample sizes in each of the contexts under study were greater than the minimum required sample size (60 cases) to estimate the conceptual framework of the study, it deemed to be rather unlikely that the samples were true representative of their population. For this reason, the two samples were merged and the analysis was run for a sample of 172 cases in the context of Malaysian public and private focused HEIs to produce more accurate results.

initial data screening procedure. A few scatterplots were charted to detect obvious unusual cases. Additionally, one round of regression analysis was run for the initial model in the context of Malaysian public focused HEIs in order to generate the necessary statistics to be used for detecting problematic cases (Field, 2013). In other words, standardized residuals (Field, 2013), Cook's distances (Cook & Weisberg, 1982), Mahalanobis distances (Barnett & Lewis, 1994; Stevens, 2009), DFBeta and DFFit values (Field, 2013), and Hat values (Stevens, 2009) were examined. Then, SmartPLS 3 was employed to re-investigate the dataset for the existence of outliers on the basis of standardized factor scores (Garson, 2016). Through this procedure 11 outlying cases were identified and eliminated prior to undertaking the main analysis. Consequently, PLS-SEM algorithm was run for a sample of 161 cases in the context of Malaysian public and private focused HEIs.

reflective measurement model evaluation.

indicator reliability. The guidelines proposed by Hair et al. (2014) were followed to assess each of the items in the first order and second order measurement models. Through this procedure, 33 non-contributing items were identified and deleted.

Cronbach's alpha, composite reliability, and convergent validity. In Table 4.43, Cronbach's Alpha, composite reliability, and AVE for all the measurement models have been provided, disclosing no problem in terms of establishing reliability and convergent validity for the measurement models.

Table 4.43
Alpha, Composite Reliability, and AVE

Constructs	Cronbach's Alpha	Composite Reliability	AVE
APA	0.849	0.892	0.624
APE	0.846	0.891	0.621
BPD	0.817	0.880	0.648
Change-oriented	0.930	0.939	0.544
Cognitive	0.900	0.917	0.526
Generic	0.854	0.889	0.536
Interpersonal	0.831	0.876	0.540
Performance	0.893	0.912	0.510
Personal	0.721	0.827	0.545
RP	0.814	0.871	0.575
Role-specific	0.841	0.895	0.683
SAT	0.819	0.874	0.581
SES	0.853	0.895	0.631
SOC	0.860	0.900	0.643
TOB	0.783	0.874	0.697
UOR	0.715	0.840	0.636

discriminant validity. To establish discriminant validity, HTMT criterion (Henseler et al., 2015) was applied in this study. Table 4.44 summarizes the results of the computation of HTMT values and their 95% confidence intervals (two tailed). It is worth noting that the confidence intervals were computed through performing a complete bootstrapping routine with 5000 subsamples.

Table 4.44
Discriminant Validity

Constructs	Change-Oriented	Cognitive	Generic	Interpersonal	Performance	Personal
Cognitive	0.862 (0.793, 0.916)					
Generic	0.869 (0.787, 0.930)	0.765 (0.650, 0.844)				
Interpersonal	0.767 (0.656, 0.851)	0.781 (0.667, 0.863)	0.768 (0.635, 0.872)			
Performance	0.804 (0.707, 0.880)	0.739 (0.624, 0.832)	0.820 (0.720, 0.892)	0.702 (0.569, 0.796)		
Personal	0.694 (0.566, 0.795)	0.794 (0.681, 0.891)	0.689 (0.550, 0.799)	0.772 (0.618, 0.883)	0.607 (0.454, 0.751)	
Role-specific	0.766 (0.635, 0.852)	0.764 (0.645, 0.851)	0.810 (0.705, 0.890)	0.606 (0.445, 0.734)	0.792 (0.685, 0.877)	0.654 (0.500, 0.779)

On the grounds of the evaluation of HTMT values, 2 violations were detected based on $HTMT_{0.85}$. Based on $HTMT_{0.9}$, discriminant validity was established. Moreover, the results of the complete bootstrapping routine indicated that all the upper levels of the BCa confidence intervals of HTMT values were below 1. This implied the establishment of discriminant validity based on $HTMT_{inference}$ criterion as well.

correlation among the constructs. The correlation matrix of the latent variables has been displayed in Table 4.45 as another source of information regarding the model in this study.

Table 4.45
Correlation Among the Constructs

Constructs	Change-oriented	Cognitive	Generic	Interpersonal	Performance	Personal	Role-specific
Change-oriented	1						
Cognitive	0.787	1					
Generic	0.776	0.671	1				
Interpersonal	0.684	0.678	0.657	1			
Performance	0.735	0.668	0.718	0.614	1		
Personal	0.572	0.640	0.546	0.593	0.490	1	
Role-specific	0.680	0.664	0.688	0.517	0.688	0.506	1

structural model evaluation.

collinearity. All the VIF values for the latent variables constructing the inner model were well below the critical value of 5, indicating that collinearity issues can not cause any problems in this analysis. This initial evaluation was followed by examining the significance of the path coefficients in the model.

path coefficients. In the first round of the complete bootstrapping routine with BCa confidence intervals and 5000 subsamples, the option of “No Sign Changes” was selected. This run was meant to identify non-significant path coefficients. The results revealed that the paths from three exogenous constructs namely personal, interpersonal, and cognitive capabilities to leadership performance were not statistically significant. These findings, were repeated after running the bootstrapping routine (with the option “Individual Changes” enabled) for the second time.

Therefore, personal, interpersonal, and cognitive capabilities were eliminated from the model and all the coefficients were re-estimated. For this purpose, “No Sign Changes” option was selected as a method of dealing with sign indeterminacy characteristic of PLS-SEM and a complete bootstrapping routine was run. The results have been presented in Table 4.46, indicating that all the paths were significant. On the grounds of the results in the context of Malaysian public and private focused HEIs, the effect of change-oriented capability, comparing with other exogenous latent constructs, on leadership performance was the greatest effect, followed by role-specific and generic competencies.

Table 4.46
Path Coefficients

Paths	Original Sample	T Statistics	P Values
Change-Oriented -> Performance	0.346	3.954	0.000
Generic -> Performance	0.262	2.780	0.006
Role-specific -> Performance	0.272	3.310	0.001

It is noticeable that performing two rounds of bootstrapping with different configurations has been proposed by Hair et al. (2014) to check for sign indeterminacy characteristics of PLS-SEM which causes arbitrary sign changes in the bootstrapped estimates of path coefficients, loadings, and weights in comparison with the estimates which are obtained from the original sample.

Upon deletion of the exogenous constructs with non-significant paths to leadership performance, the model was re-assessed for collinearity among the three remaining exogenous constructs. The results of this analysis, shown in Table 4.47, indicated no cause for concern in terms of multicollinearity among the exogenous constructs.

Table 4.47
Collinearity Assessment

Exogenous Constructs	VIF
Change-oriented	2.796
Generic	2.854
Role-specific	2.116

coefficient of determination (R^2). The values of R^2 and Adjusted R^2 have been presented in Table 4.48.

Table 4.48
R² Values in the Model

Endogenous Constructs	R²	Adjusted R²
APE	0.864	0.864
BPD	0.875	0.875
Performance	0.630	0.623
RP	0.844	0.843
SES	0.845	0.844
SOC	0.881	0.880
TOB	0.756	0.755
UOR	0.787	0.785

Focusing on the results in terms of the predictive accuracy of the structural model, the output of the analysis showed that 63.0% of the variance in leadership performance was explained by change-oriented capability, generic competency, and role-specific competency in the context of Malaysian public and private focused HEIs. This indicated an almost substantial and acceptable predictive accuracy of the model. It is worth noting that the Adjusted R² in this analysis was 0.623.

effect size (f²). The contribution of each of the exogenous constructs on the predictive accuracy of the model has been displayed in Table 4.49. Based on the guidelines proposed by Cohen (1988), the results implied that the size of the effect of change-oriented capability on the predictive accuracy of the model was almost medium (0.116); the size of the effect of generic competency was small (0.065); and the size of the effect of role-specific competency was small (0.094) as well.

Table 4.49
f² Effect Sizes on Model's Predictive Accuracy

Exogenous Constructs	f²
Change-oriented	0.116
Generic	0.065
Role-specific	0.094

predictive relevance assessment (Q^2). The results of the blindfolding procedure have been shown in Table 4.50, indicating no cause for concern in terms of model's predictive relevance for the data points in the indicators of the endogenous reflective measurement models. In other words, all the Q^2 values were above zero. It is worth noting that since the sample size was 161 in this analysis, the omission distance was chosen to be 8 to ensure that the number of observations in the dataset divided by the omission distance was not an integer.

Table 4.50
 Q^2 Values in the Model

Endogenous Constructs	Q^2
APE	0.509
BPD	0.537
Performance	0.299
RP	0.460
SES	0.505
SOC	0.538
TOB	0.506
UOR	0.472

effect size (q^2). The results of computing the q^2 effect sizes have been displayed in Table 4.51. It is worth noting that the omission distance was chosen to be 8 in this analysis.

Table 4.51
 q^2 Effect Sizes on Model's Predictive Relevance

Exogenous Constructs	q^2
Change-oriented	0.030
Generic	0.016
Role-specific	0.022

Based on this information, while all the effect sizes were small, the results revealed that the size of the effect of change-oriented capability was greater, in comparison with other constructs, on model's predictive relevance.

detecting unobserved heterogeneity. The result of measurement models and structural model evaluations for the aggregate data has been presented in Figure 4.12.

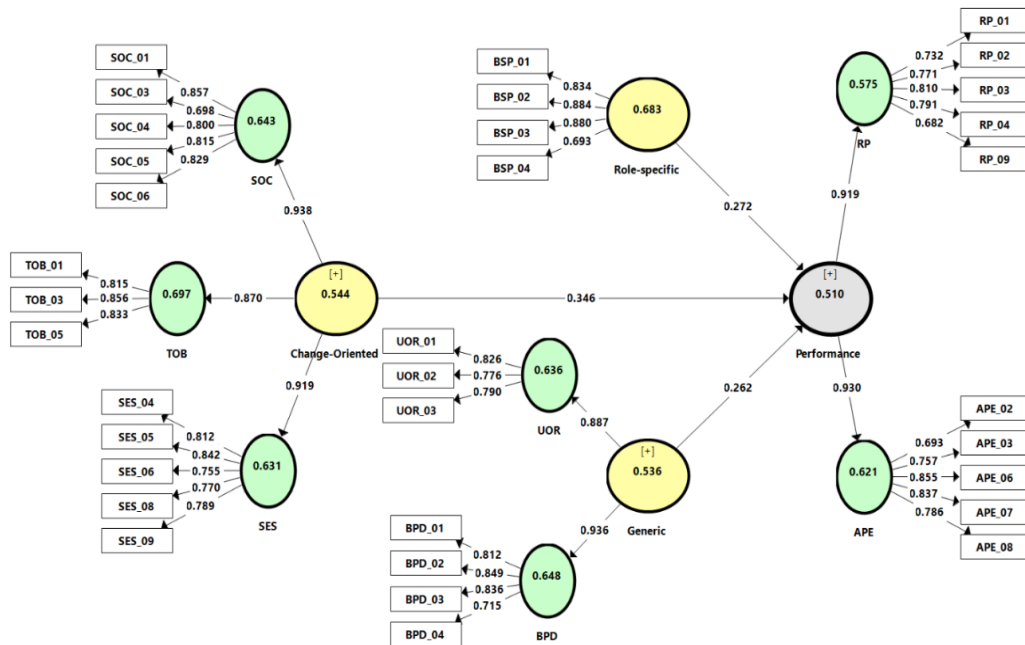


Figure 4.12. The Path Model Before Performing FIMIX-PLS

However, as suggested by Hair et al. (2014), Hair et al. (2016), and Matthews et al. (2016), FIMIX-PLS analysis was considered to detect unobserved heterogeneity within the data. The number of the arrows from the exogenous constructs toward the endogenous construct was 3 in Malaysian focused public and private HEIs model. Hence, following the guidelines proposed by Hair et al. (2014), the minimum sample sizes to evaluate the FIMIX-PLS results were considered to be 30. The results of FIMIX-PLS module of SmartPLS 3 software for the model have been presented in Table 4.52.

Table 4.52
Fit Indices and Relative Segment Sizes for FIMIX-PLS Solutions

Criteria	1 Segment (N= 161)	2 Segments (N1= 132, N2= 29)	3 Segments (N1= 86, N2= 46, N3= 29)	4 Segments (N1= 76, N2= 36, N3= 31, N4= 19)
AIC	1,457.08	1,115.21	1,037.19	938.8861
AIC3	1,475.08	1,152.21	1,093.19	1,013.89
AIC4	1,493.08	1,189.21	1,149.19	1,088.89
BIC	1,512.54	1,229.22	1,209.75	1,169.99
CAIC	1,530.54	1,266.22	1,265.75	1,244.99
MDL5	1,878.40	1,981.27	2,347.98	2,694.41
LnL	-710.539	-520.604	-462.5935	-394.4431
EN		0.9826	0.8558	0.8974

For the purpose of evaluating the solutions and EX Post analysis, the guidelines provided by Hair et al. (2016) and Matthews et al. (2016) were followed. Focusing on the model and based on fit indices, selecting 2-segments, 3-segments, and 4-segments solutions seemed to be unrealistic due to minimum sample size limitations. Hence, other quality criteria were not examined since unobserved heterogeneity didn't appear to be a real cause for concern in this analysis. Therefore, EX post analysis was not run. In other words, the results of the FIMIX-PLS analysis shed light on the fact that there was no need to estimate any segment-specific model in the context of Malaysian public and private focused HEIs and the model, which was analyzed for detecting unobserved heterogeneity, was the final valid and generalizable model.

IPMA. IPMA was employed to evaluate the performance of the exogenous constructs. To this aim, leadership performance was set the target construct and for all the manifest variables, the values 1 and 5 were set as the minimum and maximum values, respectively. It is noticeable that the analysis was performed using the default settings of SmartPLS 3.

The results for the developed model have been presented in Table 4.53 and Figure 4.13. In fact, while role-specific competency had the highest performance

score, change-oriented capability was identified as the construct with the maximum relative importance in explaining the key target construct, followed by generic and role-specific competencies. This indicated that the improvement of change-oriented capability of academic leaders in the context of Malaysian public and private focused HEIs must be at the focus of the management activities.

Table 4.53
IPMA for the Malaysian Public and Private Focused HEIs Model

Exogenous Constructs	Importance	Performance	Index value
Change-oriented	0.322	79.76	4.19
Generic	0.266	83.26	4.33
Role-specific	0.244	84.41	4.38

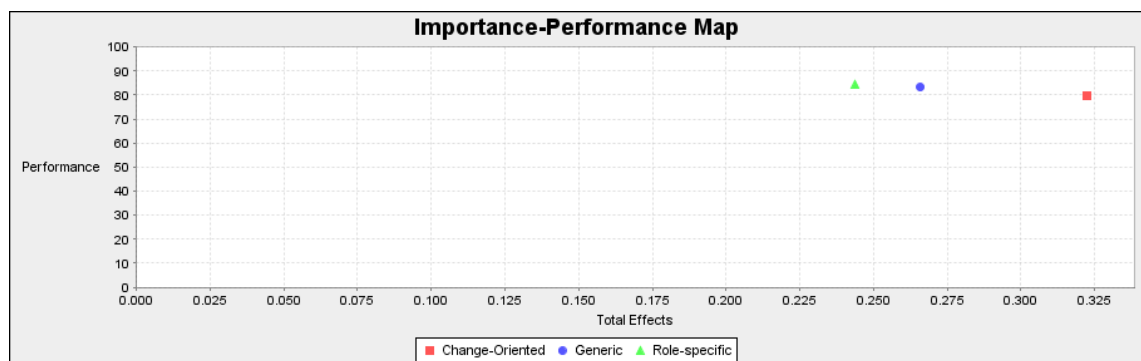


Figure 4.13. IPMA for the Malaysian Public and Private Focused HEIs Model

It is noteworthy that in the model, an increase of 1 point in the performances of change-oriented capability, generic competency, and role-specific competency led to the increase of the performance of leadership performance by the size of 0.322, 0.266, and 0.244, correspondingly.

summary. Through this analysis, the extent to which leadership performance could be explained by different types of leadership capabilities and managerial competencies in the context of Malaysian public and private focused HEIs was

examined. The outcome of the analysis of the data at aggregate level indicated that personal, interpersonal, and cognitive capabilities were not significant predictors of leadership performance in the context under study. Also, FIMIX-PLS (Hair et al., 2014; Hair et al., 2016) results did not indicate the existence of unobserved heterogeneity within the data. Additionally, the results of IPMA (Hair et al., 2014) showed that change-oriented capability was the major area of improvement to be addressed by management activities, followed by generic and role-specific competencies.

Research Question 3

To answer this question, data were collected through administering a survey containing four open-ended questions pertinent to Malaysian HE issues namely priorities, values, challenges, and solutions. Upon completion of this step, data screening procedure was carried out and then, a thematic approach was adopted to categorize the records or text data using ATLAS.ti 7. After categorization of the data, SPSS 23 was used to perform descriptive analysis to identify the main issues in Malaysian HE system and its sectors from the perspectives of the sampled academic leaders. The detailed information regarding these procedures have been provided in the following subsections.

research question 3-i.

initial data screening procedure. Through the examination of the collected data within the SPSS dataset, it was identified that 248 out of 368 participants had answered this open-ended question. The collected data were exported to Microsoft Excel for data cleaning and purification. For this aim, spelling errors were corrected and the exactly phrased statements were evaluated. The abbreviations were also

corrected and necessary words were capitalized. Moreover, sentences and phrases in Malay language were translated into English. Some examples of data cleaning and purifying have been presented in Table 4.54.

Table 4.54
Selected Errors and Corrections in the Database of Priorities

Error	Correction
Kpi	KPI
Dept	Department
Univ	University
Bumiputera	Malay
Swot	SWOT
Accreditated	Accredited
Govt	Government
Publicated	Published
Paased	Passed
Menghadiri Pelbagai Mesyuarat	Attend Various Meetings
Prog	Program
Appt	Appointment
Khidmat Masyarakat	Community Service

Thereafter, the answers were evaluated for their managerial and semantical relevancy. This procedure yielded to identify and eliminate some irrelevant records from the database. Table 4.55 summarizes the number of respondents and valid records (priorities) which have been categorized on the grounds of Malaysian HE sectors.

Table 4.55
Number and Percentage of Respondents for Priorities

HE Sector	# of Respondents	% of Respondents	# of Records	% of Records
Public Research & Comprehensive	139	56	799	57
Public Focused	64	26	342	24
Private Focused	45	18	263	19
Total	248	100	1404	100

the main analysis. ATLAS.ti 7 software package was employed for categorizing similar records of job priorities as well as labeling the categories. To that end, the conceptual analysis as a content analysis approach (Creswell, 2012) was adopted, the records were read and evaluated thoroughly, and then were assigned to

proper categories. It is noticeable that a few of the records, due to their meanings, were assigned to more than one category. Next, the categories were given proper labels. Tables 4.56 to 4.59 summarize the main job priorities of the sampled Malaysian academic leaders in the entire Malaysian HE and its sectors. It is worth noting that in any of the sectors, only the categories containing records of at least 5 percent of the number of respondents have been exhibited. In other words, categories containing less than 12, 7, 3, and 2 records have not been presented in the tables of work priorities in Malaysian HE system, public research & comprehensive HEIs, public focused HEIs, and private focused HEIs, respectively.

Table 4.56
Main Work Priorities in Malaysian HE system

No.	Category Label	Frequency
1	Achieving Goals, KPIs, & Standards	89
2	Teaching & Delivering Programs	70
3	Undertaking Research	67
4	Producing Publications	55
5	Finance, Budgeting, Grants, & Fundraising	41
6	Monitoring	37
7	Students Development, Expertise, & Employability	36
8	Performing Department & Faculty Routines	34
9	General Management	32
10	Performing Administrative & Governance Tasks	32
11	Designing, Accrediting, & Updating Programs & Contents	31
12	Recognition, Image, & Rank	31
13	Staff Affairs Management	29
14	Students Learning	29
15	Professional Development Training & Continuous Improvement	28
16	Staff Development, Empowerment, & Expertise	28
17	Students Supervision	27
18	Students Affairs Management	26
19	Networking	25
20	Providing Consultation	23
21	Receiving & Providing Support	22
22	Satisfaction, Happiness, & Enjoyment	22
23	Collaboration & Cooperation	21
24	Creating a Conducive & Convenient Environment	19
25	Persuasion, Motivation, & Inspiration	18
26	University / Community / Industry Engagement	18
27	Vision Building & Fulfilment	17
28	Change & Transformation	16
29	Helpfulness	16
30	Industry-University Linkage	15
31	Attending Meetings	14
32	Community Service & Outreach programs	14

Table 4.56 continued		
33	General Skills & Knowledge	14
34	Planning	14
35	Appreciation, Awareness, & Consciousness	13
36	Leading Academic & Non-academic Staff	13
37	Maintaining Infrastructures & Facilities	13
38	Providing Services & Opportunities	13
39	Punctuality & Timeliness	13
40	Time Management	12

Table 4.57
Main Work Priorities in Public Research & Comprehensive HEIs

No.	Category Label	Frequency
1	Achieving Goals, KPIs, & Standards	51
2	Teaching & Delivering Programs	42
3	Undertaking Research	38
4	Producing Publications	36
5	Finance, Budgeting, Grants, & Fundraising	28
6	Students Development, Expertise, & Employability	21
7	Recognition, Image, & Rank	20
8	Students Supervision	20
9	Performing Department & Faculty Routines	19
10	Students Affairs Management	19
11	Performing Administrative & Governance Tasks	18
12	Staff Affairs Management	18
13	General Management	16
14	Networking	16
15	Designing, Accrediting, & Updating Programs & Contents	15
16	Receiving & Providing Support	14
17	Professional Development Training & Continuous Improvement	13
18	Providing Consultation	13
19	Satisfaction, Happiness, & Enjoyment	13
20	Attending Meetings	12
21	Helpfulness	12
22	Maintaining Infrastructures & Facilities	12
23	Staff Development, Empowerment, & Expertise	12
24	University / Community / Industry Engagement	12
25	Collaboration & Cooperation	11
26	Students Learning	11
27	Appreciation, Awareness, & Consciousness	10
28	Creating a Conductive & Convenient Environment	10
29	General Skills & Knowledge	10
30	Industry-University Linkage	10
31	Monitoring	10
32	Providing Services & Opportunities	9
33	Persuasion, Motivation, & Inspiration	9
34	Community Service & Outreach programs	9
35	Team-working	8
36	Vision Building & Fulfilment	8
37	Change & Transformation	7
38	Clarity, Transparency, & Straightforwardness	7
39	Planning	7
40	Punctuality & Timeliness	7
41	Time Management	7

Table 4.58
Main Work Priorities in Public Focused HEIs

No.	Category Label	Frequency
1	Achieving Goals, KPIs, & Standards	30
2	Undertaking Research	14
3	Teaching & Delivering Programs	13
4	Producing Publications	12
5	Students Learning	11
6	General Management	10
7	Designing, Accrediting, & Updating Programs & Contents	10
8	Students Development, Expertise, & Employability	9
9	Professional Development Training & Continuous Improvement	9
10	Monitoring	9
11	Performing Administrative & Governance Tasks	8
12	Recognition, Image, & Rank	8
13	Providing Consultation	7
14	Change & Transformation	7
15	Finance, Budgeting, Grants, & Fundraising	6
16	Performing Department & Faculty Routines	6
17	Staff Development, Empowerment, & Expertise	6
18	Creating a Conductive & Convenient Environment	6
19	Planning	6
20	Coordinating	6
21	Networking	5
22	Collaboration & Cooperation	5
23	Persuasion, Motivation, & Inspiration	5
24	Vision Building & Fulfilment	5
25	Punctuality & Timeliness	5
26	Leading Academic & Non-academic Staff	5
27	Strategizing	5
28	Honesty & Integrity	5
29	Receiving & Providing Support	4
30	General Skills & Knowledge	4
31	Hard-working, Diligence, & Persistence	4
32	Target Setting	4
33	Sharing Information & Data	4
34	Staff Affairs Management	3
35	Satisfaction, Happiness, & Enjoyment	3
36	Helpfulness	3
37	University / Community / Industry Engagement	3
38	Providing Services & Opportunities	3
39	Community Service & Outreach programs	3
40	Communication	3
41	Mission Building & Accomplishment	3
42	Having Cognitive Resources	3
43	Trustworthiness, Truthfulness, & Sincerity	3
44	Problem Solving	3
45	Rapport, Friendliness, & Friendship	3

Table 4.59
Main Work Priorities in Private Focused HEIs

No.	Category Label	Frequency
1	Monitoring	18
2	Teaching & Delivering Programs	15
3	Undertaking Research	15
4	Staff Development, Empowerment, & Expertise	10
5	Performing Department & Faculty Routines	9
6	Achieving Goals, KPIs, & Standards	8
7	Staff Affairs Management	8
8	Producing Publications	7
9	Finance, Budgeting, Grants, & Fundraising	7
10	Students Learning	7
11	Students Development, Expertise, & Employability	6
12	Performing Administrative & Governance Tasks	6
13	General Management	6
14	Designing, Accrediting, & Updating Programs & Contents	6
15	Professional Development Training & Continuous Improvement	6
16	Satisfaction, Happiness, & Enjoyment	6
17	Students Supervision	5
18	Students Affairs Management	5
19	Collaboration & Cooperation	5
20	Relationships Establishment & Maintenance	5
21	Role Modeling and Providing Examples	5
22	Networking	4
23	Receiving & Providing Support	4
24	Persuasion, Motivation, & Inspiration	4
25	Vision Building & Fulfilment	4
26	Mentoring the Staff	4
27	Students Enrolment	4
28	Feedbacks & Critics	4
29	Recognition, Image, & Rank	3
30	Providing Consultation	3
31	University / Community / Industry Engagement	3
32	Creating a Conducive & Convenient Environment	3
33	Industry-University Linkage	3
34	Time Management	3
35	Creativity & Innovation	3
36	Communication	3
37	Mission Building & Accomplishment	3
38	Community Service & Outreach programs	2
39	Change & Transformation	2
40	Commitment, Passion, & Loyalty	2
41	Leading Academic & Non-academic Staff	2
42	Fairness, Equity, & Equality	2
43	Assessment & Benchmarking	2
44	Managing and Improving Quality	2
45	Sharing Information & Data	2
46	Problem Solving	2
47	Coordinating	2
48	Adaptability & Flexibility	2

summary. This analysis was performed to identify the main priorities from the perspectives of the sampled academic leaders in Malaysian HE system and its different sectors. Regarding the entire HE system, the results showed that the top five priorities among the sampled leaders in Malaysian HE system were exactly analogous to the top priorities of the respondents in the context of Malaysian public research & comprehensive HEIs sector. These priorities included Achieving Goals, KPIs, & Standards, Teaching & Delivering Programs, Undertaking Research, Producing Publications, and Finance, Budgeting, Grants, & Fundraising.

