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**TECHNOLOGICAL CAPABILITY PERCEPTION FOR SUSTAINING
COMPETITIVE ADVANTAGE: A CASE STUDY IN DRB-HICOM
UNIVERSITY OF AUTOMOTIVE MALAYSIA**



**DOCTOR OF MANAGEMENT
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COMPETITIVE ADVANTAGE: A CASE STUDY IN DRB-HICOM UNIVERSITY OF
AUTOMOTIVE MALAYSIA**



**Thesis Submitted to
Othman Yeop Abdullah Graduate School of Business,
Universiti Utara Malaysia,
in Fulfilment of the Requirement for the Degree of Doctor of Management**

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ABSTRACT

DRB-HICOM University, formerly known as International College of Automotive, offers programmes that focus more on automotive technology. The recent transition from a College to a University requires the staff to experience change management in the organization. The purpose of this study was to examine the attitude of students and staff, subjective norms and perceived behavioural control effect of technological capability perception towards sustaining competitive advantage and change management in DRB-HICOM University. The Theory of Planned Behaviour (TPB) was adopted with the introduction of technological capability perception as the moderator in this study. The mixed data collection (quantitative and qualitative) method was used to collect data from the students and the staff. A total of 287 questionnaire were distributed to the students in semester three and above, and 273 responses were deemed usable. The data were analysed using SPSS and SmartPLS. A focus group interview was conducted among the staff, for qualitative data, and ATLAS.ti was used to analyse the data. The quantitative data showed that students' attitude and subjective norms have a positive relationship. Meanwhile, perceived behavioural control has a negative relationship with intention of DRB-HICOM University to sustain competitive advantage. The qualitative data collected also found that attitude and perceived behavioural control have a positive relationship and subjective norms have a negative relationship with intention of DRB-HICOM University to sustain competitive advantage. Besides, technological capability perception positively moderates the relationship between attitude, subjective norms and perceived behavioural control, and intention of DRB-HICOM University to sustain its competitive advantage. Furthermore, the students' perception of intention towards sustaining competitive advantage mediates the attitude and subjective norms in the actual behaviour. The limitations of the study and recommendations for future research are also discussed in this study.

Keywords: theory of planned behaviour, qualitative, technological capability perception, change management

ABSTRAK

Universiti DRB-HICOM dahulunya dikenali sebagai Kolej Antarabangsa Automotif yang menawarkan pelbagai program, namun ia lebih menumpukan kepada program teknologi automotif. Proses peralihan daripada Kolej kepada Universiti memerlukan perubahan pengurusan dalam kalangan kakitangandalam organisasi tersebut. Tujuan kajian ini dilakukan adalah untuk mengkaji sikap pelajar dan kakitangan, norma subjektif, kawalan tingkah laku anggapan dan persepsi keupayaan teknologi ke arah pengekaln kelebihan daya saing dan perubahan pengurusan di Universiti DRB-HICOM. Justeru, Teori Tingkah Laku Terancang telah digunakan dengan pengenalan persepsi keupayaan teknologi sebagai satu elemen baharu yang diperkenalkan dalam kajian ini. Kaedah pengumpulan data campuran (kuantitatif dan kualitatif) telah digunakan untuk mengumpul data yang diperolehi daripada pelajar dan kakitangan. Sejumlah 287 borang soal selidik telah diedarkan kepada pelajar-pelajar semester ketiga dan ke atas, sebanyak 273 tindak balas telah diterima dan ia dianggap boleh diguna pakai. Data dianalisis dengan menggunakan perisian SPSS dan SmartPLS. Kaedah temubual kumpulan fokus telah dijalankan ke atas kakitangan, manakala perisian ATLAS.ti telah digunakan untuk menganalisis dapatan kajian. Dapatan kajian kuantitatif menunjukkan bahawa sikap pelajar dan norma subjektif mempunyai hubungan yang positif. Manakala kawalan tingkah laku anggapan mempunyai hubungan yang negatif terhadap hasrat Universiti DRB-HICOM untuk mengekalkan kelebihan daya saing. Dapatan kajian kualitatif pula mendapati bahawa sikap dan kawalan tingkah laku anggapan mempunyai hubungan yang positif dan norma subjektif mempunyai hubungan yang negatif terhadap hasrat Universiti DRB-HICOM untuk mengekalkan kelebihan daya saing. Manakala persepsi keupayaan teknologi telah menunjukkan kesan penyederhanaan positif dalam hubungan antara sikap, norma subjektif dan kawalan tingkah laku anggapan, serta hasrat Universiti DRB-HICOM untuk mengekalkan kelebihan daya saing. Tambahan pula, persepsi hasrat pelajar terhadap pengekaln kelebihan daya saing oleh Universiti DRB-HICOM menjadi pemboleh ubah pengantara bagi sikap dan norma subjektif kepada tingkah laku yang sebenar. Kekangan dan cadangan untuk kajian pada masa hadapan juga turut dibincangkan dalam kajian ini.

Kata kunci: teori tingkah laku terancang, kualitatif, persepsi keupayaan teknologi, perubahan pengurusan

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In some organizations, technological capability plays a critical role in enhancing their products and services. It is always embedded in the offering of products and services. When a firm expands its technological capability, it signals a significant investment in innovative work (R&D), including the finding of new products, the gathering for learning stores and the preparation for specialized technical staff (Wolf & Egelhoff, 2002). Rothaermel and Deeds (2004) discovered that any organization having a good innovative product will have a tendency to take part in alliance exploitation experiences that will allow them access to integral holdings, for example, manufacturing. Furthermore promoting assets in place will popularize its new products likely implies to the education industry.

Having good technological capability in terms of teaching and learning can lead to competitive advantage for the institution. Proper coordination of organizational systems can prepare the learners for their future profession, enhance best practices, help in having better activities and captivating high quality learners (Elzarka, 2012). The Malaysia National Education Blueprint 2013-2025 describes the importance of using knowledge, innovation and technology. The Blueprint's prime goal is to prepare students for the future (MOHE, 2013). Undoubtedly, technology is being more widely used to support teaching and learning. This is in view of current engineering offers large portions devices that might make utilized within classrooms will move forward showing and taking in nature (Bruniges, 2003). The Malaysian

industry always looks for graduates with high knowledge and skills. If the guidelines of the National Education Blueprint 2013-2025 are followed, Malaysia would have the capacity to create exceptionally talented and competent human capital to participate globally (Malaysian Productivity Corporation, 2014).

Under the Malaysian education system, according to the Ministry of Education (MOHE, 2013), a child's learning starts with pre-school training at the age of five, primary education at the age of six, secondary education at the age of 13 and tertiary educating beginning at the age of 19. To proceed from one level to another, especially to tertiary level, one must show good academic performance and have the financial capability. School leavers with the *Sijil Pelajaran Malaysia* (SPM) may proceed to the *Sijil Tinggi Pelajaran Malaysia* (STPM) level (form six or matriculation programme or GCE "A" Levels or other pre-college preparation) or proceed to other tertiary levels to obtain a certificate or a diploma. At undergraduate level, various options are available, like certificate, diploma and bachelor's degree, while at post-graduate level, master's and doctorate programmes are available for students. The entry requirement for diploma level is SPM and certificate. Meanwhile, STPM and diploma are required to enrol for a Bachelor's degree programme. Two main departments are involved in education in Malaysia, i.e., pre-tertiary education (starting from pre-school to secondary education and teacher education) under the Department of Education Malaysia; while higher education is under the Department of Higher Education. Table 1.1 below indicates the percentage of highest education attainment of the population aged 15 and above from 1950 to 2010.

Table 1.1
Highest educational attainment of the population aged 15 and above (1950-2010)
Percentage of population

	Years											
	1950 (%)	1955 (%)	1960 (%)	1965 (%)	1970 (%)	1975 (%)	1980 (%)	1985 (%)	1990 (%)	2000 (%)	2005 (%)	2010 (%)
<i>No</i>	60	56	50	44	37	32	28	21	15	12	10	9
<i>Schooling</i>												
<i>Primary</i>	33	35	38	41	43	41	38	33	39	22	18	15
<i>Secondary</i>	6	7	10	13	19	24	31	39	39	56	59	61
<i>Tertiary</i>	1	1	2	2	2	2	3	6	8	10	13	15

Source: Adopted from Malaysia Education Blueprint (2013)

Based on the above statistics, the population percentage has increased gradually for tertiary education from 3% in 1980 to 15% in 2010. This shows the growing demand for public and private higher education in Malaysia. The public tertiary institutions can be categorized into three, namely: university, polytechnics and college/institute. In Malaysia, there are 32 public universities, 30 polytechnics and 159 colleges/institutes registered under the Malaysia Qualifications Register (MQR) (MQR, 2016). The tuition fees of public higher education institutions are somewhat subsidized. Most students are more interested in furthering their studies in public universities due to the lower fees compared to education in tertiary level private institutions. Since the 1970s, private institutions have overwhelmingly come into being as "other opportunity" schools for students who failed to get admission to public institutions (Lee, Lee, & Pennings, 2001). Lee et al. (2001) further described that the continuous demand for government universities, especially from secondary level school leavers, has led to the government universities facing operational constraints, particularly in view of the limited financial allocation from the government. Lee et al. (2001) further portrayed that democratization of education and the growing interest for higher education, have made it difficult for public educational institutions to continue to operate given the financial limitations. This

subsequently has made the government urge private institutions to play a more dynamic role to cater to the increasing demand for tertiary level education. New strategies and capabilities have fortified and improved the private institutions as higher education providers in Malaysia.

Private Higher Education Institutions (HEIs) augment tertiary needs in Malaysia. Private HEIs are an alternative for students who wish to pursue their tertiary education. Private HEIs must follow the criteria set by the Department of Higher Education. Besides that, the MQA is also involved in ensuring the quality of the programmes offered by the private HEIs. It is implemented through a code of practice on the standards and criteria for HEIs operating in Malaysia. The aim of the Ministry of Education is to develop and provide advanced education and nurture human capital who can serve both domestically and globally (MOHE, 2013).

The Ministry of Higher Education is responsible for developing a strategic higher education ecosystem in both public and private institutions in Malaysia. Both institutions play a vital role to produce intellectuals, researchers, experts and a skilled and semi-skilled workforce. Specifically in Malaysia, quality human capital is a crucial pre-requisite to support the nation's growth and progress. As noted, the Private HEIs underpin the country's desire to create quality human capital to guarantee the country's continued development (MOHE, 2013). Private HEIs focus on key targets, including profit, student numbers, student quality, strategic marketing plans and academic staff quality. Under the MQR framework, Private HEIs can be categorized into several categories, namely: College, University College and University. As at December 2016, a total of 375 colleges, 25 University Colleges

and 50 Universities have been registered; of this, one of the institutions is DRB-HICOM University (MQR, 2016). This institution offers various programmes in engineering, business and management, allied health sciences, hospitality and tourism.