Focusing on the top priorities in each sector, the results revealed that Achieving Goals, KPIs, & Standards, Teaching & Delivering Programs, Undertaking Research, and Producing Publications were the top common priorities among the respondents in the context of Malaysian public research & comprehensive HEIs and public focused HEIs. Regarding Malaysian private focused HEIs, it was yielded that Monitoring, Teaching & Delivering Programs, Undertaking Research, and Staff Development, Empowerment, & Expertise were the top priorities of the sampled academic leaders in this context. It is noticeable that Achieving Goals, KPIs, & Standards, Teaching & Delivering Programs, and Undertaking Research were the three common top priorities from the viewpoints of the actual study sample in all the three sectors.

research question 3-ii.

initial data screening procedure. Many of participants (247 out of 368) had answered the open-ended question related to values. Microsoft Excel was employed to clean and purify the data. To this end, spelling errors were identified and corrected, the exactly phrased statements were evaluated, abbreviations were corrected, and necessary words were capitalized. Moreover, sentences and phrases in Malay language

were translated into English. In Table 4.60, a few examples of data cleaning have been provided.

Table 4.60
Selected Errors and Corrections in the Database of Values

Error	Correction
Tolerancy	Tolerance
Potrey	Poetry
Dept	Department
Thsnkful	Thankful
Thrustworthy	Trustworthy
Thoughtful	Thoughtful
Stratgically	Strategically
Rezeki	Providence
Tenang	Calm
Teliti	Elaborate
Team Work	Teamwork
Simpathy	Sympathy
Sikap	Attitude

Thereafter, the managerially and semantically irrelevant records were identified and eliminated from the database prior to categorizing the records. In Table 4.61, the number of respondents and valid categorized records (values) on the grounds of Malaysian HE sectors have been presented.

Table 4.61
Number and Percentage of Respondents for Values

HE Sector	# of Respondents	% of Respondents	# of Records	% of Records
Public Research & Comprehensive	139	56	737	60
Public Focused	62	25	303	25
Private Focused	46	19	194	16
Total	247	100	1234	100

the main analysis. To classify the similar values into individual categories, ATLAS.ti 7 was employed. For this reason, the conceptual analysis as a content analysis approach (Creswell, 2012) was adopted, the records were read and evaluated, and then were assigned to proper categories. Also, a few of the records were assigned

to more than one category since they had addressed more than one issue and then categories of data were labeled. Tables 4.62 to 4.65 summarize the main values from the viewpoints of the sampled Malaysian academic leaders in the entire Malaysian HE system and its sectors. It is worth noting that in any of the sectors, only the categories containing records of at least 5 percent of the number of respondents have been displayed. In other words, categories containing less than 12, 7, 3, and 2 records have not been displayed in the tables of values in Malaysian HE system, public research & comprehensive HEIs, public focused HEIs, and private focused HEIs, respectively.

Table 4.62
Main Work Values in Malaysian HE System

No.	Category Label	Frequency
1	Honesty & Integrity	127
2	Trustworthiness, Truthfulness, & Sincerity	72
3	Commitment, Passion, & Loyalty	65
4	Hard-working, Diligence, & Persistence	56
5	Team-working	36
6	Kindness, Empathy, & Sympathy	36
7	Patience & Tolerance	33
8	General Skills & Knowledge	33
9	Responsibility	31
10	Communication	30
11	Creativity & Innovation	28
12	Respect, Honor, & Dignity	27
13	Punctuality & Timeliness	27
14	Openness & Open-mindedness	24
15	Efficiency, Effectiveness, & Productivity	23
16	Professional Development Training & Continuous Improvement	21
17	Fairness, Equity, & Equality	21
18	Accountability	21
19	Discipline	20
20	Determination, Firmness, & Decisiveness	20
21	Persuasion, Motivation, & Inspiration	18
22	Care, Consideration, & Altruism	18
23	Time Management	16
24	Thinking	16
25	Clarity, Transparency, & Straightforwardness	16
26	Wisdom, Rationality, & Reflectiveness	14
27	Recognition, Image, & Rank	14
28	Leading Academic & Non-academic Staff	14
29	Ethics & Morality	14
30	Appreciation, Awareness, & Consciousness	14
31	Achieving Goals, KPIs, & Standards	14
32	Confidence	12
33	Authenticity, Reliability, & Accuracy	12

Table 4.63
Main Work Values in Public Research & Comprehensive HEIs

No.	Category Label	Frequency
1	Honesty & Integrity	76
2	Trustworthiness, Truthfulness, & Sincerity	42
3	Commitment, Passion, & Loyalty	41
4	Hard-working, Diligence, & Persistence	36
5	Team-working	22
6	Responsibility	22
7	Patience & Tolerance	22
8	Communication	20
9	Kindness, Empathy, & Sympathy	18
10	Creativity & Innovation	17
11	Punctuality & Timeliness	15
12	General Skills & Knowledge	14
13	Openness & Open-mindedness	13
14	Persuasion, Motivation, & Inspiration	12
15	Fairness, Equity, & Equality	12
16	Respect, Honor, & Dignity	12
17	Clarity, Transparency, & Straightforwardness	11
18	Efficiency, Effectiveness, & Productivity	11
19	Thinking	11
20	Determination, Firmness, & Decisiveness	11
21	Confidence	10
22	Accountability	9
23	Ethics & Morality	9
24	Faith & Worship	9
25	Appreciation, Awareness, & Consciousness	8
26	Time Management	8
27	Rapport, Friendliness, & Friendship	8
28	Care, Consideration, & Altruism	8
29	Authenticity, Reliability, & Accuracy	8
30	Discipline	8
31	Achieving Goals, KPIs, & Standards	7
32	Relationships Establishment & Maintenance	7
33	Managing and Improving Quality	7
34	Sharing Information & Data	7
35	Calmness & Peacefulness	7
36	Wisdom, Rationality, & Reflectiveness	7

Table 4.64
Main Work Values in Public Focused HEIs

No.	Category Label	Frequency
1	Honesty & Integrity	31
2	Trustworthiness, Truthfulness, & Sincerity	25
3	Commitment, Passion, & Loyalty	17
4	Hard-working, Diligence, & Persistence	14
5	Professional Development Training & Continuous Improvement	13
6	General Skills & Knowledge	12
7	Team-working	12
8	Respect, Honor, & Dignity	10
9	Efficiency, Effectiveness, & Productivity	8
10	Openness & Open-mindedness	8

11	Kindness, Empathy, & Sympathy	8
12	Collaboration & Cooperation	7
13	Punctuality & Timeliness	7
14	Responsibility	7
15	Accountability	7
16	Care, Consideration, & Altruism	7
17	Patience & Tolerance	7
18	Discipline	7
19	Determination, Firmness, & Decisiveness	6
20	Communication	5
21	Wisdom, Rationality, & Reflectiveness	5
22	Appreciation, Awareness, & Consciousness	4
23	Time Management	4
24	Creativity & Innovation	4
25	Sharing Information & Data	4
26	Ethics & Morality	4
27	Persuasion, Motivation, & Inspiration	3
28	Clarity, Transparency, & Straightforwardness	3
29	Leading Academic & Non-academic Staff	3
30	Relationships Establishment & Maintenance	3

Table 4.65
Main Work Values in Private Focused HEIs

No.	Category Label	Frequency
1	Honesty & Integrity	20
2	Kindness, Empathy, & Sympathy	10
3	General Skills & Knowledge	7
4	Commitment, Passion, & Loyalty	7
5	Creativity & Innovation	7
6	Fairness, Equity, & Equality	7
7	Achieving Goals, KPIs, & Standards	6
8	Recognition, Image, & Rank	6
9	Hard-working, Diligence, & Persistence	6
10	Punctuality & Timeliness	5
11	Leading Academic & Non-academic Staff	5
12	Communication	5
13	Respect, Honor, & Dignity	5
14	Trustworthiness, Truthfulness, & Sincerity	5
15	Accountability	5
16	Discipline	5
17	Time Management	4
18	Efficiency, Effectiveness, & Productivity	4
19	Boldness, Courage, & Assertiveness	4
20	Patience & Tolerance	4
21	Persuasion, Motivation, & Inspiration	3
22	Having Cognitive Resources	3
23	Humility	3
24	Openness & Open-mindedness	3
25	Care, Consideration, & Altruism	3
26	Thinking	3
27	Determination, Firmness, & Decisiveness	3
28	Undertaking Research	2
29	Finance, Budgeting, Grants, & Fundraising	2

Table 4.65 continued		
30	Professional Development Training & Continuous Improvement	2
31	Helpfulness	2
32	Students Learning	2
33	Appreciation, Awareness, & Consciousness	2
34	Creating a Conducive & Convenient Environment	2
35	Team-working	2
36	Clarity, Transparency, & Straightforwardness	2
37	Responsibility	2
38	Focus, Concentration, & Emphasis	2
39	Managing and Improving Quality	2
40	Attitude	2
41	Authenticity, Reliability, & Accuracy	2
42	Wisdom, Rationality, & Reflectiveness	2

summary. The results of this descriptive analysis were very amazing, especially the results with respect to the entire Malaysian HE system. In fact, analogous to the results of the previous question, the top five values in the context of the entire HE system were exactly analogous to the top five values of the sampled leaders in the public research & comprehensive HEIs. These top five values were Honesty & Integrity, Trustworthiness, Truthfulness, & Sincerity, Commitment, Passion, & Loyalty, Hard-working, Diligence, & Persistence, and Team-working.

Focusing on other sectors, it was found that Honesty & Integrity, Trustworthiness, Truthfulness, & Sincerity, Commitment, Passion, & Loyalty, and Hard-working, Diligence, & Persistence were the top values of the sampled leaders in both of public research & comprehensive HEIs and public focused HEIs. In addition, Honesty & Integrity, Kindness, Empathy, & Sympathy, General Skills & Knowledge, and Commitment, Passion, & Loyalty were the top four values of the respondents in the context of Malaysian private focused HEIs. It is noteworthy that, four categories including Honesty & Integrity, Trustworthiness, Truthfulness, & Sincerity, Commitment, Passion, & Loyalty, and Hard-working, Diligence, & Persistence were common among the respondents in all the contexts as well.

research question 3-iii.

initial data screening procedure. The examination of the collected data revealed that 244 out of 368 participants had answered the open-ended question centering around the challenges in Malaysian HE. The data were screened to detect errors. Through this procedure, misspelled words and abbreviations were corrected and necessary words were capitalized. Moreover, sentences and phrases in Malay language were translated into English. Examples of data cleaning and purifying for the challenges have been presented in Table 4.66.

Table 4.66
Selected Errors and Corrections in the Database of Challenges

Error	Correction
kerja staf yang tidak teliti	Staff Who Do Not Work Properly
JPA	Public Service Departments
Status qou	Status Quo
ppl	People
programme	Program
vc	Vice Chancellor
pilih pekerja yang baik	Choose Good Employees
etau	Or
prationers	Practitioners

Next, the records were screened in terms of their managerial or semantical relevancy. Upon completion of this procedure, identified problematic records were eliminated from the database of challenges prior to categorizing the records. In Table 4.67, the number of respondents and valid categorized records (challenges) on the grounds of Malaysian HE sectors have been presented.

Table 4.67
Number and Percentage of Respondents for Challenges

HE Sector	# of Respondents	% of Respondents	# of Records	% of Records
Public Research & Comprehensive	139	57	596	61
Public Focused	59	24	236	24
Private Focused	46	19	146	15
Total	244	100	978	100

the main analysis. To classify the similar challenges into individual categories, ATLAS.ti 7 was employed. For this reason, the records were read and evaluated thoroughly, and then were assigned to proper categories on the basis of the conceptual analysis as a content analysis approach (Creswell, 2012). Also, a few of the records were assigned to more than one category since they had addressed more than one issue. These procedures were followed by labeling the categories. Tables 4.68 to 4.71 summarize the main challenges from the perspective of the sampled Malaysian academic leaders in the entire HE system, public research & comprehensive HEIs, public focused HEIs, and private focused HEIs.

It is worth noting that in any of the sectors, only the categories containing records of at least 5 percent of the number of respondents have been shown. In other words, categories containing less than 12, 7, 3, and 2 records have not been presented in the tables of challenges in the entire Malaysian HE system, public research & comprehensive HEIs, public focused HEIs, and private focused HEIs, respectively. It is noticeable that the inefficiencies and shortages in any of these issues have been suggested by the respondents as the challenges that Malaysian academic leaders in different HE sectors face.

Table 4.68
Main Work Challenges in Malaysian HE System

No.	Category Label	Frequency
1	Staff Affairs Management	84
2	Finance, Budgeting, Grants, & Fundraising	82
3	Time Management	48
4	Achieving Goals, KPIs, & Standards	37
5	Proper Workload & Assignments	30
6	Maintaining Infrastructures & Facilities	27
7	Reducing Red Tape & Bureaucracy	27
8	Staff Development, Empowerment, & Expertise	25
9	Receiving & Providing Support	24
10	Students Development, Expertise, & Employability	24
11	Collaboration & Cooperation	23
12	Politics	19

Table 4.68 continued		
13	Change & Transformation	18
14	Policy Issues	18
15	Communication	17
16	Commitment, Passion, & Loyalty	15
17	Creating a Conducive & Convenient Environment	15
18	General Skills & Knowledge	15
19	Changing Mindsets & Organizational Climate	14
20	Leading Academic & Non-academic Staff	14
21	Persuasion, Motivation, & Inspiration	14
22	Undertaking Research	14
23	Recognition, Image, & Rank	13
24	Appreciation, Awareness, & Consciousness	12
25	Maintaining Balance Between Duties	12
26	Selflessness & Generosity	12
27	Trustworthiness, Truthfulness, & Sincerity	12

Table 4.69
Main Work Challenges in Public Research & Comprehensive HEIs

No.	Category Label	Frequency
1	Finance, Budgeting, Grants, & Fundraising	55
2	Staff Affairs Management	47
3	Maintaining Infrastructures & Facilities	24
4	Time Management	24
5	Achieving Goals, KPIs, & Standards	20
6	Staff Development, Empowerment, & Expertise	17
7	Proper Workload & Assignments	17
8	Reducing Red Tape & Bureaucracy	17
9	Politics	15
10	Students Development, Expertise, & Employability	14
11	Receiving & Providing Support	14
12	General Skills & Knowledge	14
13	Communication	13
14	Recognition, Image, & Rank	12
15	Undertaking Research	11
16	Change & Transformation	10
17	Fairness, Equity, & Equality	10
18	Persuasion, Motivation, & Inspiration	9
19	Trustworthiness, Truthfulness, & Sincerity	9
20	Collaboration & Cooperation	8
21	Creating a Conducive & Convenient Environment	8
22	Policy Issues	8
23	Prioritizing	8
24	Changing Mindsets & Organizational Climate	8
25	Team-working	7
26	Leading Academic & Non-academic Staff	7
27	Appointment, Promotion, & Meritocracy	7

Table 4.70
Main Work Challenges in Public Focused HEIs

No.	Category Label	Frequency
1	Finance, Budgeting, Grants, & Fundraising	17
2	Staff Affairs Management	17
3	Time Management	12
4	Achieving Goals, KPIs, & Standards	10
5	Proper Workload & Assignments	10
6	Commitment, Passion, & Loyalty	9
7	Receiving & Providing Support	8
8	Collaboration & Cooperation	7
9	Leading Academic & Non-academic Staff	7
10	Policy Issues	7
11	Staff Development, Empowerment, & Expertise	5
12	Appreciation, Awareness, & Consciousness	5
13	Change & Transformation	5
14	Selflessness & Generosity	5
15	Changing Mindsets & Organizational Climate	5
16	Students Development, Expertise, & Employability	4
17	Professional Development Training & Continuous Improvement	4
18	Persuasion, Motivation, & Inspiration	4
19	Politics	4
20	Decision Making	4
21	Accessing & Managing Information / Resources	4
22	Attitude	4
23	Reducing Red Tape & Bureaucracy	4
24	Teaching & Delivering Programs	3
25	Creating a Conductive & Convenient Environment	3
26	Team-working	3
27	Punctuality & Timeliness	3
28	Trustworthiness, Truthfulness, & Sincerity	3
29	Maintaining Balance Between Duties	3

Table 4.71
Main Work Challenges in Private Focused HEIs

No.	Category Label	Frequency
1	Staff Affairs Management	20
2	Time Management	12
3	Finance, Budgeting, Grants, & Fundraising	10
4	Collaboration & Cooperation	8
5	Achieving Goals, KPIs, & Standards	7
6	Students Development, Expertise, & Employability	6
7	Reducing Red Tape & Bureaucracy	6
8	Performing Administrative & Governance Tasks	5
9	Creating a Conductive & Convenient Environment	4
10	Staff Development, Empowerment, & Expertise	3
11	Appreciation, Awareness, & Consciousness	3
12	Change & Transformation	3
13	Students Enrolment	3
14	Following Rules, Principles, & Instructions	3
15	Maintaining Balance Between Duties	3
16	Policy Issues	3
17	Proper Workload & Assignments	3

Table 4.71 continued		
18	Students Affairs Management	2
19	General Management	2
20	Receiving & Providing Support	2
21	Punctuality & Timeliness	2
22	Team Management	2
23	Communication	2
24	Decision Making	2

summary. This analysis was meant to identify the main challenges in Malaysian HE from the viewpoints of the actual study sample. The results revealed that inefficiencies and shortages related to four issues including Staff Affairs Management, Finance, Budgeting, Grants, & Fundraising, Time Management, and Achieving Goals, KPIs, & Standards were common challenges from the perspectives of the sampled leaders in the entire HE System as well as its sectors. Additionally, the challenges related to Proper Workload & Assignments was common among the respondents in the entire HE system, public research & comprehensive HEIs, and public focused HEIs.

It is noticeable that challenge related to three categories namely Maintaining Infrastructures & Facilities, Staff Development, Empowerment& Expertise, and Reducing Red Tape & Bureaucracy were only among the top challenges that the sampled academic leaders had encountered in the context of Malaysian public research & comprehensive HEIs. In addition, challenges related to the lack of Commitment, Passion, & Loyalty as well as Receiving & Providing Support were only among the top challenges faced by the respondents in the context of Malaysian public focused HEIs. Moreover, focusing on Malaysian private focused HEIs, the ineffectiveness in Collaboration & Cooperation was among the top challenges in this context only.

research question 3-iv.

initial data screening procedure. Around 64% of the participants (236 out of 368) in the study had answered the open-ended question related to solutions. The collected data were cleaned and purified using Microsoft Excel. To this end, spelling errors were identified and modified, abbreviations were corrected, the exactly phrased statements were evaluated, and necessary words were capitalized. Additionally, sentences and phrases in Malay language were translated into English. In Table 4.72, a few examples of data cleaning have been displayed.

Table 4.72
Selected Errors and Corrections in the Database of Solutions

Error	Correction
staf	Staff
latihan kepada staf	Training of Staff
dept	Department
kem motivasi kebersamaan	Being Motivated and Together
zamalah	Fellowships
MUET	MALAYSIAN UNIVERSITY ENGLISH TEST
criticm	Criticism
maching	Matching
incooperative	Uncooperative

Next, the records were screened in terms of their managerial and semantical relevancy. Through this procedure, identified problematic records were eliminated from the database of solutions prior to categorizing the records. In Table 4.73, the number of respondents and valid categorized records (solutions) on the grounds of Malaysian HE sectors have been presented.

Table 4.73
Number and Percentage of Respondents for Solutions

HE Sector	# of Respondents	% of Respondents	# of Records	% of Records
Public Research & Comprehensive	135	57	567	62
Public Focused	57	24	208	23
Private Focused	44	19	142	15
Total	236	100	917	100

the main analysis. The software package ATLAS.ti 7 was employed for categorizing similar records of solutions into individual categories as well as labeling them. For this reason, the conceptual analysis as a content analysis approach (Creswell, 2012) was adopted, the records were read and evaluated thoroughly, and then were assigned to proper categories. It is noticeable that a few of the records due to their meanings, were assigned to more than one category. Next, the categories were given proper labels. Tables 4.74 to 4.77 summarize the main solutions to the challenges faced by the sampled Malaysian academic leaders in the entire Malaysian HE system and its sectors. It is noticeable that in any of the sectors, only the categories containing records of at least 5 percent of the number of respondents have been exhibited. In other words, categories containing less than 12, 7, 3, and 2 records have not been displayed in the tables of solutions in Malaysian HE system, public research & comprehensive HEIs, public focused HEIs, and private focused HEIs, respectively. In fact, the enhancements and improvements related to these issues have been suggested by the respondents as the solutions to the current challenges.

Table 4.74
Main Work Solutions in Malaysian HE system

No.	Category Label	Frequency
1	Finance, Budgeting, Grants, & Fundraising	57
2	Professional Development Training & Continuous Improvement	53
3	Staff Affairs Management	52
4	Communication	30
5	Discussion & Dialogue	30
6	Time Management	28
7	Appreciation, Awareness, & Consciousness	23
8	Maintaining Infrastructures & Facilities	22
9	Leading Academic & Non-academic Staff	20
10	Appointment, Promotion, & Meritocracy	18
11	General Skills & Knowledge	18
12	Openness & Open-mindedness	17
13	Politics	17
14	Receiving & Providing Support	17
15	Staff Development, Empowerment, & Expertise	15
16	Change & Transformation	14
17	Clarity, Transparency, & Straightforwardness	14
18	Fairness, Equity, & Equality	14
19	Recognition, Image, & Rank	14

Table 4.74 continued		
20	Persuasion, Motivation, & Inspiration	13
21	Planning	13
22	Prioritizing	13
23	Proper Workload & Assignments	13
24	Providing Consultation	13
25	Collaboration & Cooperation	12
26	University / Community / Industry Engagement	12

Table 4.75
Main Work Solutions in Public Research & Comprehensive HEIs

No.	Category Label	Frequency
1	Finance, Budgeting, Grants, & Fundraising	38
2	Staff Affairs Management	28
3	Professional Development Training & Continuous Improvement	27
4	Communication	20
5	Discussion & Dialogue	19
6	Maintaining Infrastructures & Facilities	18
7	Appreciation, Awareness, & Consciousness	17
8	Appointment, Promotion, & Meritocracy	14
9	Openness & Open-mindedness	14
10	General Skills & Knowledge	13
11	Time Management	13
12	Fairness, Equity, & Equality	12
13	Leading Academic & Non-academic Staff	11
14	Politics	11
15	Recognition, Image, & Rank	10
16	Receiving & Providing Support	10
17	Clarity, Transparency, & Straightforwardness	10
18	Prioritizing	10
19	Staff Development, Empowerment, & Expertise	9
20	Change & Transformation	9
21	Planning	9
22	Undertaking Research	8
23	Collaboration & Cooperation	8
24	Relationships Establishment & Maintenance	8
25	Persuasion, Motivation, & Inspiration	7
26	Management Systems & Mechanisms	7
27	Trustworthiness, Truthfulness, & Sincerity	7
28	Role Modeling and Providing Examples	7
29	Changing Mindsets & Organizational Climate	7
30	Reducing Red Tape & Bureaucracy	7

Table 4.76
Main Work Solutions in Public Focused HEIs

No.	Category Label	Frequency
1	Professional Development Training & Continuous Improvement	16
2	Staff Affairs Management	15
3	Finance, Budgeting, Grants, & Fundraising	10
4	Providing Consultation	6
5	Time Management	6
6	Politics	6
7	Discussion & Dialogue	6
8	Proper Workload & Assignments	6
9	Receiving & Providing Support	5
10	Staff Development, Empowerment, & Expertise	5
11	Persuasion, Motivation, & Inspiration	5
12	Leading Academic & Non-academic Staff	5
13	Target Setting	5
14	Policy Issues	5
15	Attending Meetings	4
16	Maintaining Infrastructures & Facilities	4
17	Appreciation, Awareness, & Consciousness	4
18	General Skills & Knowledge	4
19	Team-working	4
20	Appointment, Promotion, & Meritocracy	4
21	Division of Labor	4
22	University / Community / Industry Engagement	3
23	Industry-University Linkage	3
24	Planning	3
25	Team Management	3
26	Mentoring the Staff	3
27	Communication	3
28	Assessment & Benchmarking	3

Table 4.77
Main Work Solutions in Private Focused HEIs

No.	Category Label	Frequency
1	Professional Development Training & Continuous Improvement	10
2	Finance, Budgeting, Grants, & Fundraising	9
3	Staff Affairs Management	9
4	Time Management	9
5	Communication	7
6	Creating a Conductive & Convenient Environment	6
7	Discussion & Dialogue	5
8	Recognition, Image, & Rank	4
9	Change & Transformation	4
10	Leading Academic & Non-academic Staff	4
11	University / Community / Industry Engagement	3
12	Salary & Incentives	3
13	Discipline	3
14	Reducing Red Tape & Bureaucracy	3
15	Achieving Goals, KPIs, & Standards	2
16	General Management	2
17	Receiving & Providing Support	2
18	Providing Consultation	2

Table 4.77 continued		
19	Collaboration & Cooperation	2
20	Appreciation, Awareness, & Consciousness	2
21	Clarity, Transparency, & Straightforwardness	2
22	Efficiency, Effectiveness, & Productivity	2
23	Relationships Establishment & Maintenance	2
24	Students Enrolment	2
25	Strategizing	2
26	Openness & Open-mindedness	2
27	Following Rules, Principles, & Instructions	2
28	Proper Workload & Assignments	2

summary. This analysis was performed to identify the main solutions to the challenges faced by sampled Malaysian academic leaders. The results indicated that the top five solutions proposed by the sampled leaders in the context of the entire HE system were the same as the top five proposed solutions in the context of Malaysian public research & comprehensive HEIs. These solutions were enhancements regarding to Finance, Budgeting, Grants, & Fundraising, Professional Development Training & Continuous Improvement, Staff Affairs Management, Communication, and Discussion & Dialogue.

In addition, enhancements or improvements related to Finance, Budgeting, Grants, & Fundraising, Staff Affairs Management, and Professional Development Training & Continuous Improvement were the top three common solutions proposed by the respondents in each sector. Moreover, improvements in Communication was a common top solution among the sampled leaders in Malaysian public research & comprehensive HEIs and Malaysian private focused HEIs. Lastly, improvements in Time Management had been proposed by the respondents in public and private focused HEIs as a top common solution.

examination of the data from another perspective. To provide a better picture of Malaysian HE System issues from the perspective of the sampled academic

leaders, the word cloud of these categories has been illustrated in Figure 4.14. All the 112 categories have been displayed in this word cloud and the size of the titles of the categories represent their frequency.



Figure 4.14. The word cloud of Malaysian HE issues

Even though all the 4 sub-questions under research question 3 were answered satisfactorily, the 112 categories were focused from a different angle as well. In fact, they were evaluated from a thematic perspective (Creswell, 2012) to identify the main mega-categories containing conceptually similar categories.

This examination revealed that all the 112 categories can be classified into 5 mega-categories namely Academic Core Activities, Change & Leadership, Management, Relationships, and Work Values. Tables 4.78 to 4.82 present the main mega-categories with their assigned conceptually similar categories and their frequencies for the entire Malaysian HE System from the perspectives of the sampled leaders in this study.

Table 4.78
The Categories Classified Under Academic Core Activities

No	Academic Core Activities Categories	Frequency
1	Staff Affairs Management	168
2	Undertaking Research	97
3	Teaching & Delivering Programs	81
4	Students Development, Expertise, & Employability	72
5	Producing Publications	70
6	Students Development, Expertise, & Employability	66
7	Creating a Conducive & Convenient Environment	50
8	Performing Administrative & Governance Tasks	44
9	Proper Workload & Assignments	43
10	Designing, Accrediting, & Updating Programs & Contents	39
11	Providing Consultation	39
12	Students Learning	38
13	Performing Department & Faculty Routines	37
14	Students Affairs Management	34
15	Students Supervision	31
16	Students Enrolment	18
17	Having Autonomy & Academic Freedom	15
18	Mentoring the Staff	15
19	Attending Conferences, Workshops & Colloquiums	13

Table 4.79
The Categories Classified Under Change & Leadership

No	Change & Leadership Categories	Frequency
1	Professional Development Training & Continuous Improvement	111
2	Receiving & Providing Support	68
3	Persuasion, Motivation, & Inspiration	63
4	Leading Academic & Non-academic Staff	61
5	Change & Transformation	53
6	Creativity & Innovation	47
7	Vision Building & Fulfilment	33
8	Discussion & Dialogue	32
9	Target Setting	23
10	Thinking	23
11	Changing Mindsets & Organizational Climate	23
12	Providing Services & Opportunities	22
13	Role Modeling and Providing Examples	22
14	Focus, Concentration, & Emphasis	21
15	Having Cognitive Resources	19
16	Adaptability & Flexibility	16
17	Feedbacks & Critics	16
18	Strategizing	15
19	Mission Building & Accomplishment	13
20	Sustaining Values & Best Practices	11
21	R&D	10

Table 4.80
The Categories Classified Under Management

No	Management Categories	Frequency
1	Finance, Budgeting, Grants, & Fundraising	183
2	Achieving Goals, KPIs, & Standards	145
3	Time Management	104
4	General Skills & Knowledge	80
5	Maintaining Infrastructures & Facilities	68
6	Team-working	65
7	General Management	53
8	Monitoring	45
9	Politics	45
10	Reducing Red Tape & Bureaucracy	39
11	Efficiency, Effectiveness, & Productivity	38
12	Planning	33
13	Attending Meetings	31
14	Appointment, Promotion, & Meritocracy	29
15	Sharing Information & Data	27
16	Policy Issues	27
17	Prioritizing	23
18	Team Management	22
19	Managing and Improving Quality	19
20	Accessing & Managing Information / Resources	19
21	Decision Making	19
22	Maintaining Balance Between Duties	18
23	Management Systems & Mechanisms	16
24	Problem Solving	16
25	Salary & Incentives	15
26	Following Rules, Principles, & Instructions	14
27	Division of Labor	12
28	Assessment & Benchmarking	12
29	Directing	11

Table 4.80 continued		
30	Coordinating	11
31	Organizing	10

Table 4.81
The Categories Classified Under Relationships

No	Relationships Categories	Frequency
1	Communication	87
2	Collaboration & Cooperation	67
3	Networking	39
4	University / Community / Industry Engagement	37
5	Relationships Establishment & Maintenance	35
6	Industry-University Linkage	24
7	Community Service & Outreach programs	21
8	Rapport, Friendliness, & Friendship	20

Table 4.82
The Categories Classified Under Work Values

No	Work Values Categories	Frequency
1	Honesty & Integrity	145
2	Trustworthiness, Truthfulness, & Sincerity	100
3	Commitment, Passion, & Loyalty	94
4	Hard-working, Diligence, & Persistence	76
5	Recognition, Image, & Rank	72
6	Appreciation, Awareness, & Consciousness	62
7	Fairness, Equity, & Equality	54
8	Openness & Open-mindedness	52
9	Punctuality & Timeliness	51
10	Responsibility	47
11	Clarity, Transparency, & Straightforwardness	43
12	Kindness, Empathy, & Sympathy	41
13	Patience & Tolerance	41
14	Respect, Honor, & Dignity	40
15	Satisfaction, Happiness, & Enjoyment	37
16	Discipline	28
17	Helpfulness	28
18	Attitude	26
19	Accountability	26
20	Determination, Firmness, & Decisiveness	24
21	Care, Consideration, & Altruism	23
22	Selflessness & Generosity	20
23	Wisdom, Rationality, & Reflectiveness	17
24	Authenticity, Reliability, & Accuracy	16
25	Confidence	16
26	Ethics & Morality	15
27	Faith & Worship	15
28	Calmness & Peacefulness	13
29	Vigilance, Carefulness, & Meticulousness	13
30	Boldness, Courage, & Assertiveness	13
31	Consensus, Unity, & Harmony	12
32	Humility	11
33	Maturity & Perfection	11

Also, all the 112 categories were evaluated from another extra perspective. To this end, the 4 tables of priorities, values, challenges, and solutions in each of the four contexts namely entire HE system, public research & comprehensive HEIs, public focused HEIs, and private focused HEIs were evaluated to detect common issues in each context. The results, displayed in Table 4.83, indicated that 5 issues under HE system, 3 issues under public research & comprehensive HEIs, 3 issues under public focused HEIs, and 5 issues under private focused HEIs were common in the tables of priorities, values, challenges, and solutions. In fact, focusing on each context, while any of these issues was a priority and a value, the incompetency, inefficacy, or shortage of them was a challenge, and improving or promoting any of them had been viewed as a solution to the challenges faced by the sampled Malaysian academic leaders. This, as the unique contribution of this research in comparison with similar studies, suggested the consideration of these issues in developing and updating developmental programs as well as making new policies to ensure a quality provision of HE in Malaysian universities.

Table 4.83
Main Areas of Focus in Malaysian HE and Its Sectors

Sector	No.	Common Issues
HE System	1	Time Management
	2	Appreciation, Awareness, & Consciousness
	3	Leading Academic & Non-academic Staff
	4	General Skills & Knowledge
	5	Recognition, Image, & Rank
	6	Persuasion, Motivation, & Inspiration
Public Research & Comprehensive HEIs	1	General Skills & Knowledge
	2	Time Management
	3	Persuasion, Motivation, & Inspiration
Public Focused HEIs	1	Professional Development Training & Continuous Improvement
	2	Persuasion, Motivation, & Inspiration
	3	Leading Academic & Non-academic Staff
Private Focused HEIs	1	Finance, Budgeting, Grants, & Fundraising
	2	Time Management
	3	Communication
	4	Creating a Conductive & Convenient Environment
	5	Achieving Goals, KPIs, & Standards

As a concluding note, the identified issues through research question 3, to a large degree, emphasized the fact that in university leadership, the context matters and to lead universities effectively, the issues must be addressed precisely. Additionally, they did denote that some of the major issues being faced by HEIs were global. For example, the preferences pertinent to teaching and delivering subjects, conducting research, and inspiring the staff had been addressed by Moses and Ramsden (1992) and the values such as honesty and fairness had been considered by Lazaridou (2007) and Burns (1978). It is noticeable that most of the identified academic priorities, values, and challenges in this research had also been focused in the two recent research studies focusing on leadership capabilities and managerial competencies carried out in Australia (Scott et al., 2008) as well as in Australia and New Zealand (Scott & McKellar, 2012). More specifically and given the importance of the challenges in the literature, it was found that many of the identified challenges were in alignment with results of the previous research works. For example, identified challenges related to funding (Drew, 2010; Fullan & Scott, 2009; Keener et al., 2002), staff management and human resources (Drew, 2010; Keener et al., 2002), as well as red tape and bureaucracy (Black, 2015; Fullan & Scott, 2009; Teferra & Altbach, 2004) may be stated. Other challenges, which were consistent with the findings in other research studies, included heavy workloads and the nature of academic work (Ramsden, 1998b), lack of collaborations (Black, 2015; Drew, 2010), lack of commitment and loyalty (Black, 2015), inefficiencies in time and time management skills (Drew, 2010), and lack of supporting services (Fullan & Scott, 2009).

Summary

This chapter was started with explanations regarding data collection and general data screening procedure to analyze the collected data to answer the three

research questions. To answer research question one, a descriptive approach was adopted to identify the prominent elements in leadership capabilities, managerial competencies, and leadership performance indicators from the perspectives of the sampled leaders in the actual study. Research question two was answered through undertaking a series of advanced techniques in terms of data screening and data analysis. Through this research question, a few models were developed for the contribution of leadership capabilities and managerial competencies to leadership performance in Malaysian HE system and its sectors. With respect to research question three, thematic and descriptive analyses were performed to identify the main issues in Malaysian HE from the perspective of the sampled leaders. The results of this analysis highlighted the fact that all the issues in Malaysian HE can be categorized into five mega-categories namely Academic Core Activities, Change & Leadership, Management, Relationships, and Work Values.

Collectively, all the research questions were answered satisfactorily through this chapter. The results were also interpreted in details. In the next chapter, the main discussions, implications of the findings, and future research recommendations have been elaborated.

CHAPTER 5

SUMMARY OF FINDINGS, DISCUSSIONS, AND CONCLUSION

Introduction

In the recent years, research on leadership capabilities and managerial competencies in different contexts has attracted a lot of attention. The interest on undertaking research in this field has been even more in the context of HEIs since these organizations, as the venues for the communities of scholars, play a very special and pivotal role in fostering and flourishing future leaders who are expected to make significant differences. Since people working in HEIs are talented, resourceful, and knowledgeable leaders, leading these organizations is totally different from and harder than other types of organizations. For this reason, the current study has focused on qualities of Malaysian academic leaders which are required to lead universities effectively and efficiently.

Also, the other aspect of the uniqueness of this study lies in the integration of the responses given to two different types of questions namely close-ended and open-ended questions. As a matter of fact, the respondents in this study rated some close-ended questions focusing on leadership capabilities, managerial competencies, and leadership performance and thereafter, they were given the opportunity to explain their views regarding the priorities, values, challenges, and solutions in the context of Malaysian HEIs through four open-ended questions. The explanatory data, collected from more than 200 respondents, were analyzed to be used as an evidence to support the findings yielded from the analysis of the close-ended questions as well as to identify the main issues in Malaysian HE.

It is notable that the current study was underpinned and guided by a few theories and models. On the grounds of these theories, it attempted to develop context specific models for the contribution of capabilities and competencies to leadership performance in in the entire Malaysian HE system, public research & comprehensive HEIs, public and private focused HEIs.

Regarding the pilot study, the data were collected from academic leaders in 9 universities and with respect to the actual study, academic leaders from 25 randomly selected universities in entire Malaysia participated in the study. In total, 90 and 368 completed surveys were analyzed through the pilot and the actual studies, respectively. It is remarkable that more than 200 academic leaders out of 368 respondents of the actual study had answered the four open-ended questions.

To recap, the main objectives of the study, developed based on the research problems, have been presented in the following lines. Each of these objectives was linked to a research question and the results of the analysis satisfactorily answered all the questions.

- i. Descriptively identifying the prominent elements in capabilities and competencies in explaining leadership performance and the main leadership performance indicators in Malaysian HEIs and its sectors.
- ii. Determining the extent to which different types of leadership capabilities and managerial competencies explain leadership performance of academic leaders in Malaysian academic context.
- iii. Investigating the current issues (priorities, values, challenges and solutions to these challenges) in Malaysian academic context from the perspectives of academic leaders.

Through this chapter, the main findings on the grounds of the analysis of the quantitative and qualitative data have been summarized, followed by a comprehensive discussion on the findings, implications of the study, recommendation for future research in this area, and finally a concluding section.

Summary of Major Findings

research question 1. Descriptive statistic techniques were employed to answer this research question. Prior to the main analysis, the issues of missing values were handled as well. Then the descriptive statistics tables, containing the mean scores and SDs, were examined separately at subscale level in the context of Malaysian HE system and its sectors. The outputs in different HE contexts were also compared. The major findings through answering this research question have been listed below:

- The item “**Pitching in and undertaking menial tasks when needed**” under **making decisions and judgements** subscale had the **minimum** importance from the perspective of respondents in Malaysian HE system and its sectors.
- The Item “**Wanting to achieve the best outcome possible**” under **making decisions and judgements** subscale had the **maximum** importance from the perspective of respondents in Malaysian HE system, public research & comprehensive HEIs, and public focused HEIs.
- The item “**Working constructively with people who are 'resistors' or are over-enthusiastic**” under **sharing information and data** subscale had the **minimum** importance from the perspective of respondents in Malaysian HE system and its sectors.

- The item “**Motivating others to achieve positive outcomes**” under **sharing information and data** subscale had the **maximum** importance from the perspective of respondents in Malaysian HE system and its sectors.
- The item “**Seeing the best way to respond to a perplexing situation**” under **strategic adaptive thinking** subscale had the **minimum** importance from the perspective of respondents in Malaysian HE system, public research & comprehensive HEIs, and public focused HEIs.
- The item “**Having a clear, justified and achievable direction in my area of responsibility**” under **strategic adaptive thinking** subscale had the **maximum** importance from the perspective of respondents in Malaysian HE system and its sectors.
- The item “**Recognizing how seemingly unconnected activities are linked**” under **analyzing problems and alternatives** subscale had the **minimum** importance from the perspective of respondents in Malaysian HE system and its sectors.
- The item “**Diagnosing the underlying causes of a problem and taking appropriate action to address it**” under **analyzing problems and alternative** subscale had the **maximum** importance from the perspective of respondents in Malaysian HE system and its sectors.
- The item “**Explaining about undesirable outcomes that are likely to occur if new opportunities are exploited by competitors**” under **strategic environmental scanning** subscale had the **minimum**

importance from the perspective of respondents in Malaysian HE system, public research & comprehensive HEIs, and public focused HEIs.

- The item “**Encouraging the use of new technology and knowledge sharing programs among the people at the university**” under **strategic environmental scanning** subscale had the **maximum** importance from the perspective of respondents in Malaysian HE system and public research & comprehensive HEIs.
- The item “**Providing information showing how similar work units or competitors have better performance**” under **supporting organizational culture** subscale had the **minimum** importance from the perspective of respondents in Malaysian HE system and its sectors.
- The item “**Building confidence among the people that they will be successful in implementing change programs**” under **supporting organizational culture** subscale had the **maximum** importance from the perspective of respondents in Malaysian HE system, public research & comprehensive HEIs, and public focused HEIs.
- The item “**Being willing to take risks in decisions**” under **thinking out of the box** subscale had the **minimum** importance from the perspective of respondents in Malaysian HE system and public research & comprehensive HEIs.
- The item “**Seeing possibilities rather than problems**” under **thinking out of the box** subscale had the **maximum** importance

from the perspective of respondents in Malaysian HE system, public research & comprehensive HEIs, and private focused HEIs.

- The item “**Avoiding taking actions that can divert attention from innovative solutions**” under **having clear objective focus** subscale had the **minimum** importance from the perspective of respondents in Malaysian HE system and its sectors.
- The item “**Avoiding the development of visions based on false assumptions**” under **having clear objective focus** subscale had the **maximum** importance from the perspective of respondents in Malaysian HE system and its sectors.
- The item “**Communicating the vision with colorful and emotional language**” under **overcoming obstacles** subscale had the **minimum** importance from the perspective of respondents in Malaysian HE system and its sectors.
- The item “**Making quick decisions when necessary**” under **overcoming obstacles** subscale had the **maximum** importance from the perspective of respondents in Malaysian HE system and its sectors.
- The item “**Being able to use IT effectively to communicate and perform key work functions and enhance my professional development**” under **being performance driven** subscale had the **minimum** importance from the perspective of respondents in Malaysian HE system and its sectors.
- The item “**Being able to organize my work and manage time effectively**” under **being performance driven** subscale had the

maximum importance from the perspective of respondents in Malaysian HE system and its sectors.

- The item “**Understanding the role of risk management and litigation in my work**” under **understanding operations and risks** subscale had the **minimum** importance from the perspective of respondents in Malaysian HE system, public focused HEIs, and private focused HEIs.
- The item “**Understanding how universities operate**” under **understanding operations and risks** subscale had the **maximum** importance from the perspective of respondents in Malaysian HE system and its sectors.
- The item “**Knowing how to identify and disseminate good learning and management practice across the unit or university**” under **benchmarking standards and practices** subscale had the **minimum** importance from the perspective of respondents in Malaysian HE system, public research & comprehensive HEIs, and public focused HEIs.
- The item “**Understanding how to develop and evaluate an effective higher education learning program**” under **benchmarking standards and practices** subscale had the **maximum** importance from the perspective of respondents in Malaysian HE system, public research & comprehensive HEIs, and public focused HEIs.
- The item “**Winning learning and teaching awards and prizes**” under **recognition and prestige** subscale had the **minimum**

importance from the perspective of respondents in Malaysian HE system and its sectors.

- The item “**Delivering agreed tasks or projects on time and to specification**” under **recognition and prestige** subscale had the **maximum** importance from the perspective of respondents in Malaysian HE system and its sectors.
- The item “**Enhanced representation of equity groups**” under **academic professional excellence** subscale had the **minimum** importance from the perspective of respondents in Malaysian HE system and its sectors.
- The item “**Establishing a collegial working environment**” under **academic professional excellence** subscale had the **maximum** importance from the perspective of respondents in Malaysian HE system and public research & comprehensive HEIs.

Additionally, in Table 5.1, the mean scores at scale and instrument levels in the 4 different contexts have been presented.

Table 5.1
The Mean scores at Scale and Instrument Levels

Scale	HE System (N=368)	Public Research & Comprehensive HEIs (N=196)	Public Focused HEIs (N=94)	Private Focused HEIs (N=78)
Personal Capability	4.350	4.353	4.355	4.337
Interpersonal Capability	4.327	4.337	4.348	4.275
Cognitive Capability	4.347	4.351	4.330	4.360
Change-oriented Capability	4.102	4.133	4.099	4.029
Generic Competency	4.324	4.342	4.347	4.251
Role-specific Competency	4.335	4.355	4.344	4.276
Leadership Performance	4.206	4.254	4.198	4.094
Average at Instrument Level	4.285	4.304	4.289	4.232

The maximum and minimum mean scores are in **boldface**.