1.2 Problem Statement

Private HEIs in Malaysia have a significant role to play to support public higher education. The existence of the Private HEIs complements public tertiary education in Malaysia. The high competition for admission into government universities and the consistent growth of the education industry have given the opportunity for the private HEIs to offer academic programmes at the tertiary education level. Private HEIs provide alternative choices for potential undergraduates to pursue higher education but at higher expenses. Many Private HEIs offer twinning programmes with relevant collaborative bodies to award the degrees. However, Private HEIs have several problems. Many of them lack the infrastructure and working capital, which subsequently restrict their capacity to provide a conducive learning environment, including facilities, teaching staff, etc. (Salleh, 2007). Every educational institution must possess distinctive competitiveness in order to compete with other education institutions. In pursuance of competitive advantages, the critical areas to be focused on include academic staff qualifications, teaching and learning environment, facilities and conduciveness of the campus. In this context, the DRB-HICOM University is considered as one of the private HEIS where the challenges to sustain competitive advantage also come from the areas described above.

The award of University status in 2015 is considered as a new challenge on the grounds of its five years of its establishment. Previous studies have explained the factors for competitive advantage of an educational institution, including teaching and learning competitive edge, technological capability and quality of staff and students. Azar and Nasiri (2014) highlighted the usage of Mobile Assisted Language Learning (MALL) as part of listening skills in the classroom for English language, where it can enhance listening to selected topics using the hand phone. In addition, De Pablos et. al. (2015) conducted studies at the American University of Sharjah, UAE, to examine the usage of iPads in semester one for the mathematics course. The perception of technological capability towards intention to sustain competitive advantage was explored using the Theory of Planned Behaviour (TPB) conducted on the DRB-HICOM University students and staff. Based on the criteria of the Ministry of Higher Education for University status, two major areas are specified, i.e., compulsory criteria (75%) and support criteria (25%). The compulsory criteria covers the maturity of the institution, financial viability, programmes offered, teaching and learning, academic staff, governance, appropriate and reasonably conducive campus, excellent track record, internationalization and report on premise visit; while the support criteria covers vision and mission, programme planning, student support, internal quality control and involvement in research and development activities.

Based on the criteria presented, this study is conducted in DRB-HICOM University (staff and students) to explore the significant effects related to the following areas to sustain competitive advantage for DRB-HICOM University:

1.2.1 Academic staff qualifications

This is supported by Charlotte (2007). It refers to an educator's capability to teach, and provide information which can be effectively applied (Patterson, 2010). Based on the university status requirements, it is compulsory for any education institution to meet the minimum of 20% PhD and 80% Master's Degree holders for its academic staff. About 80% of academic staff must be employed as full-time lecturers and 20% as a part-time lecturers. In May 2011, the HUCSB's Board of Directors (BODs) raised their concern on the arrangements and preparations in a few areas preceding the application for University status. Academic staff quality was cited in the minutes of the meeting of BODs since June 2011. The qualification of the current academic staff is as in in Table 1.2 below.

Table 1.2
Academic Staff Qualification

Year of Projection	PhD. (20%)	Master's (80%)	Bachelor & Diploma	Total
*AMP 2016/17 (University)	28 (20%)	110 (80%)	30	168
Current Status (December 2016)	14 (15%)	50 (54%)	25	89

Source: Annual Management Plan (AMP 2016/2017) for DRB-HICOM U

1.2.2 Teaching and learning

This is in support of student learning and effective teaching (Miles, 2010). Under the Malaysian Qualifications Agency (MQA), the quality evaluation process of the Higher Education Providers (HEPs) covers the following nine areas: vision, mission, instructive objectives and learning results; outline and conveyance of curriculum; students' evaluation; selection of students and provision of services; academic staff;

educational assets; programme observation and evaluation; leadership, administration and organization; and continual quality improvements. The teaching and learning exercises are covered in Part 2 and Part 3 of the Code of Practice for Institutional Audit (COPIA), where it gives HEPs the rules MQA uses in reviewing higher education establishments. Part 2: Outline and Conveyance of Curriculum, concentrates on the educational programmes, the various learning approaches and the areas of specialization. The dynamism of the HEP is reflected by the most recent advancement in the different methodologies through a powerful relationship between educational program substance and current practices controlled by contemplating the present needs of a constantly changing. Part 3 describes that student evaluation is a crucial aspect of quality assurance to measure in detail the achievement of learning outcomes; the result of the assessment is also the basis for awarding qualifications. The methods used for assessing students must be clear, consistent, effective, reliable, in line with current practices and must clearly support the achievement of learning outcomes (Malaysian Qualifications Agency, 2009).

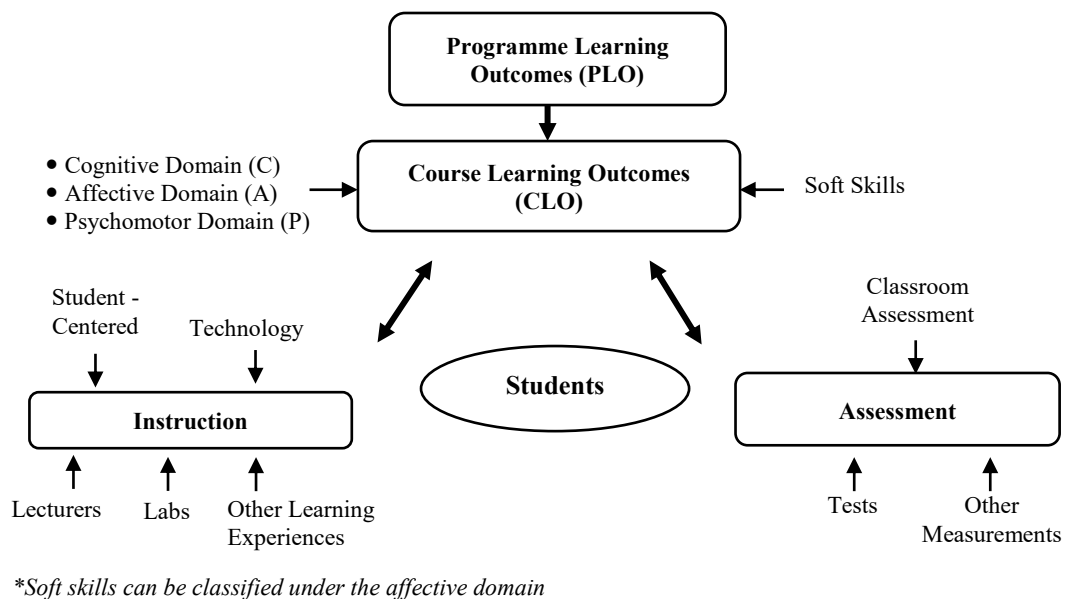


Figure 1.1
Relationship between Design, Delivery and Assessment
 Source: Adapted from (Felder & Brent, 2003)

In order to obtain feedback from the students and gauge knowledge and teaching capability, the teaching evaluation for academic staff has been conducted since 2011 by the DRB-HICOM University. The summary of the results from 2012 to 2015 is illustrated in Table 1.3.

Table 1.3
Teaching Evaluation Summary

Range of Points	No. of Academic Staff			
	September 2012	September 2013	September 2014	September 2015
4.76 – 5.00	2	7	12	1
4.51 – 4.75	16	40	20	9
4.26 – 4.50	32	18	15	24
4.01 – 4.25	15	2	14	10
3.76 – 4.00	6	3	4	7
3.51 – 3.75	0	0	1	2
3.26 – 3.50	0	0	0	2
3.00 – 3.25	1	0	0	0
TOTAL	40	71	66	55

Source: Faculty of Engineering & Technology and Faculty of Business & Management (2015)

The evaluation form was developed by the Academic Department with a total of 16 items of assessment. Four items were for content evaluation and 12 items for teaching delivery. The result was validated by the DRB-HICOM University's Board of Academics. Based on the above results, a few academic staff achieved less than 4.26. The mean rating of above 4.26 for 2012, 2013, 2014 and 2015 was 17, 19, 16 and 11 academic staff accordingly. This shows that much improvement needs to be made for the academic staff.

1.2.3 Appropriate and reasonably conducive campus

This is reinforced by understudies points of view on the relationship of the grounds physical environment and their learning (Yang, 2006). The main campus offers

modest and conducive facilities, including four blocks, comprising administration, student activity centre, Business and Management School and Engineering and Technology School. The university campus is in progress and currently is in the completion stage of the Block B of the Engineering & Technology Faculty, which will be ready by 2017 end. Any institution concerned with encouraging student learning must focus on the physical environment (Yang, 2006) and provide suitable and sensible facilities to attract students and remain competitive.

Indeed, the stiff competition among Malaysian Private HEIs has increased the pressure on the institutions to remain competitive and sustainable in the market. Thus, each institution must attract students using various marketing strategies and planning. Rahim et. al. (2009) mentioned that many Malaysian Private HEIs could not compete and have ceased their operations, which impacts negatively on the government's efforts to be a premier provider of quality education. For instance, according to *Utusan Malaysia* (2006), 40 of the 198 Bumiputera Private HEIs faced difficulties in student enrolment, finance and infrastructure. In 2014, the closure of Al-Bukhary International University (AiU) (Bernama, 2014) was another addition to the list. Rahim et al. (2009) further elaborated that the existing Private HEIs need to adapt to the overwhelming budgetary difficulties. These establishments face enormous challenges in attracting new students in light of the fact that high tuition fees are charged to students compared to the government universities. This proves that in order for an institution to survive in the education industry, the institution must be competitive. Mazzarol (2012) stated that by having unique academic programmes or by servicing a specific niche market, education institutions can secure an enviable position in the already saturated competitive market.

Technological capability is another crucial issue related to competitive advantage. Risquez and Moore (2013) debated that using technology in teaching can support innovation, in reaching out to groups of students who have no opportunities to further their studies at the higher levels. It can also help the institutions to manage resources and other systems, like timetabling. In the same study, the technology used in teaching is criticized because it takes away the human touch available in face-to-face teaching pedagogy. Some say use of technology to teach is a more inexpensive option while some say that effective pedagogy using technology requires more resources and substantial costs are involved. The strong debate between both scholars has made the use of technology a contentious issue, where the dynamic forces, direct and indirect expression and sensible or insensible able to be highlighted. Any change is likely to impact on the role and responsibility of educators in higher education. Change implementation could be challenging, especially in the usage of technology in the curriculum to ensure better engagement and learning processes. On the other hand, the usage of the technology may hinder student-centred learning (Elzarka, 2012). In line with changes related to technology, some employers are expecting that newly hired graduates not only possess good basic skills but can also analyse, synthesize and evaluate the information to make decisions. Thus, it is required of HEIs to embed higher technological skills into the programme curriculum (Adebayo & Mcgrath, 2013). In addition, it has been found that there are discrepancies in implementing technology in education in terms of the types of technology used, the cost involved and embedding it in the curriculum as well as its impact on students and educators.

The performance of HEIS is significant to ensure sustainability in the market. Practically, several assessments can be done to measure the performance of HEIs, for example, on research, teaching, services as well as financial performance (Asif & Searcy, 2014). Apart from that, each HEI may adopt different contingency plans, including strategies of the institution, facilities, leadership, sustainability and outcomes from learning (Lukman et. al., 2010). The performance of the HEIs highly depends on the management of the institution that works with limited resources.