Focusing on Malaysian HE system, the examination of the mean scores at scale level revealed that personal capability had the maximum (M=4.350) and change-oriented capability had the minimum (M=4.102) mean scores.

With respect to Malaysian public research & comprehensive HEIs, role-specific competency with a mean score of 4.355 and change-oriented capability with a mean score of 4.133 were the scales with the maximum and minimum mean scores, respectively.

Regarding Malaysian public focused HEIs, the examination of Table 5.1 showed that personal capability was the scale with maximum mean score (M= 4.355) and change-oriented capability was the one with the minimum mean score (M=4.099).

Respecting Malaysian private focused HEIs, cognitive capability with the mean score of 4.360 and change-oriented capability with the mean score of 4.029 were identified as the scales with maximum and minimum mean scores, respectively. It is noticeable that these two mean scores were the maximum and minimum mean scores in Table 5.1 as well.

Also, the examination of the mean scores at instrument level revealed that the mean score in the context of Malaysian public research & comprehensive HEIs (M=4.304) was the maximum mean score and the mean score in the context of Malaysian private focused HEIs (M=4.232) was the minimum mean score.

research question 2.

research question 2-i. The scales developed through the pilot study were used to collect data. Upon completion of data collection, data screening was performed, followed by outer models evaluation using SmartPLS 3. Through this procedure, as

suggested by Hair et al. (2014), Cronbach's Alpha, composite reliability, convergent validity, and discriminant validity were established. It is noticeable that discriminant validity was established on the basis of the newly introduced criterion known as HTMT criterion (Henseler et al., 2015). Thereafter, inner or structural model of the path model was evaluated on the basis of the guidelines proposed by Hair et al. (2014). This procedure was started by evaluating collinearity among the exogenous constructs, followed by the evaluation of path coefficients, the evaluation of R^2 as the coefficient of determination and its adjusted version for the endogenous constructs in the path model, the examination of f^2 effect sizes for the exogenous constructs, the assessment of Q^2 as the model's predictive relevance for the endogenous constructs, and the examination of q^2 effect sizes for the exogenous constructs.

With respect to the model developed on the grounds of the aggregate data for the entire Malaysian HE system, only the path from cognitive capability towards leadership performance was identified as a non-significant path, leading to elimination of this type of leadership capability from the model. On the other hand, the paths from the following exogenous constructs towards leadership performance were significant:

- Personal capability (making decisions and judgments) with 5 items.
- Interpersonal capability (sharing information and data) with 6 items.
- Change-oriented capability with 3 subscales namely strategic environmental scanning (7 items), supporting organizational culture (6 items), and thinking out of the box (5 items).
- Generic competency with 2 subscales namely being performance driven (4 items) and understanding operations and risks (4 items).

- Role-specific competency (benchmarking standards and practices) with 4 items.

Next, the model was evaluated for the existence of unobserved heterogeneity within the data. For this aim, FIMIX-PLS (Hair et al., 2014; Hair et al., 2016; Matthews et al., 2016) was employed. The results of this analysis shed light on the fact that the overlap between the FIMIX-PLS partitions and the partitions produced by current tenure as one of the categorical variables with five classes was well above 60 percent (66.47%). Hence, as suggested by Hair et al. (2014), current tenure was considered for further analysis due to their managerial relevance. Consequently, low-current-tenure leaders model and high-current-tenure leaders model, which had been developed based on the results of FIMIX-PLS, were evaluated.

Focusing on low-current-tenure leaders model, the paths from the following exogenous constructs to leadership performance were identified as significant.

- Interpersonal capability (sharing information and data) with 6 items.
- Change-oriented capability with 3 subscales namely strategic environmental scanning (6 items), supporting organizational culture (6 items), and thinking out of the box (4 items).
- Generic competency with 2 subscales namely being performance driven (4 items) and understanding operations and risks (4 items).
- Role-specific competency (benchmarking standards and practices) with 4 items.

Also, regarding high-current-tenure leaders model, the results showed that only the paths from change-oriented capability and role-specific competency were significant:

- Change-oriented capability with 3 subscales namely strategic environmental scanning (6 items), supporting organizational culture (4 items), and thinking out of the box (5 items).
- Role-specific competency (benchmarking standards and practices) with 4 items.

Table 5.2 summarizes the path coefficients of the models developed on the grounds of FIMIX-PLS.

Table 5.2
Path Coefficients of the Models in Malaysian HE

Construct	Coefficient	
	Low-Current-Tenure Leaders Model	High-Current-Tenure Leaders Model
Change-oriented	0.224	0.458
Generic	0.215	****
Interpersonal	0.170	****
Role-specific	0.313	0.378

Based on this information, role-specific competency had the greatest effect on leadership performance in low-current-tenure leaders model and interpersonal capability had the smallest effect. Regarding high-current-tenure leaders model, change-oriented capability and role-specific competency had the greatest and smallest effects on leadership performance, respectively.

FIMIX-PLS was followed by IPMA, as a recommended complementary analysis, to highlight the major areas of improvement to be addressed by management

activities (Hair et al., 2014). This analysis uncovered that in low-current-tenure leaders model, role-specific competency had the maximum importance to be focused for improvement, followed by generic competency, change-oriented capability, and interpersonal capability. Focusing on high-current-tenure leaders model, the results shed light on the fact that change-oriented capability, comparing with role-specific competency, was a more important construct for improvement.

research question 2-ii. The same instruments as the ones used in answering research question 2-i were utilized to collect data. Upon completion of data collection, data screening was performed, followed by outer models and inner model evaluation procedures proposed by Hair et al. (2014). All the quality criteria, as discussed in details in chapter 4, were met. It is noticeable that in order to assess discriminant validity, the newly introduced criterion known as HTMT criterion (Henseler et al., 2015) was used.

Focusing on the model developed based on the aggregate data in the context of Malaysian public research & comprehensive HEIs, the results implied that the paths from personal and cognitive capabilities towards leadership performance were non-significant, leading to elimination of these constructs from the model. On the other hand, the paths from the following exogenous constructs towards the endogenous construct were significant:

- Interpersonal capability (sharing information and data) with 6 items.
- Change-oriented capability with 4 subscales namely strategic environmental scanning (7 items), supporting organizational culture (4 items), thinking out of the box (4 items), and having clear objective focus (3 items).

- Generic competency with 2 subscales namely being performance driven (4 items) and understanding operations and risks (4 items).
- Role-specific competency (benchmarking standards and practices) with 3 items.

Thereafter, the model was assessed for the existence of unobserved heterogeneity within the data (Hair et al., 2014; Hair et al., 2016; Matthews et al., 2016).

The results of this analysis disclosed that the data categorized by leadership level had an overlap of 66 percent with the data partitioned using FIMIX-PLS module in SmartPLS 3. Hence, as suggested by Hair et al. (2014), leadership level was considered for further analysis due to its managerial relevance.

Subsequently, university-faculty level leaders model and department-individual professorial level leaders model, developed on the grounds of the results of FIMIX-PLS, were estimated.

Focusing on university-faculty level leaders model, only the paths from generic and role-specific competencies towards leadership performance were significant paths, as explained below.

- Generic competency with 2 subscales namely being performance driven (3 items) and understanding operations and risks (3 items).
- Role-specific competency (benchmarking standards and practices) with 3 items.

Additionally, the examination of the department-individual professorial level leaders model disclosed that the paths from the following exogenous constructs towards leadership performance were significant.

- Interpersonal capability (sharing information and data) with 6 items.
- Change-oriented capability with 4 subscales namely strategic environmental scanning (7 items), supporting organizational culture (4 items), thinking out of the box (4 items), having clear objective focus (3 items).
- Role-specific competency (benchmarking standards and practices) with 2 items.

Table 5.3 summarizes the path coefficients of the models developed on the grounds of FIMIX-PLS.

Table 5.3
Path Coefficients of the Models Developed in Malaysian Public Research & Comprehensive HEIs

Construct	Coefficient	
	University-Faculty Level Leaders Model	Department-Individual Professorial Level Leaders Model
Generic	0.480	****
Role-specific	0.329	0.337
Change-oriented	****	0.372
Interpersonal	****	0.292

On the grounds of this information, generic competency, comparing with role-specific competency, had a greater effect on leadership performance in university-faculty level leaders model. Regarding department-individual professorial level leaders model, the analysis showed that change-oriented capability had the greatest

effect on the endogenous construct in the model, followed by role-specific competency and interpersonal capability.

Thereafter, IPMA was run to highlight the major areas of improvement to be addressed by management activities (Hair et al., 2014). This analysis revealed that in university-faculty level leaders model, although both exogenous constructs had almost the same level of performance, generic competency was more important to be focused for improvement. Regarding department-individual professorial level leaders model, the results disclosed that change-oriented capability had the maximum importance, followed by interpersonal capability and role-specific competency.

research question 2-iii & 2-iv. As explain in the previous chapter, the collected data in the context of Malaysian public focused HEIs and Malaysian private focused HEIs were merged to enable the researcher estimate the model more accurately in one context namely Malaysian public and private HEIs. Next, the data were screened to detect outlying cases as well as cases with undue influence over the analysis.

This procedure was followed by outer and inner models evaluation using SmartPLS 3. All of the quality criteria to evaluate these models, as proposed by Hair et al. (2014), were met. It is noticeable that through this procedure, discriminant validity was assessed on the basis of HTMT criterion (Henseler et al., 2015).

With respect to the model developed on the grounds of the aggregate data in the context of Malaysian public and private focused HEIs, running bootstrapping routine revealed that the paths from personal, interpersonal, and cognitive capabilities towards leadership performance were not significant. Thus, these exogenous

constructs were excluded from the model. On the other hand, the paths from the following exogenous constructs towards the endogenous construct were significant:

- Change-oriented capability with 3 subscales namely strategic environmental scanning (5 items), supporting organizational culture (5 items), and thinking out of the box (3 items).
- Generic competency with 2 subscales namely being performance driven (4 items) and understanding operations and risks (3 items).
- Role-specific competency (benchmarking standards and practices) with 4 items.

Then, the existence of unobserved heterogeneity within the data was assessed using FIMIX-PLS (Hair et al., 2014; Hair et al., 2016; Matthews et al., 2016). This procedure yielded no sign of unobserved heterogeneity problems, confirming the validity of the developed model. In Table 5.4, the path coefficients of the developed model have been presented.

Table 5.4
Path Coefficients of the Model in Malaysian Public and Private Focused HEIs

Paths	Original Sample	T Statistics	P Values
Change-Oriented -> Performance	0.346	3.954	0.000
Generic -> Performance	0.262	2.780	0.006
Role-specific -> Performance	0.272	3.310	0.001

Next, IPMA was run to identify the major areas of improvement to be addressed by management activities (Hair et al., 2014). Through this analysis, it was disclosed that change-oriented capability had the maximum importance, followed by generic and role-specific competencies in terms of determining leadership performance as the target construct.

research question 3.

research question 3-i. To answer this question, data were collected from more than 200 academic leaders through an open-ended question pertinent to the work priorities. Data screening procedure was carried out and then, the records or text data were categorized on the grounds of thematic analysis using ATLAS.ti 7. Then, SPSS 23 was used to perform descriptive statistical analysis to identify the main priorities in Malaysian HE system and its sectors from the points of view of the sampled academic leaders.

Regarding the entire HE system, the results showed that the top five priorities in Malaysian HE system were exactly analogous to the top priorities in the context of Malaysian public research & comprehensive HEIs sector. These priorities were Achieving Goals, KPIs, & Standards, Teaching & Delivering Programs, Undertaking Research, Producing Publications, and Finance, Budgeting, Grants, & Fundraising. The evaluation of the priorities also revealed that Achieving Goals, KPIs, & Standards, Teaching & Delivering Programs, Undertaking Research, and Producing Publications were the top common priorities in the context of Malaysian public research & comprehensive as well as public focused HEIs. Regarding Malaysian private focused HEIs, Monitoring, Teaching & Delivering Programs, Undertaking Research, and Staff Development, Empowerment, & Expertise were identified as the top priorities of academic leaders in this context. The top 5 priorities of the sampled academic leaders in Malaysian HE system and its sectors have been summarized in Table 5.5.

Table 5.5
Top Five Work Priorities in Malaysian HE and Its Sectors

Rank	Malaysian HE System (N=248)	Frequency
1	Achieving Goals, KPIs, & Standards	89
2	Teaching & Delivering Programs	70
3	Undertaking Research	67
4	Producing Publications	55
5	Finance, Budgeting, Grants, & Fundraising	41
Rank	Malaysian Public Research & Comprehensive HEIs (N= 139)	Frequency
1	Achieving Goals, KPIs, & Standards	51
2	Teaching & Delivering Programs	42
3	Undertaking Research	38
4	Producing Publications	36
5	Finance, Budgeting, Grants, & Fundraising	28
Rank	Malaysian Public Focused HEIs (N= 64)	Frequency
1	Achieving Goals, KPIs, & Standards	30
2	Undertaking Research	14
3	Teaching & Delivering Programs	13
4	Producing Publications	12
5	Students Learning	11
Rank	Malaysian Private Focused HEIs (N= 45)	Frequency
1	Monitoring	18
2A	Teaching & Delivering Programs	15
2B	Undertaking Research	15
3	Staff Development, Empowerment, & Expertise	10
4	Performing Department & Faculty Routines	9
5A	Achieving Goals, KPIs, & Standards	8
5B	Staff Affairs Management	8

research question 3-ii. Data were collected from more than 200 academic leaders through one open-ended question associated with their values. Upon completion of this step, data screening procedure was undertaken, followed by categorizing the records or text data using ATLAS.ti 7. After categorization of the data, SPSS 23 was used to carry out descriptive statistical analysis to identify the main values in Malaysian HE system and its sectors from the viewpoints of the sampled academic leaders.

The evaluation of values showed that the top five values in Malaysian HE system were exactly analogous to the top five values in the context of public research & comprehensive HEIs. Even the order of them was the same. These top five values were Honesty & Integrity, Trustworthiness, Truthfulness, & Sincerity, Commitment,

Passion, & Loyalty, Hard-working, Diligence, & Persistence, and Team-working. Focusing on the HE sectors, it was found that Honesty & Integrity, Trustworthiness, Truthfulness, & Sincerity, Commitment, Passion, & Loyalty, and Hard-working, Diligence, & Persistence were the top values in both Malaysian public research & comprehensive as well as public focused HEIs sectors. In addition, Honesty & Integrity, Kindness, Empathy, & Sympathy, General Skills & Knowledge, and Commitment, Passion, & Loyalty were the top four values in the context of Malaysian private HE sector. It is noticeable that the evolution of the values with top frequencies shed light on the fact that the top four values in the contexts of public research & comprehensive HEIs and public focused HEIs were the same. In Table 5.6, the top 5 values of the sampled respondents in the context of Malaysian HE system and its sectors have been displayed.

Table 5.6
Top Five Work Values in Malaysian HE and Its Sectors

Rank	Malaysian HE System (N= 247)	Frequency
1	Honesty & Integrity	127
2	Trustworthiness, Truthfulness, & Sincerity	72
3	Commitment, Passion, & Loyalty	65
4	Hard-working, Diligence, & Persistence	56
5A	Team-working	36
5B	Kindness, Empathy, & Sympathy	36
Rank	Malaysian Public Research & Comprehensive HEIs (N= 139)	Frequency
1	Honesty & Integrity	76
2	Trustworthiness, Truthfulness, & Sincerity	42
3	Commitment, Passion, & Loyalty	41
4	Hard-working, Diligence, & Persistence	36
5A	Team-working	22
5B	Responsibility	22
5C	Patience & Tolerance	22
Rank	Malaysian Public Focused HEIs (N= 62)	Frequency
1	Honesty & Integrity	31
2	Trustworthiness, Truthfulness, & Sincerity	25
3	Commitment, Passion, & Loyalty	17
4	Hard-working, Diligence, & Persistence	14
5	Professional Development Training & Continuous Improvement	13
Rank	Malaysian Private Focused HEIs (N= 46)	Frequency
1	Honesty & Integrity	20
2	Kindness, Empathy, & Sympathy	10
3A	General Skills & Knowledge	7
3B	Commitment, Passion, & Loyalty	7
3C	Creativity & Innovation	7

Table 5.6 continued		
3D	Fairness, Equity, & Equality	7
4A	Achieving Goals, KPIs, & Standards	6
4B	Recognition, Image, & Rank	6
4C	Hard-working, Diligence, & Persistence	6
5A	Punctuality & Timeliness	5
5B	Leading Academic & Non-academic Staff	5
5C	Communication	5
5D	Respect, Honor, & Dignity	5
5E	Trustworthiness, Truthfulness, & Sincerity	5
5F	Accountability	5
5G	Discipline	5

research question 3-iii. To answer this question, data were collected through an open-ended question related to the challenges in Malaysian HE. More than 200 academic leaders answered this question. After data collection, data screening procedure was run and then, a thematic approach was adopted to categorize the records or text data using ATLAS.ti 7. Next, SPSS 23 was used to perform descriptive statistics to identify the main challenges in Malaysian HE system and its sectors from the perspectives of the respondents.

The examination of the results showed that the inefficiencies and shortages related to five issues including Finance, Budgeting, Grants, & Fundraising, Staff Affairs Management, Time Management, Achieving Goals, KPIs, & Standards, and Proper Workload & Assignments were common challenges in the entire HE system and Malaysian public focused HEIs. In addition, deficiencies related to Finance, Budgeting, Grants, & Fundraising, Staff Affairs Management, Time Management, and Achieving Goals, KPIs, & Standards were identified as the four common challenges in all the three sectors of Malaysian HE system.

In Table 5.7, the top 5 challenges in Malaysian HE system and its sectors have been presented. In other words, inefficiencies related to these areas have been proposed by the respondents as the main challenges.

Table 5.7
Top Five Work Challenges in Malaysian HE and Its Sectors

Rank	Malaysian HE System (N= 244)	Frequency
1	Staff Affairs Management	84
2	Finance, Budgeting, Grants, & Fundraising	82
3	Time Management	48
4	Achieving Goals, KPIs, & Standards	37
5	Proper Workload & Assignments	30
Rank	Malaysian Public Research & Comprehensive HEIs (N= 139)	Frequency
1	Finance, Budgeting, Grants, & Fundraising	55
2	Staff Affairs Management	47
3A	Maintaining Infrastructures & Facilities	24
3B	Time Management	24
4	Achieving Goals, KPIs, & Standards	20
5A	Staff Development, Empowerment, & Expertise	17
5B	Proper Workload & Assignments	17
5C	Reducing Red Tape & Bureaucracy	17
Rank	Malaysian Public Focused HEIs (N= 59)	Frequency
1A	Finance, Budgeting, Grants, & Fundraising	17
1B	Staff Affairs Management	17
2	Time Management	12
3A	Achieving Goals, KPIs, & Standards	10
3B	Proper Workload & Assignments	10
4	Commitment, Passion, & Loyalty	9
5	Receiving & Providing Support	8
Rank	Malaysian Private Focused HEIs (N= 46)	Frequency
1	Staff Affairs Management	20
2	Time Management	12
3	Finance, Budgeting, Grants, & Fundraising	10
4	Collaboration & Cooperation	8
5	Achieving Goals, KPIs, & Standards	7

research question 3-iv. Data were collected through an open-ended question associated with the solutions to the Malaysian HE challenges. The data were collected from more than 200 academic leaders. The collected data were screened and purified and then were categorized using ATLAS.ti 7. After categorization of the data, SPSS 23 was used to for identifying the main solutions in Malaysian HE system and its sectors from the perspectives of the sampled leaders.

With respect to the solutions, the results shed light on the fact that the top five solutions for the entire HE system were the same as the top five solutions in the context of Malaysian public research & comprehensive HEIs. These solutions were enhancements regarding to Finance, Budgeting, Grants, & Fundraising, Professional

Development Training & Continuous Improvement, Staff Affairs Management, Communication, and Discussion & Dialogue. Additionally, improvements related to Finance, Budgeting, Grants, & Fundraising, Staff Affairs Management, and Professional Development Training & Continuous Improvement were the top three common solutions proposed by the respondents in Malaysian HE system and its sectors.

In Table 5.8, the top 5 solutions proposed by the sampled academic leaders in Malaysian HE system and its sectors have been displayed. As a matter of fact, improvements and enhancements in these areas have been proposed by the respondents as the main solutions.

Table 5.8
Top Five Work Solutions in Malaysian HE and Its Sectors

Rank	Malaysian HE System (N= 236)	Frequency
1	Finance, Budgeting, Grants, & Fundraising	57
2	Professional Development Training & Continuous Improvement	53
3	Staff Affairs Management	52
4A	Communication	30
4B	Discussion & Dialogue	30
5	Time Management	28
Rank	Malaysian Public Research & Comprehensive HEIs (N= 135)	Frequency
1	Finance, Budgeting, Grants, & Fundraising	38
2	Staff Affairs Management	28
3	Professional Development Training & Continuous Improvement	27
4	Communication	20
5	Discussion & Dialogue	19
Rank	Malaysian Public Focused HEIs (N= 57)	Frequency
1	Professional Development Training & Continuous Improvement	16
2	Staff Affairs Management	15
3	Finance, Budgeting, Grants, & Fundraising	10
4A	Providing Consultation	6
4B	Time Management	6
4C	Politics	6
4D	Discussion & Dialogue	6
4E	Proper Workload & Assignments	6
5A	Receiving & Providing Support	5
5B	Staff Development, Empowerment, & Expertise	5
5C	Persuasion, Motivation, & Inspiration	5
5D	Leading Academic & Non-academic Staff	5
5E	Target Setting	5
5F	Policy Issues	5
Rank	Malaysian Private Focused HEIs (N= 44)	Frequency
1	Professional Development Training & Continuous Improvement	10
2A	Finance, Budgeting, Grants, & Fundraising	9

Table 5.8 continued		
2B	Staff Affairs Management	9
2C	Time Management	9
3	Communication	7
4	Creating a Conducive & Convenient Environment	6
5	Discussion & Dialogue	5

Discussion

Given the importance of HE in Malaysia especially in terms of economics (Karim & Maarof, 2013), pertinent questions and concerns have raised regarding the qualities of academic leaders in managing and leading universities in tandem with professionalizing them through developmental programs. To answer these questions, the current study focused on identifying the main qualities of Malaysian academic leaders which contribute to their leadership performance in HE system and its sectors. The identified qualities can be used to update leadership and management professional development programs.

It is noticeable that Malaysian universities have been categorized into 4 major groups namely public research universities, public comprehensive universities, public focused universities, and private focused universities. In this study, since public comprehensive universities are highly research-oriented, both categories of public research universities and public comprehensive universities were merged to form a new category labeled public research & comprehensive HEIs. It is worth noting that two sectors namely public focused HEIs and private focused HEIs were also merged to maintain required sample size as well as to generate reliable and valid statistics in answering research question 2.

Through this study, a few models for the contribution of leadership capabilities and managerial competencies in Malaysian HE system and its sectors were developed.

As will be discussed in the following subsections, these models were supported considerably by the results of the analysis of open-ended questions.

Focusing on leadership capabilities, contrary to the discussions made by Scott et al. (2008), Fullan and Scott (2009), Scott and McKellar (2012), and Scott et al. (2012), personal capability was not a significant determinant of leadership performance in Malaysian HE system and its sectors. In other words, although as cited by Scott et al. (2008), personal and interpersonal capabilities, which are often referred to as a leader's emotional intelligence (Goleman, 1998, 2000), have been focused in the area of HE leadership (Aziz et al., 2005; Gmelch, 2002; Martin, Trigwell, Prosser, & Ramsden, 2003; Montez, 2003; Ramsden, 1998a), no strong evidence for the contribution of personal capability to leadership performance in Malaysian HE system as well as its sectors was found. This finding was supported by the results of the descriptively analyzed qualitative data collected from more than 200 Malaysian academic leaders regarding work priorities and values. In fact, the descriptive analysis showed that "Decision Making" as the manifest of personal capability, which was discussed in chapter three, was not among the main priorities and values of Malaysian academic leaders. Additionally, inefficient decision making had been proposed by Malaysian academic leaders as one of the main challenges in public focused HEIs as well as private focused HEIs. Moreover, interpersonal capability was not identified as a significant construct to explain leadership performance in all the developed models. Regarding cognitive capability, even though according to CRT (Fiedler, 1986; Fiedler & Garcia, 1987), leaders' experience and intelligence as their cognitive resources contribute to leadership performance, cognitive capability of academic leaders (Goleman, 2000; Scott, 1999) was not recognized as a significant predictor of

leadership performance in the models developed in the context of Malaysian HE and its sectors.

With respect to change-oriented capability (Arvonen, 2008; Ekvall, 1991; Ekvall & Arvonen, 1991, 1994; Yukl, 1999, 2004, 2012, 2013; Yukl et al., 2002) and as it was expected, the results of the analysis did confirm the pivotal role of this type of leadership capability as the main construct, comparing with other constructs in the developed models, to explain leadership performance in academic settings. On the other hand, this construct was not significant only in the model of university-faculty level leaders in the context of Malaysian public research & comprehensive HEIs.

As a comparison between leadership capabilities in terms of explaining leadership performance in academic settings, the results of the analysis shed light on the fact that change-oriented capability deemed to be the most pertinent leadership style to be practiced by academic leaders.

Centering around managerial competencies, the results of the analysis revealed that role-specific competency was the only significant construct in all the developed models in this study, indicating the importance of this type of competency in Malaysian academic settings. It is notable that generic competency was also a significant predictor of leadership performance in some of the developed models. In conclusion, this supported the inclusion of both generic and role-specific competencies in Academic Leadership Capability Framework based on the data which had been collected in Malaysia.

Another important issue which is merited to be acknowledged in the discussion section is that almost all the encouraged practices through NHESP were supported by

the items in the developed models, the identified categories of priorities and values, or both the items as well as the categories. For instance, “Improving the curriculum periodically”, “Making national policies on the relation between industries and universities”, and “Facilitating and providing the best delivery systems” as three encouraged practices, were consistent with the items “Understanding how to develop and evaluate an effective higher education learning program”, “Understanding of industrial relations issues and processes as they apply to higher education”, “Delivering successful team projects in learning and teaching”, respectively. Also, “Widening the usage of English language”, “Appointing top management of public universities based on merit”, “Collaborative networking with foreign universities “and “Improving the rankings of universities”, as another four encouraged practices, were in alignment with the categories of “General Skills & Knowledge”, “Appointment, Promotion, & Meritocracy”, “Collaboration & Cooperation”, and “Recognition, Image, & Rank”, correspondingly.

In the following subsections, the main findings through research question 1 to research question 3 have been discussed in more details in Malaysian HE system and its sectors.

Malaysian entire HE system. Malaysian entire HE system was focused in research questions 1, 2-i, and 3 in this study. The results of the analysis through research question 1 did imply that personal capability had the maximum mean score and change-oriented capability had the minimum mean score in the context of Malaysian HE system on the grounds of the viewpoints of the respondents. However, the outcome of the analysis through research question 2-i showed that personal and cognitive capabilities were not significant determinant of leadership performance in

the model of low-current-tenure leaders. Focusing on high-current-tenure leaders model, personal, interpersonal, and cognitive capabilities as well as generic competency were identified as non-significant constructs. Whether the developed models through this research question were valid was reinvestigated by contrasting each items of the developed models with the categories of priorities and values produced through research question 3.

The result of this procedure displayed in Table 5.9 shed light on the fact that the models developed based on the data collected from the respondents in Malaysian HE system were valid. As a matter of fact, only one item (Seeing possibilities rather than problems), which was related to optimism, was not supported by the categories displayed in Tables 4.56 and 4.62, suggesting that the models had been supported to a considerable degree by the qualitative data.

Table 5.9
Items of the Main Model Developed in the Context of Malaysian HE System with Supporting Qualitative Data

Item Code	Item	Supporting Priority &/or Value
SID_01	Giving and receiving constructive feedback to/from work colleagues and others	Communication
SID_03	Empathizing and working productively with students from a wide range of backgrounds	Students Affairs Management
SID_04	Empathizing and working productively with staff and other key players from a wide range of backgrounds	Staff Affairs Management
SID_05	Listening to different points of view before coming to a decision	Communication - Openness & Open-mindedness
SID_06	Developing and contributing positively to team-based programs	Team-working
SID_09	Motivating others to achieve positive outcomes	Persuasion, Motivation, & Inspiration - Achieving Goals, KPIs, & Standards
SES_02	Monitoring the external environment more when the university is highly dependent on outsiders, faces severe competition and the environment is rapidly changing	Monitoring - Change & Transformation
SES_03	Using more accurate, shared mental models to make strategic decisions or performance improvements	Planning - Professional Development Training & Continuous Improvement
SES_04	Explaining about undesirable outcomes that are likely to occur if new opportunities are exploited by competitors	Appreciation, Awareness, & Consciousness
SES_05	Influencing how new knowledge or a new technology is diffused and applied in the university by explaining why it is important	General Skills & Knowledge - Appreciation, Awareness, & Consciousness

Table 5.9 continued		
SES_06	Identifying environmental threats and opportunities for the university and interpreting the collected information	Monitoring - Appreciation, Awareness, & Consciousness
SES_08	Helping the people to better recognize failures	Staff Development, Empowerment, & Expertise
SES_09	Encouraging the use of new technology and knowledge sharing programs among the people at the university	Persuasion, Motivation, & Inspiration
SOC_01	Explaining why the change is necessary and needed	Change & Transformation
SOC_02	Creating a climate of psychological safety and mutual trust in the university	Creating a Conductive & Convenient Environment - Trustworthiness, Truthfulness, & Sincerity
SOC_03	Creating an organizational culture that values creativity and entrepreneurial activities	Creating a Conductive & Convenient Environment - Creativity & Innovation
SOC_04	Providing information showing how similar work units or competitors have better performance	Providing Consultation
SOC_05	Providing resources for the people to increase learning from mistakes and failures	Professional Development Training & Continuous Improvement
SOC_06	Building confidence among the people that they will be successful in implementing change programs	Confidence - Change & Transformation
TOB_01	Being willing to take risks in decisions	Determination, Firmness, & Decisiveness
TOB_02	Offering ideas about new and different ways of doing things and accepting innovative proposals	Creativity & Innovation - Openness & Open-mindedness
TOB_03	Seeing possibilities rather than problems	****
TOB_04	Liking and encouraging to discuss new ideas	Persuasion, Motivation, & Inspiration - Creativity & Innovation
TOB_05	Supporting the activities to facilitate learning and acquire new knowledge from research, small-scale experiments and external resources	Receiving & Providing Support - Professional Development Training & Continuous Improvement - General Skills & Knowledge
BPD_01	Being able to organize my work and manage time effectively	Time Management
BPD_02	Being able to make effective presentations to a range of different groups	Communication
BPD_03	Having sound administrative and resource management skills	General Skills & Knowledge
BPD_04	Being able to use IT effectively to communicate and perform key work functions and enhance my professional development	General Skills & Knowledge - Communication - Professional Development Training & Continuous Improvement
UOR_01	Understanding of industrial relations issues and processes as they apply to higher education	Industry-University Linkage
UOR_02	Being able to help my staff learn how to deliver necessary changes effectively	Staff Development, Empowerment, & Expertise - Change & Transformation
UOR_03	Understanding the role of risk management and litigation in my work	General Management
UOR_04	Understanding how universities operate	General Management
BSP_01	Understanding how to develop and evaluate an effective higher education learning program	Designing, Accrediting, & Updating Programs & Contents
BSP_02	Knowing how to identify and disseminate good learning and management practice across the unit or university	Communication
BSP_03	Having a high level of up-to-date knowledge of what engages university students in productive learning	General Skills & Knowledge - Students Learning
BSP_04	Being on top of current developments in learning and teaching	Professional Development Training & Continuous Improvement
RP_01	Achieving positive outcomes from external reviews of the area	Recognition, Image, & Rank
RP_02	Securing competitive funds related to learning and teaching as well as to the area of responsibility	Finance, Budgeting, Grants, & Fundraising
RP_09	Receiving positive user feedback for your area of responsibility	Recognition, Image, & Rank

Table 5.9 continued		
RP_10	Delivering agreed tasks or projects on time and to specification	Punctuality & Timeliness
RP_11	Successful implementation of new initiatives	Change & Transformation
APE_02	Improving student satisfaction ratings for learning and teaching	Satisfaction, Happiness, & Enjoyment
APE_03	Enhanced representation of equity groups	Fairness, Equity, & Equality
APE_06	Producing successful learning systems or infrastructures	Maintaining Infrastructures & Facilities
APE_07	Delivering successful team projects in learning and teaching	Teaching & Delivering Programs - Students Learning
APE_08	Producing future learning and teaching leaders	Leading Academic & Non-academic Staff

Also, the comparison between the models of low-current-tenure leaders and high-current-tenure leaders, as the outputs of FIMIX-PLS in the context of Malaysian HE system, showed that in the model of low-current-tenure leaders, role-specific competency had the maximum effect on the endogenous variable (leadership performance) while in the model of high-current-tenure leaders, change-oriented capability was the dominant construct in explaining leadership performance. This relatively did imply that low-current-tenure leaders were more management-oriented whereas those in the category of high-current-tenure leaders were more leadership-oriented.

It is noticeable that most the items were also supported by the literature on academic leadership. For instance, “Listening to different points of view before coming to a decision” has been addressed by Fullan and Scott (2009) and the item “Having sound administrative and resource management skills” has been emphasized by Ramsden (1998b). Also items “Providing resources for the people to increase learning from mistakes and failures”, “Being able to use IT effectively to communicate and perform key work functions and enhance my professional development”, “Being able to help my staff learn how to deliver necessary changes effectively” have been stressed by Black (2015). In addition, the items “Monitoring the external environment

more when the university is highly dependent on outsiders, faces severe competition and the environment is rapidly changing”, “Identifying environmental threats and opportunities for the university and interpreting the collected information”, “Producing successful learning systems or infrastructures”, and “Delivering successful team projects in learning and teaching” have been proposed by Asif and Searcy (2013) as the required qualities for academic leaders. Lastly, the items “Having a high level of up-to-date knowledge of what engages university students in productive learning” and “Securing competitive funds related to learning and teaching as well as to the area of responsibility” have been emphasized by Black (2015) and Asif and Searcy (2013).

Malaysian public research & comprehensive HEIs. In this study, Malaysian public research & comprehensive HEIs were focused in research question 1, 2-ii, and 3. The results of research question 1 showed that role-specific competency had the maximum mean score and change-oriented capability had the minimum mean score from the viewpoints of the respondents in the context of public research & comprehensive HEIs. In addition, the results of running PLS algorithm through research question 2-ii confirmed the prominence of role-specific competency in explaining leadership performance in this context. As a matter of fact, the outcome of FIMIX-PLS through research question 2-ii indicated that all types of leadership capabilities were non-significant in explaining leadership performance in university-faculty level leaders model in the context of Malaysian public research & comprehensive HEIs. This denoted that managerial activities were dominant rather than leadership practices in this context. Regarding department-individual professorial level leaders model, the results were totally different. In other words, personal and cognitive capabilities as well as generic competency were identified as non-significant constructs and were eliminated from the model which had been developed based on

the data collected from respondents in public research & comprehensive HEIs. Table 5.10 has summarized the results of contrasting of each items of the developed models in this context with the categories of priorities and values produced through research question 3. Based on this information, only three items were not supported by the categories displayed in Tables 4.57 and 4.63. This suggested that both models had been supported to a considerable degree by the qualitative data.

Table 5.10
Items of the Main Model Developed in the Context of Malaysian Public Research & Comprehensive HE with Supporting Qualitative Data

Item Code	Item	Supporting Priority &/or Value
SID_01	Giving and receiving constructive feedback to/from work colleagues and others	Communication
SID_03	Empathizing and working productively with students from a wide range of backgrounds	Students Affairs Management
SID_04	Empathizing and working productively with staff and other key players from a wide range of backgrounds	Staff Affairs Management
SID_05	Listening to different points of view before coming to a decision	Communication - Openness & Open-mindedness
SID_06	Developing and contributing positively to team-based programs	Team-working
SID_07	Working with very senior people within and beyond my university without being intimidated	Relationships Establishment & Maintenance - Collaboration & Cooperation
SES_01	Being sensitive to the information regarding the technological developments	Appreciation, Awareness, & Consciousness
SES_02	Monitoring the external environment more when the university is highly dependent on outsiders, faces severe competition and the environment is rapidly changing	Monitoring - Change & Transformation
SES_03	Using more accurate, shared mental models to make strategic decisions or performance improvements	Planning - Professional Development Training & Continuous Improvement
SES_04	Explaining about undesirable outcomes that are likely to occur if new opportunities are exploited by competitors	Appreciation, Awareness, & Consciousness
SES_05	Influencing how new knowledge or a new technology is diffused and applied in the university by explaining why it is important	General Skills & Knowledge - Appreciation, Awareness, & Consciousness
SES_06	Identifying environmental threats and opportunities for the university and interpreting the collected information	Monitoring - Appreciation, Awareness, & Consciousness
SES_08	Helping the people to better recognize failures	Staff Development, Empowerment, & Expertise
SOC_02	Creating a climate of psychological safety and mutual trust in the university	Creating a Conductive & Convenient Environment - Trustworthiness, Truthfulness, & Sincerity
SOC_04	Providing information showing how similar work units or competitors have better performance	Providing Consultation
SOC_05	Providing resources for the people to increase learning from mistakes and failures	Professional Development Training & Continuous Improvement

Table 5.10 continued		
SOC_06	Building confidence among the people that they will be successful in implementing change programs	Confidence - Change & Transformation
TOB_01	Being willing to take risks in decisions	Determination, Firmness, & Decisiveness
TOB_02	Offering ideas about new and different ways of doing things and accepting innovative proposals	Creativity & Innovation - Openness & Open-mindedness
TOB_03	Seeing possibilities rather than problems	****
TOB_04	Liking and encouraging to discuss new ideas	Persuasion, Motivation, & Inspiration - Creativity & Innovation
HCOF_01	Avoiding taking actions that can divert attention from innovative solutions	Creativity & Innovation
HCOF_02	Avoiding the development of visions based on false assumptions	Vision Building & Fulfilment
HCOF_03	Avoiding pursuing a risky and unrealistic vision that can result to performance decline	Vision Building & Fulfilment
BPD_02	Being able to make effective presentations to a range of different groups	Communication
BPD_03	Having sound administrative and resource management skills	General Skills & Knowledge
BPD_04	Being able to use IT effectively to communicate and perform key work functions and enhance my professional development	General Skills & Knowledge - Communication - Professional Development Training & Continuous Improvement
UOR_01	Understanding of industrial relations issues and processes as they apply to higher education	Industry-University Linkage
UOR_03	Understanding the role of risk management and litigation in my work	General Management
UOR_04	Understanding how universities operate	General Management
BSP_01	Understanding how to develop and evaluate an effective higher education learning program	Designing, Accrediting, & Updating Programs & Contents
BSP_02	Knowing how to identify and disseminate good learning and management practice across the unit or university	Communication
BSP_03	Having a high level of up-to-date knowledge of what engages university students in productive learning	General Skills & Knowledge - Students Learning
RP_02	Securing competitive funds related to learning and teaching as well as to the area of responsibility	Finance, Budgeting, Grants, & Fundraising
RP_03	Bringing innovative policies and practices into action	****
RP_07	Meeting student load targets	Achieving Goals, KPIs, & Standards
RP_11	Successful implementation of new initiatives	Change & Transformation
APE_01	Establishing a collegial working environment	Creating a Conductive & Convenient Environment
APE_02	Improving student satisfaction ratings for learning and teaching	Satisfaction, Happiness, & Enjoyment
APE_03	Enhanced representation of equity groups	Fairness, Equity, & Equality
APE_06	Producing successful learning systems or infrastructures	Maintaining Infrastructures & Facilities
APE_07	Delivering successful team projects in learning and teaching	Teaching & Delivering Programs - Students Learning
APE_08	Producing future learning and teaching leaders	****

In addition, the comparisons of the outputs of FIMIX-PLS in the context of Malaysian public research & comprehensive HEIs did indicate that university-faculty level leaders were totally management-oriented since none of the leadership capabilities were significant constructs to explain leadership performance in this

context. However, department-individual professorial level leaders were recognized as more leadership-oriented since in this model, change-oriented capability was the main predictor of leadership performance. It is noticeable that in this model, there were two leadership capabilities namely interpersonal and change-oriented capabilities and one managerial competency (with two items).

Moreover, this analysis emphasized on the leadership role of professors who do not hold formal positions, but do influence on many practices and processes in academic settings. In other words, the study suggested that these leaders should never be neglected in policy and decision making processes.

The last issue merited to be addressed here is that most the items in the developed models were underpinned by the recent literature in HE leadership. For instance, “Listening to different points of view before coming to a decision” has been emphasized by Fullan and Scott (2009), “Having sound administrative and resource management skills” has been proposed by Ramsden (1998b), and “Developing and contributing positively to team-based programs” has been stressed by Fullan and Scott (2009) and Asif and Searcy (2013). Also “Identifying environmental threats and opportunities for the university and interpreting the collected information”, “Monitoring the external environment more when the university is highly dependent on outsiders, faces severe competition and the environment is rapidly changing”, “Creating a climate of psychological safety and mutual trust in the university”, “Producing successful learning systems or infrastructures”, and “Delivering successful team projects in learning and teaching” have been emphasized by Asif and Searcy (2013). Moreover, “Having a high level of up-to-date knowledge of what engages university students in productive learning” and “Securing competitive funds related to

learning and teaching as well as to the area of responsibility” have been suggested by Black (2015) and Asif and Searcy (2013).

Malaysian public focused and private focused HEIs. The contexts of Malaysian public focused HEIs and Malaysian private focused HEIs were focused through research questions 1, 2-iii, 2-iv, and 3. The outcome of research question 1 did denote that in the context of Malaysian public focused HEIs, personal capability had the maximum mean score and change-oriented capability had the minimum mean score on the grounds of the viewpoints of the respondents. Regarding Malaysian private focused HEIs, the output of research question 1 uncovered that cognitive capability had the maximum and change-oriented capability had the minimum mean score in the context of Malaysian private focused HEIs, respectively.

As discussed earlier, to generate accurate path coefficients, the data collected from leaders in the context of public focused and private focused HEIs were merged and research question 2-iii and 2-iv were answered jointly.

Through this analysis, the extent to which leadership performance could be explained by different types of leadership capabilities and managerial competencies in the context of Malaysian focused HEIs was examined. The outcome of the analysis of the data at aggregate level indicated that personal, interpersonal, and cognitive capabilities were not significant predictors of leadership performance in Malaysian focused HEIs. Also, FIMIX-PLS (Hair et al., 2014; Hair et al., 2016) results did not indicate the existence of unobserved heterogeneity within the data. Additionally, the results of IPMA (Hair et al., 2014) showed that change-oriented capability was the major area of improvement to be addressed by management activities.

The validity of the models was also reinvestigated by contrasting each items of the developed model with the categories of priorities and values generated through research question 3 which had been displayed in Tables 4.58, 4.59, 4.64, and 4.65. This contrast confirmed the validity of the model to a considerable extent, as shown in Table 5.11. In fact, only two items were not explicitly and directly supported by the categories displayed in Tables 4.58, 4.59, 4.64, and 4.65.

Table 5.11
Items of the Main Model Developed in the Context of Malaysian Public and Private Focused HEIs with Supporting Qualitative Data

Item Code	Item	Supporting Priority &/or Value
APE_02	Improving student satisfaction ratings for learning and teaching	Satisfaction, Happiness, & Enjoyment
APE_03	Enhanced representation of equity groups	Fairness, Equity, & Equality
APE_06	Producing successful learning systems or infrastructures	****
APE_07	Delivering successful team projects in learning and teaching	Teaching & Delivering Programs - Students Learning
APE_08	Producing future learning and teaching leaders	Leading Academic & Non-academic Staff
BPD_01	Being able to organize my work and manage time effectively	Time Management
BPD_02	Being able to make effective presentations to a range of different groups	Communication
BPD_03	Having sound administrative and resource management skills	General Skills & Knowledge
BPD_04	Being able to use IT effectively to communicate and perform key work functions and enhance my professional development	General Skills & Knowledge - Communication - Professional Development Training & Continuous Improvement
BSP_01	Understanding how to develop and evaluate an effective higher education learning program	Designing, Accrediting, & Updating Programs & Contents
BSP_02	Knowing how to identify and disseminate good learning and management practice across the unit or university	Communication
BSP_03	Having a high level of up-to-date knowledge of what engages university students in productive learning	General Skills & Knowledge - Students Learning
BSP_04	Being on top of current developments in learning and teaching	Professional Development Training & Continuous Improvement
RP_01	Achieving positive outcomes from external reviews of the area	Recognition, Image, & Rank
RP_02	Securing competitive funds related to learning and teaching as well as to the area of responsibility	Finance, Budgeting, Grants, & Fundraising
RP_03	Bringing innovative policies and practices into action	Creativity & Innovation
RP_04	Achieving a high profile for your area of responsibility	Recognition, Image, & Rank
RP_09	Receiving positive user feedback for your area of responsibility	Recognition, Image, & Rank
SOC_01	Explaining why the change is necessary and needed	Change & Transformation
SOC_03	Creating an organizational culture that values creativity and entrepreneurial activities	Creating a Conductive & Convenient Environment - Creativity & Innovation
SOC_04	Providing information showing how similar work units or competitors have better performance	Providing Consultation

Table 5.11 continued		
SOC_05	Providing resources for the people to increase learning from mistakes and failures	Professional Development Training & Continuous Improvement
SOC_06	Building confidence among the people that they will be successful in implementing change programs	Change & Transformation
SES_04	Explaining about undesirable outcomes that are likely to occur if new opportunities are exploited by competitors	Appreciation, Awareness, & Consciousness
SES_05	Influencing how new knowledge or a new technology is diffused and applied in the university by explaining why it is important	General Skills & Knowledge - Appreciation, Awareness, & Consciousness
SES_06	Identifying environmental threats and opportunities for the university and interpreting the collected information	Monitoring - Appreciation, Awareness, & Consciousness
SES_08	Helping the people to better recognize failures	Staff Development, Empowerment, & Expertise
SES_09	Encouraging the use of new technology and knowledge sharing programs among the people at the university	Persuasion, Motivation, & Inspiration
TOB_01	Being willing to take risks in decisions	Determination, Firmness, & Decisiveness
TOB_03	Seeing possibilities rather than problems	****
TOB_05	Supporting the activities to facilitate learning and acquire new knowledge from research, small-scale experiments and external resources	Receiving & Providing Support - Professional Development Training & Continuous Improvement - General Skills & Knowledge
UOR_01	Understanding of industrial relations issues and processes as they apply to higher education	Industry-University Linkage
UOR_02	Being able to help my staff learn how to deliver necessary changes effectively	Staff Development, Empowerment, & Expertise - Change & Transformation
UOR_03	Understanding the role of risk management and litigation in my work	General Management

It is noticeable that the importance of many the items in the developed model, which have been presented in the appendices section, have been addressed in the literature. For example, “Having sound administrative and resource management skills” and “Providing information showing how similar work units or competitors have better performance” have been emphasized by Ramsden (1998b). In addition, items “Being able to use IT effectively to communicate and perform key work functions and enhance my professional development”, “Having a high level of up-to-date knowledge of what engages university students in productive learning”, “Securing competitive funds related to learning and teaching as well as to the area of responsibility”, “Providing resources for the people to increase learning from mistakes and failures”, “Helping the people to better recognize failures”, and “Being able to

help my staff learn how to deliver necessary changes effectively” are consonant with the academic qualities of leaders suggested by Black (2015).