For DRB-HICOM University, the slogan is, "*By Industry, For Industry*". This has been imparted to all staff and students and additionally to the general population. The University's central focus on the automotive business industry has been significant in drawing students to the University. As a premier automotive industry, DRB-HICOM provides opportunities to staff or students to leverage on the automotive business knowledge. During the semester break, selected academic staff are exposed to the various technologies during their industrial attachment. Hassan and Puteh (2017) found that the usage of Technology Enabled Active Learning (TEAL) is an innovative learning format in teaching and learning activities and can enhance the quality of the learning process for engineering students. This would prepare the students with the skills and knowledge needed by the industry. The support from the industry is equally significant and this is explained by McAdam and Miller (2017) that due to the scarce resources in the university, academics are required to engage with the industry in order to understand any new technology introduced. Hence, technological capability perception is introduced as the moderator for this study.

Technological capability perception is very important to DRB-HICOM University because technological capability impacts staff and students differently. Possessing a good technological capability will assist in imparting the knowledge of the staff to the students. This will also increase staff capabilities in terms of skills and knowledge. Elzarka (2012) described the importance of incorporating innovation as it can help students for their future jobs, benefiting from best instructional works on, creating higher intuition exercises and connecting with students whose associated with innovation are progressively local, among others.

In a nutshell, in order for a HEI to sustain its competitive advantage, several key performance indicators, including research, teaching, services provided by the institution and financial performance, must be assessed continuously. Various types of technology have been used in teaching, for example, Vázquez-Cano (2014) pointed out the apps tailored to university subjects are appreciated more by the students to support and enhance their learning activities. In another study by Nguyen and Barton (2015), iPads were used as engaging tools in order to enhance the students' learning experiences. Apart from that, technology-enhanced learning (TEL) involves the application of information and communication technologies for teaching and learning. The interventions of TEL in teaching and learning can greatly enhance understanding (Kirkwood & Price, 2014). Since the use of computers, software, internet and other technologies are important in teaching and learning, Bulman and Fairlie (2016) explained that the usage of those technologies can be effective learning tools to engage the students in learning. In addition, the virtual classroom is also becoming one of the types of technology used by some education institutions. This has been explored in a study by Diwakar et. al. (2016) on the

virtual and remote labs where they are used as a platform to enhance the engagement of students' blended learning in an Indian university.

Since DRB-HICOM University experienced a transition from College to University status, therefore, change management also took place. The management at College level is different compared to University level. This is due to the change of requirements or criteria as a University by MOHE. The change management impacted the staff and students. A great challenge was faced by staff in terms of change in daily operations, for example in governance, departmental policies as well as academic rules and regulations for the students. The change required adjustments in terms of new management of education and embracing the new challenges of the institution (Jamali, 2005). Besides that, the staff's emotional responses were significant because the junior and senior staff experienced different kinds of emotions (Marie & Lamb, 2015).

DRB-HICOM University offers programmes related to technology and its sustainability in the education industry is still questionable. By identifying the needs of the current students, it could lead to higher enrolment in future. Thus, sustaining competitive advantage using technological capability perception is explored in this study. As explained earlier, as suggested by Miles (2010), Charlotte (2007) and Yang (2006), this study measures the moderating role of technological capability perception in sustaining competitive advantage for DRB-HICOM University. In addition, change management is also addressed in this study due to the transition from College to University status.

1.3 Research Questions

The research questions are based on the research problems, and are related to the students' and staff attitude, subjective norms and perceived behavioural control towards intention of DRB-HICOM University (henceforth referred to as DRB-HICOM U) in sustaining competitive advantage through the moderating role of technological capability perception. The questions are as follows:

- i) What is the relationship between student attitude, subjective norms and perceived behavioural control and the intention of DRB-HICOM U towards sustaining competitive advantage?
- ii) What is the moderating effect of technological capability perception in the relationship between attitude, subjective norms, perceived behavioural control and intention of DRB-HICOM U towards sustaining competitive advantage?
- iii) Does intention of DRB-HICOM U towards sustaining competitive advantage mediate the relationship of attitude, subjective norms and perceived behavioural control and actual behaviour?
- iv) Does intention of DRB-HICOM U in sustaining competitive advantage influence the actual behaviour?
- v) Does change of management have an impact on DRB-HICOM U staff in sustaining competitive advantage?

1.4 Research Objectives

Based on the research questions, the research objectives of this study are addressed as well. The purpose of this study is to investigate the relationship between students'

and staff attitude, subjective norms, perceived behavioural control and the intention of DRB-HICOM U to sustain its competitive advantage using technological capability perception as moderator. The research objectives of this study are as follows:

- i) To investigate the relationship of attitude, subjective norms and perceived behavioural control and the intention of DRB-HICOM U towards sustaining competitive advantage.
- ii) To investigate the moderating effect of technological capability perception in the relationship between attitude, subjective norms and perceived behavioural control and the intention of DRB-HICOM U towards sustaining competitive advantage.
- iii) To investigate the mediating effect of intention of DRB-HICOM U towards sustaining competitive advantage in the relationship between attitude, subjective norms and perceived behavioural control.
- iv) To investigate the influence of intention of DRB-HICOM U in sustaining competitive advantage on the actual behaviour.
- v) To investigate the DRB-HICOM U staff's concern and how to overcome changes that have happened in DRB-HICOM U.

To get a clearer picture on the links between the problem statement, research questions and research objectives, a summary is presented in Table 1.4 below:

Table 1.4

Summary of Problem Statement, Research Questions and Research Objectives

No.	Problem Statement	Research Questions	Research Objectives
1.	Students' and staff attitude, subjective norms and perceived behavioural control have effects on DRB-HICOM U in sustaining competitive advantage.	What is the relationship between attitude, subjective norms and perceived behavioural control and the intention of DRB-HICOM U towards sustaining competitive advantage?	To investigate the relationship of staff and students' attitude, subjective norms and perceived behavioural control and the intention of DRB-HICOM U towards sustaining competitive advantage.
2.	Technological capability perception may have some effects on DRB-HICOM U in sustaining competitive advantage.	What is the moderating effect of technological capability perception in the relationship between attitude, subjective norms, perceived behavioural control and intention of DRB-HICOM U towards sustaining competitive advantage?	To investigate the moderating effect of technological capability perception in the relationship between attitude, subjective norms and perceived behavioural control and the intention of DRB-HICOM U towards sustaining competitive advantage.
3.	Sustaining competitive advantage may influence the actual behaviour of the staff and students.	Does intention of DRB-HICOM U in sustaining competitive advantage influence the actual behaviour?	To investigate the influence of intention of DRB-HICOM U in sustaining competitive advantage towards the actual behaviour.
4.	Attitude, subjective norms and perceived behavioural control may mediate actual behaviour and the intention of DRB-HICOM U to sustain its competitive advantage.	Does intention of DRB-HICOM U towards sustaining competitive advantage mediate the relationship of attitude, subjective norms, perceived behavioural control and actual behaviour?	To investigate the mediating effect of intention of DRB-HICOM U towards sustaining competitive advantage in the relationship between attitude, subjective norms and perceived behavioural control and actual behaviour.
5.	Change of management from College to University status may	Does change of management have an impact on DRB-HICOM	To investigate the DRB-HICOM U staff's concern and how to

No.	Problem Statement	Research Questions	Research Objectives
	have an impact on the DRB-HICOM U staff	U staff in sustaining competitive advantage?	overcome changes that have happened in DRB-HICOM U.

1.5 Scope of Study

The scope of this study is the TPB in education institutions, particularly in Private HEIs. The study explores the relationship of students and staff in terms of attitude, subjective norms, perceived behavioural control and the intention of DRB-HICOM U to sustain its competitive advantage through technological capability perception as moderator. This can reveal the actual behaviour of the students and staff in DRB-HICOM U. The population of this study comprises active students and permanent staff of DRB-HICOM U. The students are from semesters three and above based on their exposure to technology in their academic programmes, whereas staff with a minimum of one year of service with DRB-HICOM U were selected to provide insightful information for this study. Apart from that, this study faced some limitations, such as lack of resources in terms of number of assistants to conduct the interview, only focusing on the education institution and the type of data collection.

1.6 Significance of the Study

Essentially, the results would be able to assist the organization in terms of its strategic planning and decision-making. This study contributes through a mixed data collection method that gives insights on the managerial and strategic activities of DRB-HICOM U. According to Johnson, Melin and Whittington (2003), the movement hypothesis system and exact investigation in the study makes two

principle commitments to hypothesis advancement on administrative commitments to the miniaturized scale practices of appropriated key action. It improves the comprehension of the temporary and new nature of vital action conveyed by action frameworks. By doing this, it will prepare DRB-HICOM U management to be ready for the future strategic activities to move towards sustaining competitive advantage. Ultimately, it suggests to DRB-HICOM U administration key exercises for moving towards sustaining competitive advantage.

1.6.1 DRB-HICOM U Staff and Students' Behaviour and Attitude

The aim of this study is also to explore the DRB-HICOM U students and staff behaviour and attitude towards the intention of sustaining competitive advantage. It measures the individuals' different attitude, subjective norms as well as their perceived behavioural control. Apart from that, it also investigates the DRB-HICOM U students' conduct and disposition towards the aim of sustaining competitive advantage, whereby it measures students with diverse states of mind, subjective standards and their apparent behavioural control.

1.6.2 Providing Input to the DRB-HICOM U's Strategic Direction Plan

This study provides input to the DRB-HICOM U's strategic direction plan where technological capability perception can be included in the mid-term to long-term strategy. In line with the motto, "*by industry, for industry*", DRB-HICOM U needs to ensure the technological capability perception gap between industry and education is bridged in order to become competitive in the market.

1.6.3 Technological Capability Perception moderator as contributor to the existing model of TPB

in the current theoretical structure of the TPB presented by Ajzen (1985), it has been found that there are still gaps between individual behavioural assessment and expectation. Innovation capacity assumes a basic part in deciding the achievement of new pursuits, both in international and local commercial centres (Zahra, 1996; Yiu, Lau and Bruton, 2007). The programmes offered require a significant technological capability perception since DRB-HICOM U is basically set up to cater to the needs of the industry. This has led to the reinforcement of the position of DRB-HICOM U as an automotive education provider in Malaysia. It is viewed as a critical asset, empowering new dares to pick up business sector acknowledgment and accomplish long haul upper hand through consistent advancement and the presentation of new items (Lee et al., 2001). Thus, this study connects the gaps between individual conduct and aim able to be bridged or become closer.

1.6.4 Preparing for the future

This study aims to explore and measure the intention of DRB-HICOM U students and staff towards sustaining competitive advantage. This can enable DRB-HICOM U staff as well as students to be better prepared. It serves as the premise to execute new approaches towards sustaining competitive advantage.

By looking at the overall operations of DRB-HICOM U, this study is important because for Private HEIs, the students are the most important stakeholders and technological capability perception is equally important to sustain competitive

advantage. The independent variables in this study are identified, namely the students' attitude, subjective norms and perceived behavioural control. Intention is identified as the dependent variable to sustain competitive advantage, thus leading to the actual behaviour. The moderator is technological capability perception between both the dependant and independent variables. It is significant to recognize and explore the link between both the variables of the students and staff towards the actual behaviour. This study would help the administrators, instructors and policymakers to draw up better rules towards the execution of its plans.

1.7 Theoretical Contributions

This study can benefit the academics. From the perspective of theoretical contributions, the purpose of this study is to explore the gaps existing in the TPB using technological capability perception as moderator. This study provides a concise overview of the current literature. Some studies have described the relationship between attitude, subjective norms, perceived behavioural control and any type of intention. However, there is lack of studies in using technological capability as moderator using the TPB. Indeed, this study provides a better understanding of the impact of technological capability perception using the TPB. Besides that, this study also gives researchers useful information because it makes new contribution to the theory. As for methodological perspectives, this study deployed mixed data collection methods, both quantitative and qualitative, through triangulation of findings to bridge the gaps in previous studies on TPB. The qualitative findings provide in-depth feedback from the participants and then are triangulated with quantitative data. The findings were assessed through a survey

questionnaire to DRB-HICOM U students and semi-structured focus group interview with DRB-HICOM U staff. In addition, the application of Partial Least Squares-Structural Equation Modelling (PLS-SEM) was employed as the statistical analytical instrument to analyse the results.

1.8 Practical Contributions

This study also benefits the education industry practitioners. From the practitioners' perspective, this study is valuable for the stakeholders in the education sector, such as the management team, academic staff, administrative staff, students and industry, that have linkages with the institution. The results provide beneficial and useful information for practitioners in implementing strategic plans and making decisions. It will facilitate the practitioners to work within the permitted resources and conditions of the institution. Furthermore, it can help the practitioners to generate ideas of current benchmarks, bridge the existing gaps and improve the managerial framework. This is also in line with the Malaysia Academic Blueprint 2013-2025, the main objective being to nurture a Malaysian community with knowledge, values and skills required to embrace globalization and the effects of the rapid growth, particularly in science, technology and information (MOHE, 2013).

1.9 Organization of Thesis

In general, research implies common methods in reasoning, namely inductive and deductive approaches. Inductive reasoning starts from wide-ranging generalization from detailed observations. Conversely, the deductive reasoning starts from the valid reasoning where it comes from general statement or hypothesis and evaluation of the

outcomes to achieve a specific rational conclusion. In this study, deductive reasoning is used to carry out this study. This study consists of five chapters as summarized below:

Chapter One

Chapter one describes the research overview where it outlines the background of the study, research problem statement, research questions, research objectives, scope of the study and organization of the thesis.

Chapter Two

Chapter two describes the literature review of significant and related journals where it discusses the outline and foundation of theory for the research in order to recognize the issues that are valuable to this research.

Chapter Three

Chapter three provides a comprehensive understanding of research methodology. It includes research method, research framework, hypotheses/propositions, research design, quantitative research method, qualitative research method, triangulations for the findings of this study and chapter summary.

Chapter Four

Chapter four describes the findings from qualitative and quantitative methods for this research. It is categorized into two phases: Phase I: Quantitative Data Analysis and Phase II: Qualitative Data Analysis as well as the chapter summary.

Chapter Five

Chapter five is the discussion of the findings, implications of the study, limitations of the study, recommendations for future study and conclusion of the study.

The next chapter is the literature review related to this study in order to provide better insights on the topic.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The earlier chapter explains the need for a study on the attitude, subjective norms and perceived behavioural control towards sustaining competitive advantage in DRB-HICOM U. This chapter provides relevant literature on the research topic undertaken by previous scholars. Although several researchers have discussed the variables and theories, there are still gaps in their research. Thus, it is important to identify the gaps of this study through literature review. The aim of the literature review is to provide better understanding of the topic using the Theory of Planned Behaviour (TPB) as it relates to the education industry. As such, the literature review is organized in a manner to provide a thorough understanding of the theory as well as the topic of the study.

2.2 History of Malaysian Education

In the pre-independence era of British colonialism (1824-1957), there was inconsistency in the delivery of education. Each ethnic group (Malay, Chinese and Indian) had their own schools, using their own medium of instruction, curricula, books and teachers. As a result, segregation among the ethnic groups existed (MOHE, 2013). In the post-independence era (1957-1970), the awareness among leaders to replace the education system with a common education system for all occurred. The Education Committee (1956) were perceived and instruction framework that joined national elements guaranteeing a spot in school for all

youngsters all things considered of their ethnicity or religion. The implementation findings further reported in the Rahman Talib Report and built up instructive arrangement in the Razak Report with its general acknowledgment by people in. In 1957, every single grade school was changed to national and national-sort schools, utilizing Bahasa Malaysia as the medium of instruction. In 1962, primary school fees were eliminated. The Malaysian Secondary School Examination was repealed in 1964 and an all-inclusive education was extended from six to nine years in Malaysia. In 1956, a comprehensive lower secondary education was introduced. In 1964, an incentive was given to Technical Education through the establishment of Technical and Vocational Education Division in the same year (MOHE, 2013).

The era of the New Economic Policy starting from 1971 to 1990 is described as an era of advancement for education in Malaysia. The Integrated Primary School System (KBSR) was framed in 1983 and the Integrated Secondary School Curriculum (KBSM) was implemented in 1989 by the Cabinet Committee. Dato' Seri Dr. Mahathir Mohamad launched Vision 2020 under which the National Development Policy (1991 to 2000) was tailored towards the needs of globalization and information technology (IT). To achieve a developed nation status by 2020, the government legislated four new acts, namely: the National Council on Higher Education Act 1996, the Universities and Colleges Act (Amendment) 1996, the National Accreditation Board Act, 1996 and the National Higher Education Fund Corporation Act 1996 (MOHE, 2013), to encourage higher education institutions to offer more systematic education.

It is a test for any country to create proficient, able and internationally dynamic human capital. To achieve Vision 2020, initiatives have been taken to deliver quality

infrastructure, increasing the number of education facilities, developing capabilities as well as the efficiency of education officers, teachers and leaders. The objectives and desires of the National Vision Policy include nurturing a resilient people, creating an equitable society, progressive development, building a knowledge-based economy (K-economy), fortifying human asset and ecological improvements. All these are also included in the Education Development Plan (EDP) (2001 to 2010). The Education Development Master Plan (2006 to 2010) was launched in 2007 to endorse the agenda of education under the Ninth Malaysian Plan (9MP), framing six pillars, i.e., building the nation; human capital development; firming up the national schools; linking the education opening; uplifting the profession of teaching; and fast-tracking the ranking of education institutions (MOHE, 2013). The National Key Result Areas (NKRA) (2010 to 2012) on educational development, concentrate on four enterprises to broaden admission to worth value education, i.e., upsurge pre-school admission; ensure literacy in Bahasa Malaysia and numeracy; develop High-Performing Schools (HPS); and New Deal (Bai'ah) introduced as principles. These initiatives can lead to remarkable achievements, in terms of improving access, specifically at pre-school level, and strengthening the quality of the education framework within two years (MOHE, 2013).

Undoubtedly, many challenges are faced by the nation to develop a holistic education system. Each era in the educational development has had its own challenges, either in terms of developing policies or implementing acts, and the measures to be taken. Therefore, in this millennia, private HEIs need to have their own distinctive competencies in relation to reputation, being financially sound and a wide range of programmes offered. These are carefully evaluated through several assessments for

higher education, such as the Rating System for Higher Education Institutions in Malaysia (SETARA) and Malaysian Quality Evaluation System for Private Colleges (My QUEST).

2.2.1 International College of Automotive Malaysia (ICAM)

In 2010, ICAM was established as a private HEI in the East Coast Malaysia with the objective of providing automotive-based education. ICAM, which is an operating unit of HICOM University College Sdn. Bhd. (HUCSB), was set up to offer specialization courses in automation. The courses offered cater to the needs of the automotive industry in Malaysia. The mission of ICAM - “To be leader in Automotive Education” is supported by the vision - “To provide the best educational experience for those who want to excel in automotive industry” and “Best educational experience in automation, in terms of knowledge & innovation, skill, practice, integrated auto hub, research and know how” (ICAM, 2013). The mission and vision serve to support the automotive ecosystem in producing automotive and manufacturing components, vehicle assembly, distribution and vehicle inspection. The specialization takes into account the needs of the Diversified Resource Subsidiary-Heavy Industries Corporation of Malaysia (DRB-HICOM) which have been essential objectives to satisfy requirements for talented and learned employees, to help produce human capital towards high income nation status and a breeding ground for automotive experts to address industry issues. The summary of programmes offered as at September 2015 are as follows:

Table 2.1

Summary of programmes offered in DRB-HICOM U

No.	Diploma Programmes	Home-grown/ Collaboration Partner
<i>School of Engineering & Technology</i>		
1.	Diploma in Automotive Service Technology (DST) (N/525/4/0004(MQA/FA 0297)02/16)	Home-grown
2.	Diploma in Automotive Management Systems (DMS) (KN11452(A11452) 5/15)	Home-grown
3.	Diploma in Automotive Vehicle Assembly Management (DVA) (KN11453(A11453) 5/15)	Home-grown
4.	Diploma in Occupational Safety and Health (DOSH) (N/862/4/0032(MQA/PA3829) 2/19)	Home-grown
5.	Bachelor of Mechanical Engineering Technology (BMET) (Automotive Service Technology) with Honours (N/521/6/0128 (MQA/PA 7527) 11/20)	Universiti Malaysia Pahang (UMP)
6.	B.Eng.(Hons) in Manufacturing Systems Engineering (BEMS) (N/521/6/0042(MQA/PA 2372)10/17)	Liverpool John Moores University (LJMU)
7.	Bachelor of Mechanical Engineering Technology (Industrial Design) with Honours (BMID) (N/521/6/0129 (MQA/PA 7526) 11/20)	Home-grown
8.	MSc in Engineering Technology (N/520/7/0080 (MQA/PA 7970) 08/20)	Home-grown
9.	PhD in Engineering (N/520/8/0081 (MQA/PA 7971) 09/20)	Home-grown
<i>School of Business & Management</i>		
1.	Diploma in Automotive Retail Management (DRM) (N/341/4/0008(MQA/FA 0442)02/16)	Home-grown
2.	Diploma in Automotive Parts Management (DPM) (N/525/4/0003(MQA/FA 0441)02/16)	Home-grown
3.	Diploma in Enterprise Resource Planning (DRP) (N/341/4/0016(MQA/FA 1233)03/17)	Home-grown
4.	Diploma in Procurement Management (DPV) (N/341/4/0015(MQA/FA 1232)02/17)	Home-grown
5.	Bachelor of Business Administration (Hons) Marketing (BMM) Management (N/342/6/0097(MQA/PA4356) 2/19)	Multimedia University (MMU)
6.	Foundation in Business (FIB) (N/010/3/0348 (MQA/PA 5813) 06/20)	Home-grown
7.	PhD in Management (N/345/8/0844 (MQA/PA 7968) 09/20)	Home-grown
8.	Master of Management (N/345/7/0845 (MQA/PA 7969) 08/20)	Home-grown

Source: Retrieved from <http://www.dhu.edu.my> (2016)

As ICAM had the necessary criteria for University status, it was successfully accorded University status (by-passing University College status) on 20 October 2015 by the Ministry of Higher Education and the name was changed from ICAM to DRB-HICOM University of Automotive Malaysia (DRB-HICOM U).