Moreover, the items are in strong alignment with the encouraged practices through MNHESP as well as values, roles, purposes, and vision of AKEPT. For instance, items “Delivering successful team projects in learning and teaching” and “Bringing innovative policies and practices into action” are in line with the values of AKEPT. Also, the items “Producing future learning and teaching leaders”, “Creating an organizational culture that values creativity and entrepreneurial activities”, and “Supporting the activities to facilitate learning and acquire new knowledge from research, small-scale experiments and external resources” are related to the roles of AKEPT. Additionally, the items “Explaining why the change is necessary and needed” and “Understanding of industrial relations issues and processes as they apply to higher education” are consistent with the encouraged practices through MNHESP.

In a nutshell, even though these strong evidences suggest that the developed model is consistent with the literature, the concerns of Malaysian decision makers in HE have also been reflected in the model, which makes the model a valid, reliable, and generalizable model in the context of Malaysian Focused HEIs.

Implications of the Findings

Although this study is limited only to HEIs in Malaysia, the findings have wider implications in contributing to the understanding of governance and leadership in the broader context of HE. The implications of the findings have been classified into three groups namely practical implications, theoretical implications, and methodological implications.

practical implications. From a practical lens, this study has provided some opportunities for policy makers in Ministry of Higher Education Malaysia and AKEPT to have a clear picture of the current situation of Malaysia in terms of leadership capabilities and managerial competencies based on Academic Leadership Capability Framework. As a matter of fact, regarding leadership development and training programs, policy makers may be able to adjust and update the contents of such programs and focus on the most pivotal dimensions of these qualities in training current and flourishing future leaders. Especially, based on the assumption that what have been posted in the website of AKEPT are implemented, it may be argued that, for some reasons, AKEPT is benefitted from the results of this study in a more practical vein. First, provision of relevant and pragmatic training programs for leaders in Malaysian HE is one of the main roles and core objectives of AKEPT. Second, in this study, collaborating with stakeholders, as one of missions of AKEPT, was emphasized since this mission is related to environmental scanning capability as one of the main qualities of change-oriented leaders. This did imply that the exercise of change-oriented leadership in Malaysian HE is greatly consistent with this main mission of AKEPT. Third, the findings of this study were in line with two other missions of this organization in terms of undertaking national transformations in HE and the enhancement of academic leadership performance. Fourth, two leadership performance determinants of change-oriented leaders including innovativeness and adaptability were emphasized as two of the values of this organization. Fifth, the assimilation between the target population in this study and the target group of AKEPT was another encouraging practical point to be noted (Please visit AKEPT website for more info).

Malaysian academic leaders in public and private HEIs were also profiled based on Academic Leadership Capability Framework. In addition, through a comparative study with interesting results, the framework was used as a platform to compare Malaysian academic leaders with those academic leaders in Australia and New Zealand (Please refer to the appendices section for more info).

It is noticeable that not only the main leadership capabilities, managerial competencies, and leadership performance indicators were identified in each sector of Malaysian HE through advanced statistical procedures such as FIMIX-PLS, but also the main areas of improvement to be addressed by management activities were proposed based on the results of IMPA.

Lastly, this study emphasized the leadership role of professors who do not hold formal positions, but do influence on many practices and processes in academic settings. In other words, the study suggested that these leaders should never be neglected in policy and decision making processes.

theoretical implications. Through this study, Academic Leadership Capability Framework was tested in Malaysian HE environment. In addition, this research work, as suggested in earlier leadership studies such as Ekvall and Arvonen (1991) and Yukl (2004), extended the literature of change-oriented leadership in the context of HE. As a matter of fact, change-oriented capability scale in academic settings with five subscales namely thinking out of the box, strategic environmental scanning, supporting organizational culture, having clear objective focus, and overcoming obstacles was integrated into Academic Leadership Capability Framework. This integration suggested that leadership performance in academic

settings may be well predicted by personal, interpersonal, cognitive, and change-oriented capabilities as well as generic and role-specific competencies.

The other main theoretical implication of this research study was to modify the original scales of capabilities, competencies, and leadership performance (Scott et al., 2008) in Malaysian HE context. This procedure shed light on the fact that not only some of the items were not meaningful in Malaysian context, but also the groupings of the items were different from the original scales, as elaborated in chapter three.

Also, the participants of the study were given the chance to express and share their opinions related to the main Malaysian HE provocative issues. In other words, through data collection procedure, the immediate responses of almost 250 Malaysian academic leaders from both public and private universities were captured to identify the main priorities, values, challenges, and solutions in Malaysian HE as well as to validate the outputs of quantitative data analysis.

Finally, using advanced statistical procedures available in second generation quantitative analytic tools (Hair et al., 2014), a few models for the contribution of leadership capabilities and managerial competencies to leadership performance in entire Malaysian HE system, Malaysian public research & comprehensive HEIs, and Malaysian public and private focused HEIs were developed. The development of these models also played an important role in expansion of the knowledge and literature centering around the main constructs under this study, especially leadership performance as emphasized by Bryman (2007).

methodological implications. The output of the piloting and actual phases of this study shed light on the fact that gaining quality results was a function of a few

statistical procedures. This highlighted the importance of data screening procedures, statistical assumptions fulfillments, and employing state-of the-art techniques to analyze the data. In other words, the outcomes of the analysis showed that it is very unlikely to achieve quality and creditable results while these steps have not been taken.

The main methodological implications have been listed below:

- Handling the issues of missing values using EM algorithm or regression-based method prior to undertaking the main analysis (Ho, 2013).
- Eliminating non-contributing items at subscale and scale levels through examination of the correlation table of the items (Field, 2013).
- Checking for existence of outlying cases as well as cases with undue influence over the analysis through examining relevant statistics such as standardized residuals, Mahalanobis Distance, Cook's distance, DFFit values, DFBeta values, and Leverage or Hat values (Field, 2013), as well as standardized factor scores (Garson, 2016).
- Choosing an appropriate EFA method in terms of extraction and rotation and fulfilling statistical assumptions of the analysis such as normality, linearity, and factorability (Field, 2013).
- Considering adequacy of sample size for EFA (Field, 2013), on the basis of three criteria including KMO measure, availability of high loading items (over 0.6) in the emerged components (Guadagnoli & Velicer, 1988), and the communalities tables (MacCallum et al., 1999).

- Evaluating the diagonal elements of the anti-image correlation matrices of the items as the measures to check sampling adequacy for each pair of items in each emerged component (Field, 2013).
- Employing Parallel Analysis (Field, 2013; Ho, 2013; O'Connor, 2000) or Velicer's MAP test (Ho, 2013; O'Connor, 2000) to determine the true number of retaining components or factors.
- Reporting all the necessary pivotal coefficients such as corrected item-total correlation coefficient and communalities for each item in the emerged components in the respective tables (Field, 2013).
- Setting the critical value for testing the significance of factor loadings of the items to be loaded in each of the emerged components or factors on the grounds suggested by Stevens (2009).
- Using second generation data analysis tools rather than first generation tools and selecting CB-SEM or VB-SEM approaches on the grounds proposed by Hair et al. (2014) to develop new models.
- Assessing discriminant validity on the basis of HTMT as a new criterion to establish discriminant validity in VB-SEM (Henseler et al., 2015) rather than conventional techniques.
- Performing FIMIX-PLS to detect unobserved heterogeneity as a threat to the validity of SEM (Hair et al., 2014; Hair et al., 2016; Matthews et al., 2016).
- Carrying out IMPA as a recommended complementary analysis to extend the results of PLS-SEM for identifying the major areas of focus for improvement to be addressed by management activities (Hair et al., 2014).

Recommendations for Future Research

Although this study attempted to bridge the identified gaps in leadership capabilities and managerial competencies literature in the context of Malaysian HE, more studies need to be undertaken to grasp a better understanding on the complexities of HEIs as well as the leaders who lead them towards excellence. These recommendations have been classified in accordance with their relevancy to practice, theory, and methodology.

practical recommendations. These recommendations include:

- Replicating the study guided by Academic Leadership Capability Framework in other Malaysian educational sectors and making comparisons between the results of the current study with those studies.
- Performing further studies to identify the main issues in other Malaysian Educational sectors (priorities, values, challenges, and solutions).
- Replicating the study on the grounds of Academic Leadership Capability Framework in other leading countries in terms of HE provision in the region such as India, China, Singapore, Taiwan, Korea, Japan, and Hong Kong and comparing the results through a comparative approach. Replication of the study in other educational sectors of these countries are also recommended.
- Replicating the study in other countries which have intentions of positioning themselves as educational hubs such as Bahrain and Qatar.

- Undertaking further studies to identify the main issues of HE in neighboring countries and comparing them with the results of this study.

theoretical recommendations. Theoretical recommendations encompass:

- Integrating more meaningful constructs into Academic Leadership Capability Framework based on the results of the recent research HE leadership area.
- Using Academic Leadership Capability Framework as a foundation for leadership theory building in different educational contexts.
- Performing more research studies focusing on change-oriented leadership in other educational sectors and expanding the knowledge in this area.

methodological recommendations. Recommendations about methodological issues have been listed below:

- Collecting data for as many as possible categorical variables since these variables play an important part in detecting unobserved heterogeneity within the collected data.
- Establishing the reliability and validity of ALTC instrument in other cultural context to carry out inferential analysis and generalize the findings.
- Performing segment-specific analysis to detect unobserved heterogeneity in social science research using the combination of

FIMIX-PLS and Prediction-Oriented Segmentation (POS) as advised by Matthews et al. (2016).

- Comparing R^2 of the model developed on the basis of the aggregate data with weighted R^2 on the basis of FIMIX-PLS to check whether heterogeneity significantly affect the data as proposed by Matthews et al. (2016).
- Undertaking further analysis to check whether the differences between the path coefficients in the models resulted from FIMIX-PLS were significant using the procedure proposed by Henseler, Ringle, and Sarstedt (2016).
- Performing mediation and moderation effects analysis (Hair et al., 2014).
- Addressing the main areas of improvement at item or indicator level (not construct level) and provide more in-depth information to be utilized by decision makers.
- Carrying out qualitative research in this area to gain a more in-depth knowledge.
- Performing Partial Least Squares Multi Group Analysis (PLS-MGA) in order to compare different groups as suggested by Hair et al. (2014) and Sarstedt, Henseler, and Ringle (2011).
- Identifying the main priorities, values, challenges, and solution based on the results of FIMIX-PLS rather than the results of PLS algorithm.
- Estimating the models using Consistent PLS (PLSc) algorithm as the latest development of the PLS algorithm

Conclusion

The recent research studies have highlighted the crucial role of public and private institutions of higher learning in the modern economy. Producing future leaders, improving efficiency, increasing accountability and diversity of choice are just a few typical hallmarks of HEIs. To this end, major qualities of academic leaders should be identified and the contents of leadership development programs must be adjusted and upgraded. This study was aimed at identifying the most pivotal leadership capabilities and managerial competencies of Malaysian academic leaders that contribute to their performance. In addition, it was meant to identify the main issues of Malaysian HE including job priorities, values, challenges, and solutions to these challenges. These qualitative data not only were used to identify the main areas of focus in the management and leadership of Malaysian HEIs, but also were used to support and underpin the developed models on the grounds of quantitative data in Malaysian HE system and its sectors.

It is noticeable that for developing the models in this study, SmartPLS 3, as one of the second-generation quantitative data analysis tool, was employed to ensure the quality and accuracy of the results. In addition, as explained in details in chapter three and four, all the statistical requirements were met prior to undertaking the main analysis procedures. For instance, the newly introduced criterion known as HTMT criterion was employed to establish discriminant validity, FIMIX-PLS was undertaken to detect and deal with unobserved heterogeneity, and IPMA was run to extend the findings of PLS algorithm results.

Even though the limitations of this study have been discussed in chapter one, some other limitations were also faced during data collection and analysis. Among

these limitations, the possibility of making errors and mistakes in categorizing more than 4500 records by a human element may be stated.

It is worth noting that the results of the analysis shed light on the fact that personal capability was not a significant predictor of leadership performance in Malaysian HE even though this type of capability has a strong alignment with the provocative debate of emotional intelligence concept. In fact, this finding was one of the main ones which challenged the assumption in the literature regarding the contribution of personal capability to leadership performance in Malaysian academic context.

Moreover, cognitive capability was not identified as a significant construct to determine leadership performance as well. Given the high correlation between cognitive and change-oriented capabilities as well as the overlap between these two constructs in terms of a few semantically similar items, merging of these two capabilities or just integrating change-oriented capability in Academic Leadership Capability Framework may be contended. This is also in line with the propositions made by Yukl (2004) in terms of the comprehensiveness of change-oriented capability, comparing with other main theories of change leadership namely transformational and charismatic leadership theories.

The other interesting result was that integrating change-oriented capability into Academic Leadership Capability Framework, as the main theoretical contribution of this research work, deemed to be theoretically and managerially meaningful and relevant since this type of leadership capability was a significant construct in explaining leadership performance in many of the developed models.

It is noticeable that as explained earlier, change-oriented capability scale had the minimum mean score in Malaysian HE system and its sectors from the perspectives of the sampled leaders. However, the outcomes of PLS-SEM through research question 2 revealed that this constructs plays an important role in determining leadership performance.

Collectively, the results of this study did indicate that context matters in leading universities. In other words, in any of the contexts, the combinations of significant constructs in the developed models were different from each other. This, to a considerable extent, did imply that the contents of leadership developmental or managerial training programs must be adjusted based on educational context.

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LIST OF PUBLICATIONS AND PAPERS PRESENTED

- **ISI Papers**

1. Ghasemy, M., Hussin, S., & Megat Daud, M. A. K. (2016). Academic leadership capability framework: A comparison of its compatibility and applicability in Australia, New Zealand, and Malaysia. *Asia Pacific Education Review*, 1-17. doi:10.1007/s12564-016-9425-x
2. Pivotal Qualities for Effective University Leadership on the Basis of an Australian Model: The Application of FIMIX-PLS and IPMA in Malaysian Academic Context [*submitted to Asia Pacific Education Review- status: under review*]

- **Scopus papers**

3. Issues in Malaysian Higher Education: The Top Five Priorities, Values, Challenges, and Solutions from the Viewpoints of Academic Leaders [*submitted to SAGE Open- status: under review*]
4. Effective Leaders in Malaysian Focused Universities: The Application of VB-SEM and the Extension of the Results [*submitted to Leadership & Organization Development Journal- status: under review*]

- **ISI Conference Proceedings**

5. Ghasemy, M., Hussin, S., Megat Daud, M. A. K., Ghavifekr, S., & Kenayathulla, H. B. (2016, 07-09 March). Assessing management competencies for quality leadership performance: A study in Malaysian higher education context. Paper presented at the INTED2016, Valencia, Spain.
6. Ghasemy, M., Hussin, S., Zabidi Abul Razak, A., Maah, M. J., & Megat Daud, M. A. K. (2016, 07-09 March). Identifying the factors building personal, interpersonal, and cognitive capabilities in Malaysian higher education. Paper presented at the INTED2016, Valencia, Spain.
7. Hussin, S., Ghasemy, M., & Megat Daud, M. A. K. (2015, 6-8 July). A comparative study on leadership capabilities, competencies and

performance effectiveness in Australia, New Zealand and Malaysia. Paper presented at the EDULEARN2015, Madrid, Spain.

8. Ghasemy, M., Hussin, S., & Megat Daud, M. A. K. (2015, 16-18 November). The Malaysian version of change-oriented leadership behaviors scale in academic settings: A quality scale development using Velicer's MAP test with a small sample size. Paper presented at the iCERi2015, Seville, Spain.
9. Ghasemy, M., Hussin, S., Megat Daud, M. A. K., & Abul Razak, A. Z. (2015). An evaluation of academic leadership capability framework in the context of change in higher education. Paper presented at the iCERi2015, Seville, Spain

- **Peer reviewed Papers**

10. Ghasemy, M., Hussin, S., Megat Daud, M. A. K., & Md Nor, M. (2015). Assessment of leadership performance effectiveness in higher education: A Malaysian perspective. *Malaysian Online Journal of Educational Management*, 3(4).
11. Ghasemy, M., Hussin, S., & Megat Daud, M. A. K. (2017). The key determinants of leadership performance effectiveness in public research and comprehensive universities: An advanced PLS-SEM study in Malaysian context. *Malaysian Online Journal of Educational Management*, 5(1), 62-81.

- **Non-ISI Conference Proceedings**

12. Ghasemy, M., & Hussin, S. (2014, 25-26 September). Change, leadership and change-oriented leadership theories in higher education: A review. Paper presented at the Seminar Kebangsaan Majlis Dekan-Dekan Pendidikan IPTA 2014, University of Malaya, Malaysia.
13. Ghasemy, M., & Hussin, S. (2014, 25-26 September). Theories of educational management and leadership: A review. Paper presented at the Seminar Kebangsaan Majlis Dekan-Dekan Pendidikan IPTA 2014, University of Malaya, Malaysia.

APPENDICES

Appendix A: Requesting Permission to Use the ALTC Study Instrument

Dear Prof. Scott

I am Majid Ghasemy, a PhD candidate at faculty of education, University of Malaya. Currently my field of study is educational leadership and I am focusing on change-oriented leadership.

I have already studied your reports and books regarding turnaround leadership including learning leaders in times of change, turnaround leadership for HE and turnaround leadership for sustainability in HE and found them so useful, appropriate and relevant to my topic especially your proposed framework. In fact, I have integrated the Academic Leadership Capability Framework into my conceptual framework and now I need to operationalize my concepts. Thus, I would like to get permission to use the instrument that you already developed. Please kindly inform me whether it is possible to use your instrument.

Best wishes and thanks in advance

MAJID GHASEMY
PHD CANDIDATE
FACULTY OF EDUCATION
UNIVERSITI MALAYA

Appendix B: Response Received from Prof Scott about Using the Instrument

Dear Majid

I am glad that you have found our approach to studying educational leadership of help. In terms of permission to use the survey it would be important to double check with the Australian Office for Learning & Teaching (this Office and its predecessor The Australian Learning & Teaching Council funded the studies).

I have copied in Natalie Laifer from the OLT so she can advise us on the correct procedure and protocol.

I wish you all the best with your research. I recall visiting the University of Malaya's Faculty of Education way back in 1969 - I am sure it is much changed today.

Kind regards
Geoff

Appendix C: Issued Permission to Use the ALTC Study Instrument

Hello Majid,

The Office for Learning and Teaching permits use of the material, provided it is correctly acknowledged. So, where you use or refer to it, you need to include a statement to the effect of 'the materials have been developed with the support of the Australian Government Office for Learning and Teaching. The materials do not represent the views of the Australian Government Office for Learning and Teaching'. It would also be appropriate to acknowledge Professor Scott.

Regards
Natalie

Appendix D: Pilot Study (LIMEO-1 study) Instrument



A Survey on Capabilities and Competencies Related to Leadership Performance

Effectiveness in the Context of Change in Malaysian HEIs (Pilot Study)

Dear Respectable Tan Sri, Dato, Datin, Professor, Associate Prof, Dr., Sir, Madam,
Sincere greetings and best regards to you.

You have been selected to be a respondent for this survey because of your prominent leadership role in your institution and you somehow affect decision-making, policies, and management of your faculty and organization.

The title of this study is “**Capabilities and Competencies Related to Leadership Performance Effectiveness in the Context of Change in Malaysian Higher Education Institutions.**”

Your voluntariness, sincerity, and truthfulness in answering the survey completely is critical for determining the accurate picture of the Malaysian HE scenario on leadership and management, as well as the degree of validity and reliability of the survey instrument. Please answer all items.

The research team greatly appreciates and is thankful to you for the time and effort in answering this survey.

Thank you.

Professor Datuk Dr. Sufean Bin Hussin (Principal Researcher)
Majid Ghasemy (Research Manager)
Faculty of Education
University of Malaya

*. The scales of Personal, Interpersonal and Cognitive Capability as well as competencies and Leadership Performance effectiveness have been developed with the support of the Australian Government Office for Learning and Teaching. The materials do not represent the views of the Australian Government Office for Learning and Teaching. The mentioned scales have also been used in similar studies in Australia and New Zealand.

Explanation and Guidelines

- The purpose of administering this survey is to check the reliability as well as content and construct validity of the instrument aimed to be used in the actual study on the capabilities and competencies related to Leadership Performance effectiveness of university administrators and leaders in the context of change.
- In this study, capabilities refer to leadership qualities which include Personal, Interpersonal and Change-oriented Capability. In addition, competencies refer to management qualities and include Generic and Role-specific Competency. Leadership Performance also refers to Personal and Interpersonal Outcomes, Learning and Teaching Outcomes, Recognition and Reputation, Financial Performance and Effective Implementation.
- Completing this survey won't take more than 30-40 minutes of your valuable time and you can be assured that all information will be treated with the strictest confidentiality. The survey form has two sections: Part I on Background Information of Respondents and Part II on Capabilities, competencies and Leadership Performance. All items in Part II are rated with an ordinal scale: from 1 (low importance) to 5 (high importance).
- Suggestions to improve the survey are greatly appreciated.
- Your truthfulness and honesty in answering this survey will determine the quality of data and findings.
- Many thanks for your assistance with this pilot study. We understand that the number of the items are too many and are aware of the time pressure of your very busy work schedule. However, the knowledge derived from this study will yield some important benefits to leadership and management effectiveness in Malaysian HEIs in the future.
- Again, we are grateful for your participation in the study. Million thank you again.

Section 1: Participant's Profile

1	Your gender	Male	
		Female	
2	Your age group	Under 36	
		36-45	
		46-55	
		56-65	
		Over 65	
3	Your marital statuses	single	
		Married	
4	Your academic qualification	Professor	
		Associate professor	
		Assistant professor/ Senior lecturer	
		other	
5	Your main disciplinary background	Agriculture and environmental studies	
		Architecture and building	
		Education	
		Engineering and technology	
		Health	
		Information technology	
		Law	
		Management and commerce	
		Nature and physical sciences	
		Society and culture	
		Other	
6	Your university	IIUM (International Islamic University Malaysia)	
		UNIMAS (Unibversiti Malaysia Sarawak)	
		UniMAP (Universiti Malaysia Perlis)	
		UMS (Universiti Malaysia Sabah)	
		UMK (Universiti Malaysia Kelantan)	
		UTP (Universiti Teknologi Pertronas)	
		Kolej Universiti Insaniah	
		Malaysia Campus of University of Nottingham	
		Universiti Tun Abdul Razak	
7	What is your current role?	Vice-chancellor	
		Deputy vice chancellor	
		Dean	
		Director	
		Deputy dean	
		Deputy director	
		Head of department	

		Full professor (who does not have any roles)	
8	How many years have you held your current role?	Under one year	
		1-3 years	
		4-6 years	
		7-10 years	
		More than 10 years	
9	What was your role immediately prior to your current one?	Vice-chancellor	
		Deputy vice-chancellor	
		Dean	
		Director	
		Deputy dean	
		Deputy director	
		Head of department	
		Full professor	
10	How many years were you in this prior role?	Under one year	
		1-2 years	
		3-5 years	
		6-10 years	
		More than 10 years	
11	Do you intend to apply for another higher education leadership role in the next five years?	uncertain	
		Yes	
		No	
12	Have you ever had a leadership role outside higher education?	Yes	
		No	

Section 2: Leadership Capabilities, Competencies and Leadership Performance Effectiveness

A. Personal Capability (15 items)

How important do you believe each of the following **PERSONAL CAPABILITIES** is for **EFFECTIVE PERFORMANCE** in your current role?

No.	Items	Importance for effective Leadership Performance				
		Low	Low to medium	Medium	Medium to high	High
1	Deferring judgment and not jumping in too quickly to resolve a problem					
2	Understanding my Personal strengths and limitations					
3	Admitting to and learning from my errors					
4	Bouncing back from adversity					
5	Maintaining a good work/life balance and keeping things in perspective					
6	Remaining calm under pressure or when things take an unexpected turn					
7	Being willing to take a hard decision					
8	Being confident to take calculated risks					
9	Tolerating ambiguity and uncertainty					
10	Being true to one's Personal values and ethics					
11	Having energy, passion and enthusiasm for Learning and Teaching					
12	Wanting to achieve the best outcome possible					
13	Taking responsibility for program activities and outcomes					
14	Persevering when things are not working out as anticipated					
15	Pitching in and undertaking menial tasks when needed					

B. Interpersonal Capability (12 items)

How important do you believe each of the following **INTERPERSONAL CAPABILITIES** is for **EFFECTIVE PERFORMANCE** in your current role?