2.3 Globalization and Education

The development of a country is impacted by globalization in terms of social, political, culture and education impacts. Sahlberg (2004) said globalization has two macro-levels which have an effect on our daily lives. The first one is it is concurrently integrated and segregated. It had coordinated world societies through the worldwide imparting systems and less confined movement of people. In the meantime it arouse an anxiety between the individuals who are profited more and the individuals who may be underestimated by the business sector qualities and purchaser societies that are common to numerous fellowship, particularly in the field that experience the ill effects of impoverishment or slower development. Secondly, globalisation has promoted competition whereby strategic alliances between competing companies are becoming a condition for success. Another scholar, College (2011), gave various meanings to the word, 'globalization'. The first one is that globalization is another word for 'internationalization'. Next, globalization is liberalization, where nations evacuate confinements on the development of capital starting with one nation then onto the next by applying "open", "borderless" economy. Thirdly, the word, 'globalization' implies universalization. In this context, globalization is a procedure of spreading different questions and experience to individuals living in the four sides of the world. Fourth, globalization alludes to Westernization or modernization (to the Americans, it is the Americanization of the

world group). The last definition is that incidents and events that happen in one region of the world are not confined to a particular region but they are transported and shared by other regions of the world through modern means of telecommunications.

Globalization has also impacted education, including higher education, in various ways. HEIs are faced with huge challenges in preparing students to face the global competitive market. The dual challenge of the education system is to equip the students with new learning, abilities and qualities to survive in a dynamic global business sector whilst producing graduates to meet the needs of the nation and the world. Globalization tests us to re-evaluate how awesome the training was required as well as its last purposes (Chinnammai, 2006). Globalization has an impact in the education industry. HEIs are responsible for preparing and producing the right candidates for employers. Apart from local student enrolment, DRB-HICOM U also welcomes international students. According to Mazzarol and Soutar (2002), the factors that can attract international students include their perception of overseas qualification being considered better than their own local qualifications and willingness to experience studying in other countries. As the programmes offered by DRB-HICOM U are closely related to automation, it is important to attract international students and to ensure the students can experience a holistic teaching and learning process.

2.4 Malaysia's Competitiveness

Competiveness of a country can be measured through its economic growth, infrastructure, technological capability, etc. Leichter, Mocci and Pozzuoli (2010)

said that a country's competitiveness can be measured through an assessment of the overall vitality of the economy that includes productivity and Gross Domestic Product (GDP) growth and the exporting firms' performance in the global market. Durand and Giorno (1997) defined competitiveness measurement must satisfy three basic criteria: first, it should cover all sectors exposed to competition, i.e., all goods traded or tradable that face competition and only those goods; second, they should include all the markets open to competition; and third, they should be built from data that are fully on par internationally. In becoming competitive in the global market, Malaysia is not the exception. Malaysia was ranked in 20th place from 144 countries. The Competitiveness Report is produced by the World Economic Forum (WEF). The 12 pillars used as measurement are: institutions, substructure, macroeconomic environment, well-being and essential education, training and higher education institutions, product market productivity, work market effectiveness, budgetary business improvement, mechanical status, business size, business modernity and development (Pemandu, 2015). In the same report, the Director General, Malaysia Productivity Corporation (MPC), said that the government continues to strengthen its efforts in the macroeconomic environment, labour market efficiency and technological readiness. The report shows that Malaysia is competitive enough to compete over the years with other countries based on the pillars outlined by the WEF. Therefore, the HEIs in Malaysia must be more adaptable to the changing needs in the market and be able to offer greater work choices to students as well employers. In relation to this study, DRB-HICOM U, as one of the private HEIs, is facing great challenges to produce competent human capital for the industry.

2.5 Underpinning Theory

The theoretical framework adopted for this study is underpinned by the Theory of Planned Behaviour (TPB) (Ajzen, 1985). The TPB focuses on the evaluation of an individual's behaviour towards a certain conduct. The TPB has been used to forecast human social behaviour. It is one of the most renowned models in explaining the attitude and behaviour relationship. The attitude towards behaviour, subjective norms and perceived behavioural control have led to the differences in actual behaviour and intention.

2.5.1 Theory of Planned Behaviour (TPB)

The TPB (Ajzen, 1998) has become the most influential theory used to study human behaviour or actions. Ajzen (2002) described that human conduct is guided by three types of contemplations: (i) convictions about the imaginable results or different properties of the conduct (behavioral belief); (ii) convictions about the regulating desires of other individuals (normative belief); and (iii) convictions about the vicinity of variables that may further or prevent execution of the conduct (control belief). In the same research, Ajzen (2002) mentioned that depending on the level of collective behaviour, behavioural beliefs may produce positive and negative attitudes; normative beliefs result in apparent social stress; and control beliefs escalation to perceived behavioural control, the observed simplicity or trouble of execution the conduct. Together, attitude, subjective norms and perception of behavioural control are linked to the development of a behavioural intention. Ultimately, with a sufficient degree of actual control over behaviour, people are predicted to carry out their intentions when there is an opportunity. Intention is thus expected to be the

immediate antecedent of behaviour. Siragusa & Dixon (2009) cited that other studies carried out before this have utilized the TPB in an effort to understand intentions of people to participate in several activities, such as losing weight, commitment with leisure doings, probability of obligating traffic abuses; readiness to poll and giving a gift Abelson, Kinder, Peters, and Fiske (1982), Ajzen and Timko (1986), Driver (1991), Hrubes, Ajzen, and Daigle (2001).

2.5.1.1 Attitude

Attitude refers to an individual's general assessment of conduct. There are two parts which are used together: beliefs about results of the behaviour; and the relating positive or negative judgements about each of these highlights of the behaviour. It refers to whether or not a person is in favour of doing something (Jillian et. al, 2004). Oliver (1981) described attitude as a moderately continuing full of feeling introduction of a person toward an object, conduct or methodology. Hennessy et al. (2005) concluded that teaching staff's attitude as offering duty to coordinating innovation identifies the educational values and having confidence in the transformative capability of the innovation. In this study, the students' attitude towards the intention of DRB-HICOM U to sustain competitive advantage is measured.

2.5.1.2 Subjective Norms

Subjective norms refers to an individual's own assessment of social pressure to carry out the targeted behaviour. Subjective norm was accepted are having two segments namely communication in work: beliefs on other individuals that somehow essential

to the individual, would like them to carry on. In relation to this, it was depended on how much the person felt on social load to carry out it (Jillian et. al., 2004). Bellone and Czerniak (2001) reported the extent of the utilization of PCs in the classroom has increased the students' positive views of the tutor. Venkatesh and Davis (2000) contended that when a work colleague believes that the framework is profitable, a person has a tendency to have the same thought, through disguise. The social pressure of the students is measured in terms of the intention of DRB-HICOM U to sustain its competitive advantage.

2.5.1.3 Perceived Behavioural Control

Perceived behavioural control formed an extent which an individual senses ready to approve the conduct. It depends on how much control an individual has over the behaviour and how much ability an individual has to perform or not perform the behaviour. It is controlled by beliefs about the force of both situational and inward elements to restrain or encourage the performing of the conduct. As per the hypothesis of arranged conduct, perceived behavioural control, in line with the behaviour plan, can be utilized specifically to foresee behaviour accomplishment (Ajzen & Driver, 1991). It was either the individual felt in control of the activity being referred to (Jillian et al., 2004). In this study, the students' perceived behavioural control is measured in terms of the intention of DRB-HICOM U to sustain its competitive advantage.

The dependent variable is as follows:

2.5.1.4 Intention

Intentions speak to an individual's inspiration in the feeling of her or his planned arrangement or choice to apply was pushed to carry out the conduct. Aims and conduct were held to be emphatically related when measured at the same level of area in connection to the activity, target, setting and timeline (Fishbein & Ajzen, 1975). The student's perception towards the intention of DRB-HICOM U to sustain its competitive advantage is explored through the students' technological capability perception.

2.5.1.5 Technological Capability Perception (moderator)

In this study, technological capability perception serves as the moderator variable. When a moderator is used, it may lead to some effects in the relationship between two or more variables. The moderation was the effect that represents on the association (Dawson, 2014). Technological capability is the game changer of an institution. The best in class facility gave the hands on experience and introduction to the students. In incorporated innovation in the higher education direction can't be disregarded on the grounds that it furnished the students with the most recent innovation learning to confront the real business industry. The implication of coordinating innovation provided advantages to arrange students for future professions, exploiting best instructional works on, creating higher intellectual exercises and connecting with students whose associations with innovation are progressively local, among others (Elzarka, 2012). Hennessy et al. (2005) found that technology facilitates the lower achieving students in mathematics and contributes positively to the students' ability. Technological capability, for example,

information technology (IT), can provide better operational processing, reduce errors, save costs and improve overall productivity. This is one way to enhance the competitive advantage of public universities in Nigeria (Palladan & Kadir, 2016). Technological capability is seen as vital to an organization because it provides some benefits which lead to competitive advantage for the organization. However, the implementation of any technology in an organization may face challenges due to the low acceptance of end users. Guàrdia et al. (2016) described the challenges of implementing e-assessment for the staff and students, such as computer literacy, reliability and validity of assessment and accessibility to the systems.

Driver (1991) described that the evidence observed able to facilitate the study. It is found in TPB, the diverse of behaviour aimed to conduct behaviours able to be predicted through high accurateness impending from attitudes towards behaviour, subjective norms and perceived behavioural control; and senses the insight of behavioural control, explaining the significant difference in actual conduct. In the appropriate setting of act or behaviour, attitudes, subjective norms and perceived behavioural control were applicable to the behavioural, normative and control beliefs of the conduct. However, the specific nature of these relationships was still indefinite.

Ajzen (2002) described that behaviour of a person is controlled by three different kinds of thoughts: behavioural belief - beliefs about the conceivable results or different qualities of the conduct; normative belief - beliefs about the regulating desires of other individuals; and control beliefs - convictions about the vicinity of variables that may advance or hinder execution of the conduct. Behavioural beliefs

have created a great or unfavourable mentality towards the conduct; regulating conviction result in apparent social stress or subjective norms; and control beliefs offered ascent to apparent behavioural control, apparent straightforwardness or trouble in performing the conduct. Attitude towards behaviour, subjective norms and perception of behavioural control form a behavioural intention. The variance in intentions and actions is also rooted in perceived control on performance of behaviour.

Ajzen (2011) conducted a meta-analysis study on TPB in health-related behaviour. In this study, he deliberated on some issues raised by different writers. Some of the issues were on the way of goals and the points of confinement of prescient legitimacy; soundness, influence and feelings, previous conduct and propensity; the model/eagerness model; and the part of such foundation elements for instance the huge five identity attributes and social correlation inclination. He reviewed seven articles and found that sufficient observed evidence may perhaps best describe meta-analytic synthesis which clearly supports the theory. The role of automatic or spontaneous processes involved in habitual behaviour designed to gain a better understanding in the recent studies. It was also to discover impulsivity and the capacity to compel when needed for self-regulations. Apart from that, it was also observe the utility of making point by point arrangements as an approach to expand capacity to follow up on target, especially test the thoughts that including expected influence or the rationale to maintain a strategic distance from vulnerability may enhance desire of expectations.