No.	Items	Importance for effective Leadership Performance				
		Low	Low to medium	Medium	Medium to high	High
16	Influencing people's behavior and decisions in effective ways					
17	Understanding how the different groups that make up my university operate and influence different situations					
18	Working with very senior people within and beyond my university without being intimidated					
19	Motivating others to achieve positive outcomes					
20	Working constructively with people who are 'resistors' or are over-enthusiastic					
21	Developing and using networks of colleagues to solve key workplace problems					
22	Giving and receiving constructive feedback to/from work colleagues and others					
23	Empathizing and working productively with students from a wide range of backgrounds					
24	Listening to different points of view before coming to a decision					

25	Empathizing and working productively with staff and other key players from a wide range of backgrounds					
26	Developing and contributing positively to team-based programs					
27	Being transparent and honest in dealings with others					

C. Cognitive Capability (14 items)

How important do you believe each of the following **COGNITIVE CAPABILITIES** is for **EFFECTIVE PERFORMANCE** in your current role?

No.	Items	Importance for effective Leadership Performance				
		Low	Low to medium	Medium	Medium to high	High
28	Diagnosing the underlying causes of a problem and taking appropriate action to address it					
29	Recognizing how seemingly unconnected activities are linked					
30	Recognizing patterns in a complex situation					
31	Identifying from a mass of information the core issue or opportunity in any situation					
32	Seeing and then acting on an opportunity for a new direction					
33	Tracing out and assessing the likely consequences of alternative courses of action					
34	Using previous experience to figure out what's going on when a current situation takes an unexpected turn					
35	Thinking creatively and laterally					
36	Having a clear, justified and achievable direction in my area of responsibility					
37	Seeing the best way to respond to a perplexing situation					
38	Setting and justifying priorities for my daily work					
39	Adjusting a plan of action in response to problems that are identified during its implementation					
40	Making sense of and learning from experience					
41	Knowing that there is never a fixed set of steps for solving workplace problems					

D. Change-oriented Capability (64 items)

How important do you believe each of the following **CHANGE-ORIENTED CAPABILITIES** is for **EFFECTIVE PERFORMANCE** in your current role?

No.	Items	Importance for effective Leadership Performance				
		Low	Low to medium	Medium	Medium to high	High
42	Explaining why the change is necessary and needed					
43	Providing information showing how similar work units or competitors have better Leadership Performance					
44	Explaining about undesirable outcomes that are likely to occur if emerging problems are ignored					
45	Explaining about undesirable outcomes that are likely to occur if new opportunities are exploited by competitors					

46	Influencing people to accept the need for change through increasing their awareness of problems without creating an excessive level of distress					
47	Having courage to persistently push for change when his/her career is at risk.					
48	Having the ability to frame unfavorable events as an opportunity rather than a threat					
49	Having the ability to propose a Strategy for responding to a threat or opportunity					
50	Involving people with relevant expertise in change processes					
51	Avoiding to advocate a costly major change when only incremental adjustments as necessary					
52	Avoiding to advocate the acceptance of a costly new initiative without considering the serious risks and obstacles					
53	Articulating a clear, appealing vision of what can be attained by the work unit or university					
54	Articulating a vision which is relevant to the values, ideals, and needs of the people					
55	Communicating the vision with colorful and emotional language					
56	Using vivid imagery, metaphors, stories, symbols and slogans to communicate the vision.					
57	Building confidence among the people that they will be successful in implementing change programs.					
58	Avoiding the development of visions based on false assumptions					
59	Avoiding wishful thinking					
60	Avoiding taking actions that can divert attention from innovative solutions					
61	Avoiding pursuing a risky and unrealistic vision that can result to Leadership Performance decline					
62	Encouraging people to look at problems from different perspectives					
63	Encouraging people to think outside the box when solving problems					
64	Encouraging people to experiment with new ideas					
65	Encouraging people to find ideas in other fields that can be applied to their current problem or task					
66	Creating a climate of psychological safety and mutual trust in the university					
67	Encouraging people to suggest novel ideas					
68	Creating an organizational culture that values creativity and entrepreneurial activities					
69	Providing opportunities and resources to develop new products or services					
70	Serving as a champion or sponsor for acceptance of innovative proposals					
71	Offering ideas about new and different ways of doing things					
72	Seeing possibilities rather than problems					
73	Encouraging thinking along new ideas					
74	Liking to discuss new ideas					
75	Supporting the activities used to discover new knowledge, such as research or small-scale experiments					
76	Supporting the activities to acquire new knowledge from external resources					
77	Using practices to facilitate learning such as benchmarking or after-activity reviews					
78	Providing resources and opportunities to test new ideas					
79	Creating a climate of psychological safety among the people to increase learning from mistakes and failures					
80	Avoiding common tendencies to misinterpret causes and over-generalize implications					
81	Helping the people to better recognize failures					
82	Helping the people to analyze their causes					
83	Helping the people to identify remedies to avoid future recurrence					
84	Influencing how new knowledge or a new technology is diffused and applied in the university by explaining why it is important					
85	Guiding the people how to use new knowledge or technology at the university					
86	Encouraging the use of knowledge sharing programs among the people					

87	Helping people develop a better understanding about the determinants of organizational Leadership Performance					
88	Using more accurate, shared mental models to make strategic decisions or Leadership Performance improvements					
89	Making quick decisions when necessary					
90	Being willing to take risks in decisions					
91	Trying to remove the obstacles related to maintaining the status quo					
92	Making Personal sacrifices to pursue a vision or innovative Strategy					
93	Having some charisma attribution					
94	Monitoring the external environment and identify threats and opportunities for the university					
95	Being sensitive to the information regarding concerns of customers and clients					
96	Being sensitive to the information regarding the availability of suppliers and vendors					
97	Being sensitive to the information regarding the actions of competitors					
98	Being sensitive to the information regarding the market trends					
99	Being sensitive to the information regarding the economic conditions					
100	Being sensitive to the information regarding the government policies					
101	Being sensitive to the information regarding the technological developments					
102	Analyzing and interpreting the gathered information form the environment					
103	Monitoring the external environment more when the university is highly dependent on outsiders					
104	Monitoring the external environment more when the environment is rapidly changing					
105	Monitoring the external environment more when the university faces severe competition or serious threats from outside enemies					

E. Generic Competency (10 items)

How important do you believe each of the following **GENERIC COMPETENCIES** is for **EFFECTIVE PERFORMANCE** in your current role?

No.	Items	Importance for effective Leadership Performance				
		Low	Low to medium	Medium	Medium to high	High
106	Understanding the role of risk management and litigation in my work					
107	Understanding how universities operate					
108	Understanding of industrial relations issues and processes as they apply to higher education					
109	Being able to help my staff learn how to deliver necessary changes effectively					
110	An ability to chair meetings effectively					
111	Having sound administrative and resource management skills					
112	Being able to manage my own ongoing professional learning and development					
113	Being able to use IT effectively to communicate and perform key work functions					
114	Being able to organize my work and manage time effectively					
115	Being able to make effective presentations to a range of different groups					

F. Role-specific Competency (6 items)

How important do you believe each of the following **ROLE-SPECIFIC COMPETENCIES** is for **EFFECTIVE PERFORMANCE** in your current role?

No.	Items	Importance for effective Leadership Performance				
		Low	Low to medium	Medium	Medium to high	High
116	Understanding how to develop an effective higher education learning program					
117	Having a high level of up-to-date knowledge of what engages university students in productive learning					
118	Understanding how to design and conduct an evaluation of a higher education learning program					
119	Understanding how to implement successfully a new higher education program					
120	Being on top of current developments in Learning and Teaching					
121	Knowing how to identify and disseminate good learning and management practice across the unit or university					

G. Leadership Performance effectiveness (25 items)

In your view, how important should each of the following indicators be as a criterion for judging **EFFECTIVE PERFORMANCE** in your current role?

No.	Items	Importance as a criterion for judging effectiveness in my role				
		Low	Low to medium	Medium	Medium to high	High
122	Achieving goals set for your own professional development					
123	Establishing a collegial working environment					
124	Formative involvement of external stakeholders in your work					
125	Having high levels of staff support					
126	Producing future Learning and Teaching leaders					
127	Achieving high-quality graduate outcomes					
128	Enhanced representation of equity groups					
129	Improving student satisfaction ratings for Learning and Teaching					
130	Increased student retention rates					
131	Producing significant improvements in Learning and Teaching quality					
132	Winning Learning and Teaching awards and prizes					
133	Achieving a high profile for your area of responsibility					
134	Achieving positive outcomes from external reviews of the area					
135	Being invited to present to key groups on Learning and Teaching					
136	Publishing refereed papers and reports on Learning and Teaching					
137	Receiving positive user feedback for your area of responsibility					
138	Achieving a positive financial outcome for your area of responsibility					
139	Meeting student load targets					
140	Securing competitive funds related to Learning and Teaching					
141	Winning resources for your area of responsibility					
142	Bringing innovative policies and practices into action					

143	Delivering agreed tasks or projects on time and to specification					
144	Delivering successful team projects in Learning and Teaching					
145	Producing successful learning systems or infrastructures					
146	Successful implementation of new initiatives					

Thank you for participating in this study.

Appendix E: Actual Study (LIMEO-2 Study) Instrument



A Survey on Capabilities and Competencies Related to Leadership Performance Effectiveness in the Context of Change in Malaysian Higher Education Institutions

**Dear Respectable Tan Sri, Dato, Datin, Professor, Associate Prof, Dr., Sir, Madam,
Sincere greetings and best regards to you.**

You have been selected to be a respondent for this survey because of your prominent leadership role in your institution and you somehow affect decision-making, policies, and management of your faculty and university.

The title of this study is “**Capabilities and Competencies Related to Leadership Performance Effectiveness in the Context of Change in Malaysian Higher Education Institutions**”.

Your voluntariness, sincerity, and truthfulness in answering the survey completely is critical for determining the actual scenario of the Malaysian HE, especially regarding leadership and management. Please answer all items.

The research team greatly appreciates and is thankful to you for the time and effort in answering this survey.

Thank you.

Professor Datuk Dr. Sufean Bin Hussin (Principal Researcher)

Majid Ghasemy (Research Manager)

Faculty of Education

University of Malaya

NOTES OF CLARIFICATION AND GUIDELINE

As top-level leaders and managers in an academic organization, we have certain goals, expectations, values, best practices, and behaviors closely bound to our roles and functions. Our Leadership Performance level and effectiveness are also closely bound to the roles and functions, which usually can affect sustainability and quality of the organization.

*. The purpose of administering this survey is to analyze the extent to which Leadership Capabilities and competencies of academic leaders in Malaysian public and private universities explain Leadership Performance in the academic organizational setting.

*. In this study, capabilities refer to leadership qualities which include Personal, Interpersonal and Change-oriented Capability. In addition, competencies refer to management qualities and include Generic and Role-specific Competency. Leadership Performance also refers to different types of outcomes in the academic organizational setting.

*. Completing this survey won't take more than 30-40 minutes of your valuable time and you can be assured that all information will be treated with the strictest confidentiality. The survey form has three main sections: Part I on Background Information of Respondents (12 questions), Part II on Capabilities, Competencies and Leadership Performance (87 questions) and Part III on Open-ended Questions (4 questions). All items in Part II are rated with an ordinal scale: from 1 (low importance) to 5 (high importance).

*. Your truthfulness and honesty in answering this survey will determine the quality of data and findings.

*. We render our greatest gratitude for your kindness and assistance in answering this survey. We understand and we are aware of the time pressure of your very busy work schedule. However, the knowledge derived from this study will yield some important benefits to leadership and management effectiveness in Malaysian HEIs in the future.

*. Million thanks to you and we wish you success in your academic and leadership endeavors.

Section 1: Participant's Profile

1	Your gender	Male	
		Female	
2	Your age group	Under 36	
		36-45	
		46-55	
		56-65	
		Over 65	
3	Your marital statuses	single	
		Married	
4	Your academic qualification	Professor	
		Associate professor	
		Assistant professor/ Senior lecturer	
		other	
5	Your main disciplinary background	Agriculture and environmental studies	
		Architecture and building	
		Education	
		Engineering and technology	
		Health	
		Information technology (IT)	
		Law	
		Management and commerce	
		Nature and physical sciences	
		Society and culture	
Other			
6	Your university	Universiti Malaya (UM)	
		Universiti Kebangsaan Malaysia (UKM)	
		Universiti Putra Malaysia (UPM)	
		Universiti Sains Malaysia (USM)	
		Universiti Teknologi Malaysia (UTM)	
		Universiti Tun Hussein Onn Malaysia (uTHM)	
		Universiti Utara Malaysia (UUM)	
		Universiti Pertahanan Nasional Malaysia (UPNM)	
		Universiti Teknikal Malaysia Melaka (UTeM)	
		Universiti Sains Islam Malaysia (USIM)	
		Universiti Malaysia Pahang (UMP)	

		Universiti Pendidikan Sultan Idris (UPSI)	
		Universiti Teknologi MARA (UiTM)	
		International Centre for Education in Islamic Finance (INCEIF)	
		Universiti Tunku Abdul Rahman (UTAR)	
		Penang Medical College (PMC)	
		Wawasan Open University (WOU)	
		Curtin University	
		Swinburne University of Technology	
		Cyberjaya University College of Medical Sciences (CUCMS)	
		Universiti Tenaga Nasional (UNITEN)	
		Taylor's University	
		MULTIMEDIA UNIVERSITY (MMU)	
		MONASH University Malaysia	
		NILAI University	
7	What is your current role?	Vice-chancellor	
		Deputy vice-chancellor	
		Dean	
		Director	
		Deputy dean	
		Deputy director	
		Head of department	
		Full professor (who does not have any roles)	
8	How many years have you held your current role?	Under one year	
		1-3 years	
		4-6 years	
		7-10 years	
		More than 10 years	
9	What was your role immediately prior to your current one?	Vice-chancellor	
		Deputy vice-chancellor	
		Dean	
		Director	
		Deputy dean	
		Deputy director	
		Head of department	
		Full professor	
		other	
10	How many years were you in this prior role?	Under one year	
		1-2 years	
		3-5 years	
		6-10 years	

		More than 10 years	
11	Do you intend to apply for another higher education leadership role in the next five years?	uncertain	
		Yes	
		No	
12	Have you ever had a leadership role outside higher education?	Yes	
		No	

Section 2: Leadership Capabilities, Competencies, and Performance Effectiveness

H. Personal Capability (8 items)

How important do you believe each of the following **PERSONAL CAPABILITIES** is for **EFFECTIVE PERFORMANCE** in your current role?

No.	Items	Importance for effective Leadership Performance				
		Low	Low to medium	Medium	Medium to high	High
MDJ_01	Being confident to take calculated risks					
MDJ_02	Wanting to achieve the best outcome possible					
MDJ_03	Understanding my Personal strengths and limitations and bouncing back from adversity					
MDJ_04	Admitting to and learning from my errors and deferring quick judgments					
MDJ_05	Remaining calm under pressure or when things take an unexpected turn and keeping things in perspective					
MDJ_06	Being willing to take a hard decision					
MDJ_07	Pitching in and undertaking menial tasks when needed					
MDJ_08	Taking responsibility for program activities and outcomes					

I. Interpersonal Capability (9 items)

How important do you believe each of the following **INTERPERSONAL CAPABILITIES** is for **EFFECTIVE PERFORMANCE** in your current role?

No.	Items	Importance for effective Leadership Performance				
		Low	Low to medium	Medium	Medium to high	High
SID_01	Giving and receiving constructive feedback to/from work colleagues and others					
SID_02	Developing and using networks of colleagues to solve key workplace problems					
SID_03	Empathizing and working productively with students from a wide range of backgrounds					
SID_04	Empathizing and working productively with staff and other key players from a wide range of backgrounds					
SID_05	Listening to different points of view before coming to a decision					
SID_06	Developing and contributing positively to team-based programs					
SID_07	Working with very senior people within and beyond my university without being intimidated					
SID_08	Working constructively with people who are 'resistors' or are over-enthusiastic					
SID_09	Motivating others to achieve positive outcomes					

J. Cognitive Capability (13 items)

How important do you believe each of the following **COGNITIVE CAPABILITIES** is for **EFFECTIVE PERFORMANCE** in your current role?

No.	Items	Importance for effective Leadership Performance				
		Low	Low to medium	Medium	Medium to high	High
SAT_01	Having a clear, justified and achievable direction in my area of responsibility					
SAT_02	Making sense of and learning from experience					
SAT_03	Adjusting a plan of action in response to problems that are identified during its implementation					
SAT_04	Setting and justifying priorities for my daily work by using previous experience to figure out issues					

SAT_05	Seeing the best way to respond to a perplexing situation					
SAT_06	Thinking creatively and laterally					
SAT_07	Seeing and then acting on an opportunity for a new direction					
APA_01	Recognizing patterns in a complex situation					
APA_02	Recognizing how seemingly unconnected activities are linked					
APA_03	Identifying from a mass of information the core issue or opportunity in any situation					
APA_04	Knowing that there is never a fixed set of steps for solving workplace problems					
APA_05	Tracing out and assessing the likely consequences of alternative courses of action					
APA_06	Diagnosing the underlying causes of a problem and taking appropriate action to address it					

K. Change-oriented Capability (26 items)

How important do you believe each of the following **CHANGE-ORIENTED CAPABILITIES** is for **EFFECTIVE PERFORMANCE** in your current role?

No.	Items	Importance for effective Leadership Performance				
		Low	Low to medium	Medium	Medium to high	High
SES_01	Being sensitive to the information regarding the technological developments					
SES_02	Monitoring the external environment more when the university is highly dependent on outsiders, faces severe competition and the environment is rapidly changing					
SES_03	Using more accurate, shared mental models to make strategic decisions or Leadership Performance improvements					
SES_04	Explaining about undesirable outcomes that are likely to occur if new opportunities are exploited by competitors					
SES_05	Influencing how new knowledge or a new technology is diffused and applied in the university by explaining why it is important					
SES_06	Identifying environmental threats and opportunities for the university and interpreting the collected information					
SES_07	Being sensitive to the information regarding political issues (e.g. governmental policies and actions of competitors)					
SES_08	Helping the people to better recognize failures					
SES_09	Encouraging the use of new technology and knowledge sharing programs among the people at the university					
SOC_01	Explaining why the change is necessary and needed					
SOC_02	Creating a climate of psychological safety and mutual trust in the university					
SOC_03	Creating an organizational culture that values creativity and entrepreneurial activities					
SOC_04	Providing information showing how similar work units or competitors have better Leadership Performance					
SOC_05	Providing resources for the people to increase learning from mistakes and failures					
SOC_06	Building confidence among the people that they will be successful in implementing change programs					
TOB_01	Being willing to take risks in decisions					
TOB_02	Offering ideas about new and different ways of doing things and accepting innovative proposals					
TOB_03	Seeing possibilities rather than problems					
TOB_04	Liking and encouraging to discuss new ideas					
TOB_05	Supporting the activities to facilitate learning and acquire new knowledge from research, small-scale experiments and external resources					
HCOF_01	Avoiding taking actions that can divert attention from innovative solutions					
HCOF_02	Avoiding the development of visions based on false assumptions					
HCOF_03	Avoiding pursuing a risky and unrealistic vision that can result to Leadership Performance decline					
OOb_01	Trying to remove the obstacles related to maintaining the status quo					
OOb_02	Communicating the vision with colorful and emotional language					
OOb_03	Making quick decisions when necessary					

L. Generic Competency (8 items)

How important do you believe each of the following **GENERIC COMPETENCIES** is for **EFFECTIVE PERFORMANCE** in your current role?

No.	Items	Importance for effective Leadership Performance				
		Low	Low to medium	Medium	Medium to high	High
BPD_01	Being able to organize my work and manage time effectively					
BPD_02	Being able to make effective presentations to a range of different groups					
BPD_03	Having sound administrative and resource management skills					
BPD_04	Being able to use IT effectively to communicate and perform key work functions and enhance my professional development					
UOR_01	Understanding of industrial relations issues and processes as they apply to higher education					
UOR_02	Being able to help my staff learn how to deliver necessary changes effectively					
UOR_03	Understanding the role of risk management and litigation in my work					
UOR_04	Understanding how universities operate					

M. Role-specific Competency (4 items)

How important do you believe each of the following **ROLE-SPECIFIC COMPETENCIES** is for **EFFECTIVE PERFORMANCE** in your current role?

No.	Items	Importance for effective Leadership Performance				
		Low	Low to medium	Medium	Medium to high	High
BSP_01	Understanding how to develop and evaluate an effective higher education learning program					
BSP_02	Knowing how to identify and disseminate good learning and management practice across the unit or university					
BSP_03	Having a high level of up-to-date knowledge of what engages university students in productive learning					
BSP_04	Being on top of current developments in Learning and Teaching					

N. Leadership Performance effectiveness (19 items)

In your view, how important should each of the following indicators be as a criterion for judging **EFFECTIVE PERFORMANCE** in your current role?

No.	Items	Importance as a criterion for judging effectiveness in my role				
		Low	Low to medium	Medium	Medium to high	High
RP_01	Achieving positive outcomes from external reviews of the area					
RP_02	Securing competitive funds related to Learning and Teaching as well as to the area of responsibility					
RP_03	Bringing innovative policies and practices into action					
RP_04	Achieving a high profile for your area of responsibility					
RP_05	Being invited to present to key groups on Learning and Teaching					
RP_06	Winning Learning and Teaching awards and prizes					
RP_07	Meeting student load targets					
RP_08	Publishing refereed papers and reports on Learning and Teaching					
RP_09	Receiving positive user feedback for your area of responsibility					
RP_10	Delivering agreed tasks or projects on time and to specification					
RP_11	Successful implementation of new initiatives					
APE_01	Establishing a collegial working environment					
APE_02	Improving student satisfaction ratings for Learning and Teaching					
APE_03	Enhanced representation of equity groups					
APE_04	Having high levels of staff support					
APE_05	Achieving goals set for your own professional development					
APE_06	Producing successful learning systems or infrastructures					
APE_07	Delivering successful team projects in Learning and Teaching					
APE_08	Producing future Learning and Teaching leaders					

Section 3: Open-ended Questions

100. What are the priorities for doing the job in your current role? (you can mention up to ten priorities in descending order from the most significant to the least significant priority)

101. What are the values that you consider important in doing your job effectively? (you can mention up to ten values in descending order from the most significant to the least significant value)

102. What are the main challenges that you face in doing the job in your current role? (you can mention up to ten challenges in descending order from the most significant to the least significant challenge)

103. Given the challenges that you face in doing the job in your current role, what are the suggestions to resolve these challenges?

Thank you very much for your participation in this study.

Appendix F: A Comparison Among the ALTC, ATEM, and LIMEO (1 &

2) Studies

Means and Ranks of Items in Personal Capability Scale

No.	Subscale	Item	ALTC (N= 513)		ATEM (N= 159)		LIMEO (N=458)	
			Mean	Rank	Mean	Rank	Mean	Rank
1	Self-regulation	Deferring judgment and not jumping in too quickly to resolve a problem	4.25	11	4.27	12	4.29*	10
2		Understanding my Personal strengths and limitations	4.56	3	4.58	2	4.66*	2
3		Admitting to and learning from my errors	4.49	5	4.44	7	4.61*	5
4		Bouncing back from adversity	4.31	9	4.49	4	4.20*	11
5		Remaining calm under pressure or when things take an unexpected turn	4.59	2	4.71	1	4.59*	6
6	Decisiveness	Being willing to take a hard decision	4.43	7	4.55	3	4.33	9
7		Being confident to take calculated risks	4.24	12	4.29	11	4.17	12
8		Tolerating ambiguity and uncertainty	4.12	13	4.29	10	3.87*	13
9		Being true to one's Personal values and ethics	4.61	1	4.47	5	4.63*	3
10	Commitment	Having energy, passion and enthusiasm for Learning and Teaching	4.54	4	4.36	9	4.71*	1
11		Wanting to achieve the best outcome possible	4.48	6	4.46	6	4.63	4
12		Taking responsibility for program activities and outcomes	4.31	10	4.18	13	4.48	7
13		Persevering when things are not working out as anticipated	4.36	8	4.37	8	4.41*	8
14		Pitching in and undertaking menial tasks when needed	3.96	14	3.99	14	3.87	14

Note: The means and ranks of the top five ranked items are in bold.
 *. Means are based on LIMEO-1 study with a sample size of 90.