The DRB-HICOM U staff and students' attitude, subjective norms and perceived behavioural control relationship towards sustaining competitive advantage are explored using the TPB in this study. Siragusa & Dixon (2009) conducted two stages of a pilot study on students from the School of Education to understand their state of mind towards their engagement with Information and Communications Technology (ICT). From the quantitative information gathered, the students believe that accepting ICT can possibly upgrade learning and it should be utilized as a part of the learning and teaching process. The subjective information gathered demonstrated that students felt overpowered when initiating action; yet felt more certain as the action progressed. A few understudies proposed enhancements to be carried out to the learning environment. The study also demonstrated that there is a solid relationship between students' disposition and the aim of utilizing ICT-based learning. Furthermore, it also cited that previous studies that utilized the TPB have achieved an end goal to comprehend people groups' aim to participate in a different number of exercises, for example, weight reduction, engagement with recreation exercises, probability of committing criminal traffic offenses; readiness to vote and giving gifts (Abelson et al., 1982; I Ajzen & Timko, 1986; Driver, 1991 & Hrubes et al., 2001).

The intentions and behaviour of mental health practitioners were evaluated through the effects of a continuing education class using TPB (Casper, 2007). A total of 94 psychological well-being experts were chosen haphazardly to either a standard education class or one that was linked to the TPB. Forty-six of them were selected for the TPB class and 48 of them were selected for the standard class. The participants were obliged to use tools that were assessed before and after each class.

It was measured after three months of the class and the result shows that the continuing education class using the TPB principles experimenting more grounded goals by the members to execute an evaluation instrument than a class organized in the standard configuration. Simultaneously, this shows that the TPB can alter practitioners' behaviour in other settings.

Chen and Lu (2011) conducted a study on modelling e-coupon proneness as mediator in order to predict the usage intentions of the consumers using the TPB model. This study highlights the issue of the increasing significance of e-coupons as special devices, anticipating customers' e-coupons reclamation goal was essential to the assessment of the strategy of promotion. The data was collected through a questionnaire and 626 questionnaires were returned, where 22% are men and 78% are women. It is found that customers who had high e-coupon inclination will be more unobtrusive to the coupon as a promotional tool, which in turn, influences purchase intentions. The e-coupons can be scattered productively on the web and result in higher effective promotion campaigns. By having an unmistakable clarification of a basic reclamation procedure was important to help those purchasers who had high e-coupon inclination. This had demonstrated that buyers' previous conduct of utilizing e-coupons possessed solid indicator of utilization goal of e-coupon later on.

Frieze (2016) conducted a study on attitude and environmental management behaviour by applying the TPB. This study examined the relationship between attitude and environmental managers' behaviour intentions. Attitude was measured in terms of conservation, ecology, property rights, environmental regulations and

faith in technology. The data survey was collected from 295 environmental managers at American manufacturing facilities. The result shows that environmental managers' attitude influences their behavioural intentions to engage in pollution prevention. The attitude variable and a variable to measure belief in the effectiveness of pollution prevention are positively associated with behavioural intention to engage in pollution prevention. Site recycling activity is negatively associated with behavioural intention to engage in pollution prevention activity.

The TPB was also used by Julie (2009) to investigate attitude and the intentions of pre-service teachers towards a comprehensive education environment. A survey was conducted on three Universities in South Carolina. Teachers' attitudes are moderately positive in behavioural beliefs, subjective norms and perceived behavioural control. It was found that higher education programmes have succeeded in their mission to graduate citizens with sensitivity for the problems of others and committed to betterment of society. The programmes of higher education need to evaluate the ways in which research-based practices are taught and pre-service teachers may believe that they had completed volitional control over factor within the inclusive environment.

In summary, the TPB has been widely used in order to predict human social behaviour. The attitude towards the outcome may be different in terms of actual conduct. However, the nature distinguished the overall result or intention towards a certain study.

2.6 Sustaining Competitive Advantage

Competitive advantage of an organization can be described as how well an organization can compete in today's challenging and demanding environment. The competition is translated into various factors, including globalization, diffusion of technology, development of technology and knowledge usage (Xue, 2017). In order to create competitive advantage, competitive strategies are needed. Porter (1980) described that competitive strategy is related to creating and maintaining competitive advantage over the competitors. The most important thing is to be able to offer differentiation in positioning the organization so that it can be protected from the competitors. Positioning not only refers to differences of performance in the industry; organizations must also possess unique and difficult to imitate resources (Dierickx & Cool, 1989). According to Barney (2014), there are four criteria for organizations to gain competitive advantage, namely: creating continuous competitive advantage; distinctiveness; ability to reproduce; and willingness to offer extra. This firm-resource model can be used for businesses in other industries.

Besides that, the knowledge, skills and ability of the employees also supports the organization to become competitive in the market. Urbancova (2013) studied innovations and identified knowledge as a significant element in any innovation process. The study concluded that organizations perceive knowledge as significant to innovate and promote an innovative culture. Knowledge is highly important as part of the innovation process because it not only embodies significant input but also the output of the process transformation. In any organization, a business model innovation could be the source of sustainable competitive advantage. This is due to the difficulty for competitors to replicate the entire compared to duplicating a

product or service. Business model innovators gain four times more profit than product or service innovators (Bashir & Verma, 2017).

Rahim et al. (2009) described that the aggressive market environment for Private HEIs in Malaysia is the main reason for the failure of many private HEIs. Apart from the achievements stories, the issue appeared between the performing and non-performing. In their study, the performing and non-performing Private HEIs are evaluated based on their chosen strategies, which influence the organization's distinctive capabilities. The findings show that the strategy differences are definitively connected to the execution having a setting of hierarchical capacities influencing the strategy choice of organizations.

Blustain, Goldstein and Lozier (1999) further emphasized that the HEIs' easy access, partnerships with companies, tailored curriculum, flexible delivery and use of technology, are the sources of competitive advantage. Sustaining this competitive advantage is necessary to maintain and improve an organization's position in the market. This can only be achieved by continuously building on the distinctive capabilities that are unique, difficult to replicate, superior to competition and sustainable over time (Barney, 1991 & Day, 2013). Grant (1991) described that for a company to achieve competitive success, the company must have a competitive advantage in the context of either lesser costs or distinguished products offered at a best price. The company must be able to gain competitive advantages over competitors, given the high quality products and services or efficient manufacturing. Thus, productivity growth can be translated directly for the company and the country. This also can be applied to the Private HEIs. Competitive advantage can be

gained and sustained by “creating markets” for themselves (Dickson & Ginter, 1987).

Other studies have revealed many factors which could contribute to the choice destination for international education (Cervin, 2006; Chen, 2006; Mazzarol & Soutar, 2002; Price et. al., 2003). These studies agree that the important factors which affect choice, include institutional characteristics (for example, the acknowledgment of the academic background and the quality of the organization's staff), information and understanding of the host nation, reference from friends and relatives, air travel cost, informal community and geographic territory. Price et al. (2003) found that instruction and learning additionally impact the view of the organization. Mazzarol (1998) proposed that the capacity to offer a wide range of courses and subjects also plays a vital role.

Morrish and Lee (2011) explained that the rewarding tertiary education business sector had reinforced the contention among advanced education organizations as they forcefully elevate their establishments to the global understudies. The reasons for international students from China choosing their study destination and higher tertiary training establishments (ITEs) were investigated. This study provides an understanding of the factors that can be wellspring of economical point of preference for New Zealand and ITE suppliers in the Chinese Market. The outcomes demonstrate that New Zealand needs to keep up its position as a quality tertiary education centre and shape its distinguished capabilities - low cost and safe country reputation. It can be done strategically by building collaborations between the Government and ITEs to attract international students.

Driscoll and Mathaisel (2013) said that successful sustainability lesson can be achieved through the application of five factors, namely: expertise, resources, amenities, tools and manpower. Education can be accessed worldwide through the development of online education. While the availability takes students and personnel to the college, security and reliability make them stay. Reliability upsurges the students' retention which led to main goal of university. The future research, revenue and success can be foundation of renowned capability performance. While the American higher education was difficult to sustain, cost reduction and escalating financial assistance can enhance the survival of tertiary education by making it modest. HEIs can survive better if they can obtain government financing and government subsidized loans. An institution's overall marketability can be enhanced by publicizing the financial standing of the institution as well as academic and social accomplishments. An established institution must have unmistakable, quantifiable objectives and a group that always observed and ad lib laid out objectives. Sustainability of higher education institutions can be enhanced by advancing an establishment's upper hand by means of steady marking.

In a recent study, Hazelkorn (2015) further explained that globalization and rankings, globalization and networks of power, organizational behaviour and change as well as social capital and positional goods represent significant factors for an institution to be more competitive. Globalization and rankings are used worldwide in response to quest of new information as part of economic growth and lead to the public community responsibility. These include the generation of academic articles, postgraduate programmes and international conferences. In addition, it has also been highlighted by previous scholars that ranking of the institution plays a most

important role in influencing the choice of a specific host institute (Chen, 2006; Mazzarol & Soutar, 2002). The institution ranking would facilitate students in assessing other important attributes, such as the institution's reputation and quality, qualifications recognition, quality expertise and faculty staff (Mazzarol & Soutar, 2002).

The need for an organization to be competitive in the market is significant for the survival of the organization in any industry. A competitive strategy is required to ensure organizations would be able to win over their competitors (Porter, 1980). Barney (2014) described that it is significant to create continuous competitive advantage, distinctiveness, ability to reproduce and willingness to offer extra. A recent study shows that globalization influences organizations to be more competitive. Globalization, technology development and knowledge management have been highlighted as the sources of competitive advantage (Xue, 2017). The asset of the organization, i.e., its employees, also plays a significant role in the organization to sustain its competitive advantage. This includes their skills, knowledge and ability (Urbancova, 2013). In the case of HEIs, the strategy differences contribute to the sustaining of competitive advantage (Rahim et al., 2009). Apart from that, HEIs must be able to offer easy access, partnership with industry, customized curriculum, flexibility in delivery and the usage of technology (Blustain, Goldstein & Lozier, 1999). The competitive tuition fees offered also contribute to the HEIs' sustainability (Grant, 1991). The location of the HEIs also contributes to the choice or selection by the students of the institution (Cervin, 2006; Chen, 2006; Mazzarol & Soutar, 2002; Price et. al., 2003). In addition, the reputation of the institution and its quality, qualifications recognition, quality

expertise and faculty staff are also important in sustaining competitive advantage (Mazzarol & Soutar, 2002).

2.7 Academic Staff Qualifications

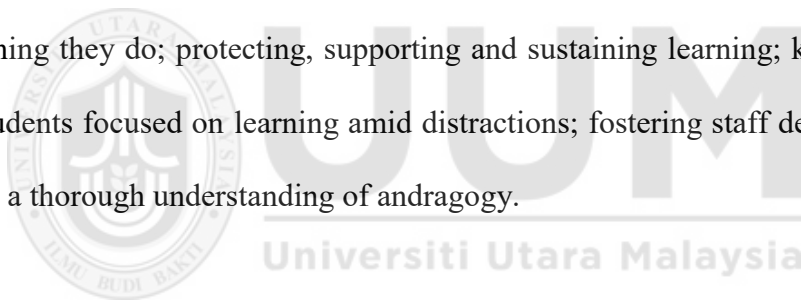
Patterson (2010) conducted a study on the impact of qualification of teachers and the quality of teachers since this has been emphasis under the No Child Left Behind Act, 2001. This study determined whether or not being a qualified teacher as defined by state criteria and having an academic degree improve the effectiveness of the teacher in the classroom. A mixed methodology method was used for this research. A total of 10 schools contributed in the qualitative aspect of the study and 10 faculty members were interviewed. The findings show that there is no significant relationship between teachers' qualification as determined by state standards and student performance on the Florida Comprehensive Assessment Test (FCAT). Remarkably, teacher qualification by state standards seems not to be a determining factor on student outcomes. Based on the conducted interview, it was found that emphasis on the qualification process is more on teachers passing the required tests for certification than the interest in the quality of training the teachers received. The teachers also believed that students' achievement had improved with the use of best practices and strategies in the classroom. Finally, based on the interview, the qualification of a teacher did not impact students' outcomes or teachers' effectiveness. Both quantitative and qualitative data seem to suggest that there is no significant relationship between teachers' qualification as determined by state standards and teachers' quality.

2.8 Teaching and Learning

Castillo (2007) conducted a study on the leaders' best practices in community colleges to create a conducive environment for students' engagement and how it affects student learning and how community college leaders help foster engagement with students. The Community College Survey of Student Engagement (CCSSE) identified community colleges with the best practices for engaging students. In this study, two Hispanic-Majority institutions were selected and arranged visits were made to observe and interview top leaders at those two community colleges. The study found that the institutions' endeavour to practice students focused hiring administration by working nearly with students, making them feel significant, doing everything conceivable to draw in the students intellectually and emotionally. The study revealed vision and planning, student centeredness, teamwork, careful placement of students, data-driven decision-making and leadership and engagement training are important attributes.

Stricker (2006) investigated learning in school-based teachers' attitude towards creating conducive conditions. The development of staff was investigated on the principals' understanding of andragogy and whether they have the capabilities to improve learning conditions and staff improvement. The study was conducted on principals and teachers in grades PK-12 who completed a demographic questionnaire, i.e., the Instructional Perspectives Inventory (IPI) and the Respect for Partner Scale (RPS). The study found in staff development, principals lacked leading by example and seeking opportunities for their own growth and development, leading by providing activities that focused on improving students' achievement/instruction/learning, leading by being actively involved and

participating in school-based staff development activities and leading by embedding staff development in school life. Apart from that, from the personal interaction aspect, principals were lacking in treating teachers with respect, trust, support and valuing them as professionals and their individual contributions; showing appreciation to teachers; listening and understanding; communicating in an open, honest and positive manner in word and action; building relationships and rapport with teachers; being non-threatening with teachers; encouraging and respecting open expression, decision-making and self-directedness; being real or genuine, acting as colleagues with teachers; making the learning environment safe, supportive and secure for learning to take place and not neglecting the teacher as a person. In the learning leadership, it found that principals lacked putting learning at the centre of everything they do; protecting, supporting and sustaining learning; keeping teachers and students focused on learning amid distractions; fostering staff development; and having a thorough understanding of andragogy.



Samaroo (2012) conducted a study on the approach of a University in the Southern United States toward a student-centred model of instruction and education on the pedandragoic framework's practicality and applicability. It examined its appropriateness to a variety of scholastic controls and testing the states of mind of staff towards the usage of the learner-focused methodology in tertiary education. Pedandragogy focuses on the concept of self-engagement and the freedom of learners through the formation of a learning situation helpful for a learner-focused methodology. The respondents were taken from amongst the faculty members of a southern liberal-arts university who represented a diverse array of academic disciplines encompassing natural and social-sciences. Only 148 faculty members

responded out of 400 surveys distributed which rated at 37%. The findings demonstrate that gender, assessment and intrinsic motivations are factors influencing one's attitude towards independence of students. Unlike for female faculty members, they had been intrinsically motivated to teach that made a faculty member more apt to encourage students to be independent learners.

Kwan and Faulkner (2011) conducted a study on the physical activity (PA) perceptions and barriers during the transition to university. The objective of this was to visualize the transitional encounters among first year students to the related physical activity. The data was collected through interview session of eight focus groups consisting of 45 year one students. The focus group consisted of five to eight participants. The four focus groups were separately conducted on students who stayed in the campus and four students who stayed outside the campus. The result exhibited that PA is still considered significant behaviour where the students express their regret of not being able to sustain PA level in year one in the university. The internal factors to the individual who avoided or hinder their ability to involve in PA may reflect the intra personal barriers. The factors which stressed both official and unofficial social connection and linked structure were interpersonal barriers. The finding of this study is that majority of the student changes in social group was the important barrier for the majority of students. Both environmental and community barriers affected the relationships between company, institutions, and informal links which impede an ability of the individual to join in PA. The two barriers identified are environment of the institution and aloofness of students staying outside the institution. However, societal barriers were very few felt by the students that hindered their PA participation.

Jacob (1999) conducted a study on student experiences in transition from college/technical institute to university. It assessed the challenges that students experienced from two years of post-secondary education at a college/technical institute to a university (in this instance, the University of Lethbridge). Three constraining factors were identified, i.e., previous learning experience, cultural change and negative self-awareness. The study was carried out on focus group of a maximum of eight students who were encouraged to freely express their thoughts, ideas and opinions of the challenges they faced in the transition process from a college/technical institute to a university. The 27 students comprised 11 male and 16 female students. In the cultural change findings, accessibility to all faculties was more limited in the university than the college/technical institute. A greater emphasis on a lecture-based teaching style in the university vs. what was experienced in a college/technical institute was found in the previous learning experience; while some self-perception of the necessary ability to succeed in university was found in negative self-awareness.

2.9 Appropriate and reasonably conducive campus

Appropriate and reasonably conducive campus is another significant factor for a Private HEI to attract students to further their studies. Yang (2006) conducted a study on the perception of college students on the relationship between the campus' physical environment and their learning. In facilitating students' learning, a campus architecture that accommodates diverse student learning needs and styles is important. The data was collected from an interview with 23 undergraduate students at the selected college. The interview questions covered architectural values and

students' perceptions, architecture and students' responses, comfortable physical learning environment and drawing students' genuine and meaningful voices. In the values and students' perception, it was found that the campus architecture must not focus merely on accommodating basic physical needs but should be also concerned with values. It is believed that values can be captured through the campus architecture. Some students responded that some spaces are favoured and others are not favoured by students in the architecture and students' responses. The students claimed that physical environment affects their studies. Campus architecture also needs to be designed in such a way that it is comfortable for the students. Based on the findings, architects should also pay attention to the campus' architectural elements that can help students in important ways, such as study needs. This study demonstrates that students do experience the architects' intention in the design and that architecture affects their studies.

2.10 Technological Capability

Technological capability is a game changer of an institution. The cutting-edge facilities offer hands-on experience to the students. The importance of using technology at the tertiary education teaching level cannot be overemphasized on the grounds that it equips the students with the most up-to-date information to face evolving changes in the industry. This is supported by Elzarka (2012) who said that incorporating innovation can help students to plan their future profession, benefiting from best instructional works on, creating higher critical thinking exercises and drawing in students whose associations with innovation were progressively local, among others. The information gathered tended to the institutional strategies,

confidence in the learning advantages, adequacy with incorporating innovation with substance, boundaries to innovation utilization, and individual employments of innovation. An online survey was conducted on 379 full and part-time faculty staff in the US. However, only 203 faculty staff feedback was received. The study found that reception rate for individual utilization has the most grounded association with the selection rate for experts. This outcome bolsters the significance of innovation ability utilization in the tertiary education.

Technological capability in manufacturing, engineering and technology education is equally significant. Kraebber (2008) conducted a survey on getting teachers to figure out what instructive advances are being utilized, the components that influence the selection and execution of the innovations and the apparent effect of the technologies. The study was conducted using web-based survey of manufacturing, engineering and technology educators at the Accreditation Board of Engineering & Technology (ABET) and the Association of Technology, Management and Applied Engineering (formerly NAIT) accredited colleges and universities in the US in 2008. A total of 465 faculty members responded to this survey. From the response, it shows that instructive innovations have found their way into the assembling and training classrooms of the responding faculty members. This included technologies using word processing, spread sheets and presentation graphics. About 60% of respondents from course management and collaboration use the internet; while classroom interaction has a low percentage of just 5% of the respondents and the use of distance delivery was infrequently reported but instructive innovation in classes with a separation conveyance segment was significantly greater than in traditional face-to-face class. Cost and time also has a significant impact on the implementation

and educational technologies used. Moreover, the respondents reported that incentives in adopting technology were not provided to them. Thus, the respondents suggested higher concern and awareness of new technologies as well as concern with time and assets identified for the utilization of instructive innovation in providing education.

Nowadays, the implementation of technology integration in HEIs has become a major trend. In implementing technology integration in tertiary education, Kajuna (2009) conducted a study at University Dar-es-Salaam, Tanzania. The objective of this study was to explore and assess the basic implementation of technology at the University of Dar-e-Salaam in Tanzania. Classroom practices were inspected and what encompassed the learning and showing procedures utilization of innovation from the perspective of educators and students. The use of innovation of four of Ely's eight conditions for selection of advancements and Apple Classroom of Tomorrow (ACOT's) improvement phases of innovation were also assessed. The methodologies used for the study were interviews and documents analysis. In the study, several staff were interviewed: 24 students, 10 faculty members, one head of department and one faculty dean. All respondents represented the Science and Education Faculty. The result is that there is an optimistic attitude towards using computers in learning and teaching. Nevertheless, insufficient computers, lack of knowledge in computer usage, lack of skills of educators and students, absence of training in technological advances and absence of actual technology planning added to the failure of implementing technology. The recommendations of this study are increasing the importance and emphasis on teacher training and development of computer skills, formulating technology plans at various levels involving teaching staff, establishing

technology committees to supervise all aspects of usage of technology and forging partnerships with the local community to have various sources of capital for purchase of technology equipment as well as services.

Technological capability for a new venture is significant where it is leveraged through the other capabilities of the organization. Zou et al. (2010) conducted a study on technological capability and the internationalization plans of new pursuits. The study explored the effect of new growth strategies used by China's new ventures on technological capability, the blend of mechanical and administrative systems' ability and also budgetary capital. In this study, 400 new ventures in high-tech sectors in Shanghai, China were selected. Strategic Orientation was the dependent variable while Technological Capability, Networking Capability, Financial Capital and Control Variable (such as organization size, period, life cycle and industry lifecycle) were the self-determining variables. The results show a substantial implication because the variances in domestic and international new ventures have been predicted by previous studies on technological capabilities. It is also indicated that technology leverage and the interrelation between technological capability and networking capability help in predicting an undertaking's new global strategic direction. High technological capability empowers new undertakings to extend their business to worldwide markets.