Means and Ranks of Items in Interpersonal Capability Scale

No.	Subscale	Item	ALTC (N= 513)		ATEM (N= 159)		LIMEO (N=458)	
			Mean	Rank	Mean	Rank	Mean	Rank
1	Influencing	Influencing people's behaviour and decisions in effective ways	4.28	4	4.49	3	4.29*	9
2		Understanding how the different groups that make up my university operate and influence different situations	4.13	8	4.28	6	4.39*	6
3		Working with very senior people within and beyond my university without being intimidated	4.07	9	4.23	7	4.17	10
4		Motivating others to achieve positive outcomes	4.45	3	4.50	2	4.55	2
5		Developing and using networks of colleagues to solve key workplace problems	4.21	7	4.16	9	4.31	8
6		Giving and receiving constructive feedback to/from work colleagues and others	4.22	6	4.20	8	4.48	3
7	Empathizing	Empathizing and working productively with students from a wide range of backgrounds	3.99	10	2.83	10	4.32	7
8		Empathizing and working productively with staff and other key players from a wide range of backgrounds	4.58	2	4.49	3	4.44	5
9		Developing and contributing positively to team-based programs	4.25	5	4.29	5	4.47	4
10		Being transparent and honest in dealings with others	4.72	1	4.71	1	4.72*	1

Note: The means and ranks of the top five ranked items are in bold.
 *. Means are based on LIMEO-1 study with a sample size of 90.

Means and Ranks of Items in Cognitive Capability Scale

No.	Subscale	Item	ALTC (N= 513)		ATEM (N= 159)		LIMEO (N=458)	
			Mean	Rank	Mean	Rank	Mean	Rank
1	Diagnosis	Diagnosing the underlying causes of a problem and taking appropriate action to address it	4.48	3	4.50	1	4.45	6
2		Recognizing how seemingly unconnected activities are linked	4.08	11	4.18	10	4.01	12
3	Strategy	Seeing and then acting on an opportunity for a new direction	4.17	9	4.10	11	4.38*	8
4		Tracing out and assessing the likely consequences of alternative courses of action	4.18	8	4.30	6	4.18	11
5		Using previous experience to figure out what's going on when a current situation takes an unexpected turn	4.13	10	4.27	8	4.42*	7
6		Thinking creatively and laterally	4.49	2	4.33	5	4.51	3
7		Having a clear, justified and achievable direction in my area of responsibility	4.33	5	4.26	9	4.69	1
8		Seeing the best way to respond to a perplexing situation	4.33	6	4.49	2	4.29	9
9		Setting and justifying priorities for my daily work	4.06	12	4.03	12	4.48*	4
10	Flexibility and Responsiveness	Adjusting a plan of action in response to problems that are identified during its implementation	4.40	4	4.44	3	4.46	5
11		Making sense of and learning from experience	4.50	1	4.38	4	4.56	2
12		Knowing that there is never a fixed set of steps for solving workplace problems	4.20	7	4.27	7	4.28	10

Note: The means and ranks of the top five ranked items are in bold.

*. Means are based on LIMEO-1 study with a sample size of 90.

Means and Ranks of Items in Competencies Scale

No.	Subscale	Item	ALTC (N= 513)		ATEM (N= 159)		LIMEO (N=458)	
			Mean	Rank	Mean	Rank	Mean	Rank
1	University Operations	Understanding the role of risk management and litigation in my work	3.35	11	3.65	11	4.12	12
2		Understanding how universities operate	4.20	3	4.41	2	4.43	2
3		Understanding of industrial relations issues and processes as they apply to higher education	3.17	12	3.42	12	4.12	11
4		Being able to help my staff learn how to deliver necessary changes effectively	4.08	7	4.25	4	4.30	10
5		An ability to chair meetings effectively	4.10	6	3.80	8	4.57*	3
6		Having sound administrative and resource management skills	4.24	2	4.35	3	4.41	6
7	Self-organization Skills	Being able to manage my own ongoing professional learning and development	3.78	10	3.84	7	4.47*	4
8		Being able to use IT effectively to communicate and perform key work functions	3.98	8	4.03	5	4.39*	8
9		Being able to organize my work and manage time effectively	4.56	1	4.44	1	4.60	1
10		Being able to make effective presentations to a range of different groups	4.15	4	3.86	6	4.40	7
11	Learning and Teaching	Having a high level of up-to-date knowledge of what engages university students in productive learning	3.92	9	3.72	10	4.46*	5
12		Understanding how to implement successfully a new higher education program	4.13	5	3.79	9	4.39*	9

Note: The means and ranks of the top five ranked items are in bold.

*. Means are based on LIMEO-1 study with a sample size of 90.

Means and Ranks of Items in Leadership Performance Scale

No.	Subscale	Item	ALTC (N= 513)		ATEM (N= 159)		LIMEO (N=458)	
			Mean	Rank	Mean	Rank	Mean	Rank
1	Personal and Interpersonal Outcomes	Achieving goals set for your own professional development	3.41	17	3.57	12	4.32	9
2		Establishing a collegial working environment	4.27	4	4.15	7	4.44	4
3		Formative involvement of external stakeholders in your work	3.37	19	3.15	16	4.20*	16
4		Having high levels of staff support	3.92	11	4.32	4	4.43	5
5		Producing future Learning and Teaching leaders	3.64	15	3.49	14	4.40	7
6	Learning and Teaching Outcomes	Achieving high-quality graduate outcomes	4.37	1	2.46	21	4.60*	1
7		Enhanced representation of equity groups	3.26	20	2.86	19	3.98	22
8		Improving student satisfaction ratings for Learning and Teaching	4.14	7	2.91	18	4.42	2
9		Increased student retention rates	3.44	16	2.71	20	4.27*	13
10		Producing significant improvements in Learning and Teaching quality	4.31	3	4.45	2	4.49*	6
11	Recognition and Reputation	Achieving a high profile for your area of responsibility	3.93	10	3.55	13	4.12	19
12		Achieving positive outcomes from external reviews of the area	4.02	9	3.77	10	4.12	18
13		Being invited to present to key groups on Learning and Teaching	2.96	22	2.94	17	3.91	23
14		Publishing refereed papers and reports on Learning and Teaching	2.94	23	2.06	23	4.00	21
15		Receiving positive user feedback for your area of responsibility	4.10	8	4.07	8	4.29	11
16	Financial Performance	Achieving a positive financial outcome for your area of responsibility	3.39	18	3.71	11	4.17*	17
17		Meeting student load targets	3.13	21	2.27	22	4.05	20
18		Winning resources for your area of responsibility	3.66	14	3.31	15	4.23*	15
19	Effective Implementation	Bringing innovative policies and practices into action	4.21	6	4.23	6	4.26	14
20		Delivering agreed tasks or projects on time and to specification	4.23	5	4.46	1	4.46	3
21		Delivering successful team projects in Learning and Teaching	3.81	12	4.32	5	4.28	12
22		Producing successful learning systems or infrastructures	3.81	13	3.94	9	4.31	10
23		Successful implementation of new initiatives	4.32	2	4.41	3	4.34	8

Note: The means and ranks of the top five ranked items are in bold.

*. Means are based on LIMEO-1 study with a sample size of 90.

Scale Average Comparison among ALTC, ATEM, and LIMEO Studies

Scale Average Comparison			
Scale Name	ALTC	ATEM	LIMEO
Personal Capability scale	4.375	4.389	4.388
Interpersonal Capability scale	4.290	4.218	4.414
Cognitive Capability scale	4.279	4.296	4.392
Competencies scale	3.972	3.963	4.388
Leadership Performance effectiveness scale	3.767	3.527	4.265
Grand average	4.137	4.079	4.369

Note.
The largest mean score for each scale is in **bold**
The largest mean score for each study is in *italic*

Appendix G: Supplementary Tables for Research Question 2-i

Cronbach's Alpha, Composite Reliability, and AVE of the Constructs in Low-Current-Tenure and High-Current-Tenure Leaders Models

Constructs	Low-Current-Tenure Leaders Model			High-Current-Tenure Leaders Model		
	Cronbach's Alpha	Composite Reliability	AVE	Cronbach's Alpha	Composite Reliability	AVE
APE	0.85	0.893	0.627	0.789	0.877	0.704
BPD	0.803	0.872	0.631	0.786	0.862	0.61
Change-oriented	0.939	0.946	0.522	0.946	0.953	0.574
Generic	0.872	0.899	0.527	****	****	****
Interpersonal	0.83	0.875	0.54	0.793	0.866	0.619
Performance	0.88	0.904	0.513	0.888	0.913	0.601
Personal	0.779	0.849	0.529	0.749	0.842	0.575
RP	0.758	0.847	0.581	0.784	0.861	0.609
Role-specific	0.875	0.915	0.729	0.832	0.889	0.669
SES	0.883	0.911	0.631	0.894	0.919	0.655
SOC	0.875	0.906	0.615	0.863	0.907	0.711
TOB	0.858	0.904	0.701	0.899	0.926	0.714
UOR	0.79	0.864	0.614	****	****	****

Discriminant Validity of the Constructs in Low-Current-Tenure and High-Current-Tenure Leaders Models on the Basis of HTMT_{0.9} criterion

Low- Current-Tenure Leaders Model						
Constructs	Change-oriented	Generic	Interpersonal	Performance	Personal	Role-specific
Change-oriented	****					
Generic	0.837	****				
Interpersonal	0.77	0.739	****			
Performance	0.802	0.833	0.732	****		
Personal	0.696	0.683	0.763	0.566	****	
Role-specific	0.801	0.873	0.638	0.834	0.592	****
High- Current-Tenure Leaders Model						
Constructs	Change-oriented	Generic	Interpersonal	Performance	Personal	Role-specific
Change-oriented	****					
Generic	0.825	****				
Interpersonal	0.726	0.855	****			
Performance	0.805	0.877	0.766	****		
Personal	0.731	0.725	0.765	0.446	****	
Role-specific	0.846	0.786	0.751	0.842	0.707	****

Final Path Coefficients Assessment in Low-Current-Tenure and High-Current-Tenure Leaders Models

Paths	Low-Current-Tenure Leaders Model			High-Current-Tenure Leaders Model		
	Original Sample	T Statistics	P Values	Original Sample	T Statistics	P Values
Change-oriented -> Performance	0.224	3.4	0.001	0.458	3.595	0.000
Generic -> Performance	0.215	2.795	0.005	****	****	****
Interpersonal -> Performance	0.17	2.872	0.004	****	****	****
Role-specific -> Performance	0.313	4.628	0.000	0.378	3.263	0.001

Collinearity Assessment Among the Latent Variables in Low-Current-Tenure and High-Current-Tenure Leaders Models

Exogenous Constructs	Low-Current-Tenure Leaders Model	High-Current-Tenure Leaders Model
	VIF	VIF
Change-oriented	3.168	2.321
Generic	3.187	****
Interpersonal	2.016	****
Role-specific	2.725	2.321

R², Adjusted R², and Q² for the Endogenous Constructs in Low-Current-Tenure and High-Current-Tenure Leaders Models

Endogenous Construct	Low-Current-Tenure Leaders Model			High-Current-Tenure Leader Model		
	R ²	Adjusted R ²	Q ²	R ²	Adjusted R ²	Q ²
Performance	0.658	0.653	0.334	0.614	0.6	0.349

f² and q² Effect Sizes of the Exogenous Constructs on Model's Predictive Accuracy and Relevance in Low-Current-Tenure and High-Current-Tenure Leaders Models

Exogenous Constructs	Low-Current-Tenure Leaders Model		High-Current-Tenure Leaders Model	
	f ²	q ²	f ²	q ²
Change-oriented	0.05	0.01	0.23	0.08
Generic	0.04	0.01	****	****
Interpersonal	0.04	0.01	****	****
Role-specific	0.11	0.03	0.16	0.05

Appendix H: Supplementary Tables for Research Question 2-ii

Cronbach's Alpha, Composite Reliability, and AVE of the Constructs in University-Faculty and Department-Individual Professorial Level Leaders Models

Constructs	University-Faculty Level Leaders Model			Department-Individual Professorial Level Leaders Model		
	Cronbach's Alpha	Composite Reliability	AVE	Cronbach's Alpha	Composite Reliability	AVE
APE	0.846	0.907	0.766	0.863	0.898	0.597
BPD	0.769	0.868	0.688	0.776	0.856	0.599
Change-oriented	0.93	0.941	0.616	0.947	0.953	0.528
Generic	0.852	0.89	0.576	0.875	0.902	0.536
HCOF	0.849	0.909	0.768	0.821	0.893	0.737
Interpersonal	0.809	0.874	0.636	0.814	0.867	0.523
Performance	0.836	0.885	0.606	0.893	0.913	0.513
RP	0.663	0.856	0.748	0.751	0.843	0.573
Role-specific	0.888	0.93	0.817	0.921	0.962	0.927
SES	0.875	0.914	0.728	0.89	0.914	0.604
SOC	0.818	0.892	0.733	0.876	0.915	0.729
TOB	****	****	****	0.858	0.904	0.702
UOR	0.758	0.862	0.675	0.834	0.889	0.668

Discriminant Validity of the Constructs in University-Faculty and Department-Individual Professorial Level Leaders Models on the Basis of HTMT criterion

University-Faculty Level Leaders Model					
Constructs	Interpersonal	Change-oriented	Generic	Role-specific	Performance
Interpersonal	****				
Change-oriented	0.653	****			
Generic	0.694	0.704	****		
Role-specific	0.636	0.686	0.837	****	
Performance	0.675	0.653	0.85	0.78	****
Department-Individual Professorial Level Leaders Model					
Constructs	Interpersonal	Change-oriented	Generic	Role-specific	Performance
Interpersonal	****				
Change-oriented	0.741	****			
Generic	0.744	0.837	****		
Role-specific	0.638	0.71	0.823	****	
Performance	0.839	0.854	0.867	0.82	****

Final Path Coefficients Assessment Using Bootstrapping Routine in University-Faculty and Department-Individual Professorial Level Leaders Models

University-Faculty Level Leaders Model			
Paths	Original Sample	T Statistics	P Values
Generic -> Performance	0.48	3.099	0.002
Role-specific -> Performance	0.329	2.26	0.024
Department-Individual Professorial Level Leaders Model			
Paths	Original Sample	T Statistics	P Values
Change-oriented -> Performance	0.372	5.051	0

Interpersonal -> Performance	0.292	4.25	0
Role-specific -> Performance	0.337	4.659	0

Collinearity Assessment Among the Latent Variables in University-Faculty and Department-Individual Professorial Level Leaders Models

Exogenous Constructs	University-Faculty Level Leaders Model	Department-Individual Professorial Level Leaders Model
	VIF	VIF
Generic	2.165	2.264
Interpersonal	****	1.82
Role-specific	2.165	1.882

R², Adjusted R², and Q² for the Endogenous Constructs in University-Faculty and Department-Individual Professorial Level Leaders Models

Endogenous Construct	University-Faculty Level Leaders Model			Department-Individual Professorial Level Leaders Model		
	R ²	Adjusted R ²	Q ²	R ²	Adjusted R ²	Q ²
Performance	0.569	0.556	0.306	0.754	0.747	0.377

f² Effect Sizes of the Exogenous Constructs on Model's Predictive Accuracy and Relevance in University-Faculty and Department-Individual Professorial Level Leaders Models

Exogenous Constructs	University-Faculty Level Leaders Model		Department-Individual Professorial Level Leaders Model	
	f ²	q ²	f ²	q ²
Generic	0.25	0.06	****	****
Role-specific	0.12	0.02	0.246	0.05
Change-oriented	****	****	0.249	0.048
Interpersonal	****	****	0.19	0.034

Appendix I: Examples of Categorization of the Collected Data to Answer

Research Question 3

A. Examples of respondents' statements for the priorities

1. Achieving Goals, KPIs, & Standards
 - Achieving department goals
 - Achieving set targets for department/section
 - Ensure the laboratory meets the KPI set by the university
 - Excellent output
 - Goals of academic programs are achieved
 - Meet the target in teaching
 - Optimal output
2. Teaching & Delivering Programs
 - Teaching
 - Teaching & learning
 - Teaching & learning activities + exams
 - Teaching and sharing knowledge
 - Teaching and supervising
 - Teaching courses related to my fields of specialization
 - Teaching undergraduate
 - Deliver lecture to students according based on stated outcome
 - Improving teaching and learning
 - Educational quality in deliverance
 - Good teaching pedagogy
3. Undertaking Research
 - Research
 - Research activities
 - Research and grant application
 - Research and innovation
 - Research and publication
 - Develop multi-disciplinary research
 - Ensuring high quality research
 - Personal research project implementation
 - Research which are relevant and addresses national health problems
 - Research with respect to my area of specialization
4. Producing Publications
 - Journal publication
 - Publication
 - Publication every year
 - Publication in high index journal
 - Publish in refereed journal
 - Publishing ISI articles in ISI rated journals
 - Writing research and conceptual based papers for journals (local and international but not necessarily ISI requirement)
 - Writing and exploring new areas and ideas through books as a legacy to be passed on to the future generation
 - Write practical and useful papers
5. Finance, Budgeting, Grants, & Fundraising
 - Research grant application
 - Research grants equally [being] distributed between academics
 - Securing fund
 - Securing research grant (national & international)
 - Attracting external funds
 - Encourage applications for international and industrial research grants

- Generate income
 - My outfit can make monetary contribution to the university
 - Reducing cost
6. Students Development, Expertise, & Employability
 - Flourish student soft skills
 - Graduate employability
 - Producing able and competent undergraduate and postgraduate students
 - Producing PhDs & Masters with high research skills
 - Quality graduates who are highly employable
 - Student development program
 - Students must leave the university with values and skills, not just leave with certificate
 7. Recognition, Image, & Rank
 - Recognition
 - All staff are known for their specialties
 - Bring the image of the institution in good shape
 - International recognition of program in terms of influence
 - National recognition in terms of relevance of program
 8. Students Supervision
 - Supervising postgraduate research
 - Supervision of master and PhD students towards the development of either intellectual capabilities and competencies
 - Teaching and supervising
 - Postgraduate supervision
 9. Performing Department & Faculty Routines
 - Department activities
 - Faculty activities/committees
 - Keep up with academic matters
 - Getting faculty journals indexed in Scopus and ISI
 - Revise the lecture notes
 - Maintaining the academic schedule to be on time
 10. Students Affairs Management
 - Make sure students' lives are comfortable for learning process
 - Promoting student's mobility
 - Student welfare
 - Students' needs and complaints
 - Student projects

B. Examples of respondents' statements for the values

1. Honesty & Integrity
 - Honesty
 - Integrity
 - Integrity in professional and social role
2. Trustworthiness, Truthfulness, & Sincerity
 - Sincerity
 - Be truthful
 - Trustworthiness
3. Commitment, Passion, & Loyalty
 - Commitment and dedication
 - Commitment to serve community in need
 - Full commitment to the job
 - Loyal and dedicated to the university
4. Hard-working, Diligence, & Persistence
 - Perseverance
 - Never give up
 - Strives for excellent through progressive improvement
 - Hardworking
5. Team-working

- Working in team
 - To believe in team work spirit
6. Responsibility
 - High sense of responsibility for the job
 - Be responsible
 - Give my best shot in my current responsibility
 7. Patience & Tolerance
 - Able to cope with stress or problems
 - Be patient and rationale all the time
 - To learn how to be patient
 8. Communication
 - Able to communicate
 - Clear communications, top-down and bottom-up
 - Listen to others for feedback
 9. Kindness, Empathy, & Sympathy
 - Compassionate
 - Sympathy
 - Humanity
 - Kindness
 10. Creativity & Innovation
 - Creative & innovative
 - Original ideas

C. Examples of respondents' statements for the challenges

1. Finance, Budgeting, Grants, & Fundraising
 - Financial restrictions
 - Getting funding for research
 - Lack of funds i.e. research grants
2. Staff Affairs Management
 - Lack of talent pool in the local scene
 - Negative behavior of some staff
3. Maintaining Infrastructures & Facilities
 - Very poor maintenance of essential infrastructure
 - Aging infrastructure/instruments/equipment
4. Time Management
 - Time limitation
 - Not enough time to go through the minutes more thoroughly
 - Limited and last minute instructions
5. Achieving Goals, KPIs, & Standards
 - Very high expectations from university but shrinking budget
 - Overwhelming demand by top authorities
 - High expectations not matched with support
6. Staff Development, Empowerment, & Expertise
 - Insufficient skilled manpower
 - Unskilled support staff
7. Proper Workload & Assignments
 - Large number of top-down requests / activities
 - Too much workload
 - Too much non-academic works that need to be done
8. Reducing Red Tape & Bureaucracy
 - Red tape or too many unnecessary procedures
 - Stifling bureaucracy
 - Too many clerical tasks
9. Students Development, Expertise, & Employability
 - Weak students
 - Students' lack knowledge
 - Finding good post-graduate students
10. Receiving & Providing Support
 - Lack of Support

- Challenges from the top management, e.g., lack of support and understanding
- Getting support of every unit/faculty of the university

D. Examples of respondents' statements for the solutions

1. Finance, Budgeting, Grants, & Fundraising
 - Right investment
 - Explore research funding overseas
 - Binding for external and overseas grant become crucial
2. Staff Affairs Management
 - Distribute tasks according to their importance. Staff distribution in faculties should be fair as faculties cater more students and staffs.
 - Transfer out those staff and maintain colleagues those who are clean-hearted
 - Recruit excellent staff
 - Upgrade nonacademic support with professional development and adequate reward for good work
3. Professional Development Training & Continuous Improvement
 - Send staff for professional development and include CQI as part of the staff KPI
 - Educate staff on quality education and research
4. Communication
 - Better support from the top, provide recognition and support, and communicate more
 - Listen to students
 - Have open communication constantly
 - Writing a memo to everyone may help address the problem of motivation and productivity and managing behaviors
 - Manage expectations with meaningful communication
5. Discussion & Dialogue
 - Talk to them openly of challenges faced
 - Be fair and talk to the staff
 - Discuss with seniors
 - Hold a meeting and gather my team together and discuss the problem and brain storm ways to solve it
 - Constant discussion with higher administrators and reduce micromanagement
6. Maintaining Infrastructures & Facilities
 - Improve resources (physical, financial, human)
 - Maximize current usage of utilities and establishing networking with industries
 - Enough rooms and labs facilities
 - Provide up to date infrastructure/facilities always
 - Producing more from less, managing within critical physical constraints
7. Appreciation, Awareness, & Consciousness
 - Obtain and understand the policy well before implementing the department's strategic planning
 - Understand people
 - More awareness programs
 - Understand the subordinate needs
 - Awareness on career path as academic
8. Appointment, Promotion, & Meritocracy
 - Choose the most capable and sincere Vice Chancellor
 - Time-based promotion
 - Making sure the right person is chosen for any job
 - Select the best for the jobs based on merit
 - Realistic promotion criteria
9. Openness & Open-mindedness
 - Be open to student problems and offer assistance where needed

- More trust and openness among administrators and academics
- Be open to feedback, criticism and suggestion
- University personnel must be open to new and creative ideas
- Making sure that all perspectives are considered before making any decision.

10. General Skills & Knowledge

- Upgrading knowledge & expertise
- Make sure faculty speak and write well in English and Bahasa Malaysia
- Improving language of communication
- Find tech savvy assistants
- Course in ICT