Zahra (1996) conducted a study on the moderating impact of technological opportunities related to governance, proprietorship and corporate entrepreneurship. This study focused on entrepreneurial risk taking in the largest industrial corporations in the US. It studied the association of a company's governance and

proprietorship systems with its level of corporate entrepreneurship, defined here as consisting of advancement target for business creation and offering and vital regeneration. The data were collected from secondary sources and through a mail survey that was directed to the CEOs or the highest-ranking executives of the manufacturing corporations in the 1988 Fortune 500 list. An important finding from this study is that perceived technological opportunities may significantly moderate the associations of corporate governance and ownership systems with corporate entrepreneurship. A significant positive coefficient of the three-way interactions of short-term institutional ownership, technological opportunity and renewal was also found, indicating that the short-term institutional investors might be more relevant for strategic renewal in stable environments.

A study on technological capability, strategic flexibility and product innovation was conducted by Zou et al. (2010). This study examined the role of technological capability in innovation of a product. An organization's technological capability was established through time and gathered over its previous findings. The final sample consisted of 192 firms with a 38.4% response rate. The organizations in China that manifested high-technology operations, such as electronics, information technology as well as telecommunications, were selected. An undeniably beneficial outcome on exploitative development transformed U-Shaped association with explorative advancement coming from the technological capability. In addition, strategic flexibility can have a positive association with technological capability and examination.

Anand and Kogut (1997) conducted a study on the country's technological capabilities, organization's competition and foreign direct investment (FDI). The researchers used the data from the US Department of Commerce to classify the largest portion of new FDI entering into the US and using their technological motivations as part of their investment. With regards to the technological capabilities and competition, the data was collected from the Research and Development (R&D) expenditure data from unpublished series collected by the Organisation for Economic Co-operation and Development (OECD) for the investing countries. The findings show considerable similarities in the importance of technological competition and the role of US oligopolistic competition as a barrier to enter or signal greater capabilities. Only a small portion of FDI was pulled to sectors where the US has higher R&D expenditures relative to other nations. Strong prejudice on the technologically focused industries, such as capital equipment, electronics and chemical industries, was also found.

Technological capability has also been studied in the agrifood industry. A study was conducted by Claudia et al. (2016) on the technological capability and model development in measuring its application in the agrifood industry companies. The study was conducted using the observation approach and case study. The index model developed five micro-indices, i.e., resources, upgrading technology, routines and processes, mechanism of learning and accessibility and coordination. The findings show that the model is able to recognize the various types of technology capabilities used by the companies, is able to reduce bottlenecks and improve processes.

Imbambi, Oloko and Rambo (2017) conducted a study on the Western Kenya sugar companies on the influence of technological capability on competitive advantage. The participants comprised 727 senior and middle level managers and a sample of 88 participants was used in this study. The findings show that the companies had technological capability limitations and this led to the result of no significant relationship between technological capability and competitive advantage. Thus, the researcher suggested the company pays more attention to technological capability management to facilitate its operations.

In the telecommunications industry, technological capability and technology management play a significant role. Weiwei et al. (2014) conducted a study on the impact of relationship between technological capability and technology management in China's telecommunication industry. The study used the Haken model to conduct the model analysis. It was found that technological capability has a leading role in the development of China's telecommunications industry. It also fosters the development of technology management in the organization.

Apart from that, Lim et al. (2013) discussed the development and sustainability of an organization's IT capability reputation based on the perception of IT executives. The arguments were that the IT executives will work to project an image of highly capable skills to the external stakeholders and this will lead to the organization's capability reputation. The findings show that there is a practical implication related to the organization in terms of IT reputation strategy and motivation for IT executives. This has led to the increased power among the top management and has improved the legality of the organization.

Overall, technological capability prepares students for future careers, maximizes the finest instructional practices and can develop higher thinking activities. The factors identified are critically significant in manufacturing, engineering and technology education. Similarly, the implementation of technical integration in HEIs is significant and positive towards teaching and learning. Besides that, technological capability also has important effects on new ventures. The positive effect can be seen in strategic flexibility and product innovation. It can be concluded that technological capability is defined as the perception of students of the DRB-HICOM U's teaching and learning infrastructure as well as facilities. The summary of literature discussed on the dimension of technological capability is presented in Table 2.2.

Table 2.2
Dimensions of Technological capability from Literature Review

No.	Author	Field of study	Findings
1.	Imbambi et al. (2017)	Influence of technological capability on competitive advantage	<ul style="list-style-type: none"> ▪ There is no significant relationship between technological capability and competitive advantage in the sugar companies in Western Kenya ▪ This is due to technological capability limitations
2.	Claudia et al. (2016)	Technological capability in agrifood industry	<ul style="list-style-type: none"> ▪ Five micro-indices were developed, namely resources, upgrading technology, routines and processes, mechanism of learning and accessibility and coordination ▪ The model is able to identify the range of technology capabilities used by companies in order to reduce bottlenecks and improvement in terms of operations.
3.	Weiwei et al. (2014)	Technological capability in the development of telecommunication industry	<ul style="list-style-type: none"> ▪ Technological capability plays a significant role in the development of China's telecommunications industry.

No.	Author	Field of study	Findings
4.	Lim et al. (2013)	Information technological capability	<ul style="list-style-type: none"> ▪ The reputation of IT capability can be sustained through acceptable exchange of their IT executives ▪ IT corporate reputation is the basis of sustaining competitive advantage because of uncertainty and time constraints
5.	Elzarka (2012)	Innovation ability	<ul style="list-style-type: none"> ▪ Incorporating innovation gives advantage to plan students future profession, i.e., best instructional work and creating higher critical thinking ▪ Boosts the importance of innovation ability in higher education.
6.	Zou et al. (2010)	Technological capability and internationalization plans for new direction	<ul style="list-style-type: none"> ▪ China's new ventures on technological capability and the blend of mechanical systems, systems administration ability and budgetary capital. ▪ High technological capability empowers new undertakings to extend their business to worldwide markets.
7.	Kajuna (2009)	Implementation of technology at University	<ul style="list-style-type: none"> ▪ Used Apple Classroom of Tomorrow (ACOT's) ▪ They was hard work and optimistic attitude towards using computers in learning and teaching.
8.	Kraebber (2008)	Utilization of instructive advances	<ul style="list-style-type: none"> ▪ Innovation had found its way into the assembling training classroom ▪ Greater than in traditional classes
9.	Anand (1997)	Country's technological capability, organization's competition and foreign direct investment	<ul style="list-style-type: none"> ▪ Many similarities in the importance of technological competition
10.	Zahra (1996)	Impact of industry technological impact	<ul style="list-style-type: none"> ▪ Perceived technological opportunities may significantly moderate the association of corporate governance and ownership system.

2.11 Change of management

Change may affect the emotions of staff involved; hence, change must be managed in a proper way. Some of the staff may find it positive and change could give more opportunities. In contrast, some of the staff may find it a threat because of the uncertainty that could take place after the change. Marie and Lamb (2015) conducted a study on understanding emotions in higher education change of management. The study explored the emotions of the employees involved during the merging of departments in a higher institution. This was done to identify how employees' perceptions shape their emotional feedback towards organizational change. It was found that due to change, the employees felt that there is hope to look forward to and threat to manage carefully and not avoid. Besides that, change takes place due to the volatile and dynamic environment. Halsall and Karanii (2015) described the process of change of higher education in the UK and the need to adapt to the change. One University was selected to take part in the change of management programme to investigate whether the change brought success or otherwise. The staff who participated in the study were involved in the planning and implementation of the change programme. The study found that in order to ensure the success of any change programme, the university should take the bottom-up approach. On the other hand, it is seen to be top-down approach by the management team. This is also stressed by Jamali (2005) that due to competitive challenges faced by the management of education and training companies, there is a need to constantly assess the implications of the change in the educational institutions. The adjustments are needed by the institutions in order to embrace the challenges. The challenges were highlighted in terms of globalization where it required attention and

collaboration among schools, industry partners as well as guidelines for curricula renewal and delivery mechanism in meeting the needs of managers.

Change of management requires a strategy to ensure the success of planning and its implementation in the organization. The top management plays an important role in guiding the staff to the right decision. This is supported by Bjorn (2014) who conducted a study on the factors in university governance which are significant in materializing the strategic change in the institutions. About 26 European universities participated in the study to give their views on the factors related to strategic change. The findings indicated the universities perceived it as depending on the leadership, process of decision-making, communication as well as assessment.

Previous scholars have described the success of planning and implementation in change of management for an institution. There was less attention highlighted in order to sustain the implementation that took place. Clemens and Geoffrey (2013) explained that in ensuring the success of planning and implementation, it is equally important to embark on effective key areas of change of management, leadership and governance to be embedded into the operations of institutions. The study was conducted based on 188 experienced leaders on sustainability from the UK, Australia, North America, the European mainland and South Africa. The findings show that the transformation initiatives conducted to ensure the sustainability of the universities requires an integrating framework to address the curriculum, engagement activities, research and operations. These activities must be conducted consistently and comprehensively on an institutional approach besides identifying the key challenges and lessons learned to achieve effective change of management and

leadership of the institution and in ensuring the transformation initiative can be sustained.

Change of management requires strategic planning to ensure effective implementation in the organization. Apart from the planning and implementation, the structural change that takes place may affect the emotions of the staff. As described earlier, communications and support from management is crucial. It provides the clear direction for the University and also guidelines in terms of daily operations. The next challenge is to sustain the change after its implementation in the institution. A proper framework needs to be in place prior to the implementation focusing on engagement activities, curriculum, research and operations.

2.12 Chapter Summary

In concluding this chapter, globalization has had a significant impact on the education industry where HEIs have to prepare the students with necessary skills, knowledge and ability. In this way, it can prepare the right candidates to be employed by the employers. The application of the TPB in various settings would be able to predict human social behaviour towards certain intentions. However, the nature will distinguish the overall result or the intention towards the study. It will further discover the objective of this study on the technological capability perception of students and staffs' intention in sustaining competitive advantage. In sustaining competitive advantage, most of the scholars have highlighted these areas, namely vision and mission, academic staff qualifications, teaching and learning as well as conducive campus environment. Besides that, technological capability is important

for the development of students. It prepares the students for future careers, maximizing the best instructional practices and the ability to develop their critical thinking. It is equally vital to the new ventures where this will ensure the sustainability of the organization in the market. Additionally, change of management addressed in this study provides greater depth in terms of understanding the implementation process through the feedback from the staff. The following chapter describes the research methodology used to discover the staff and students' technological capability perception towards the intention of DRB-HICOM U to sustain its competitive advantage.



CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter describes the best research methods applied to assist the researcher to achieve the objectives of the study. The purpose of this study is to explore the technological capability perception towards sustaining competitive advantage: a case of DRB-HICOM University of Automotive (DRB-HICOM U) using the Theory of Planned Behaviour (TPB). This chapter covers the research framework, hypotheses/propositions development, research design, operational definitions and instrumentation, data collection, sampling and procedure and techniques of data analysis.

3.2 Research Method

Research methodology is the process of collection of data and information for a specific study. The data and information collected can contribute new knowledge to the society. Research can be described as a logical and systematic search for new and useful data on a particular study (Rajasekar & Philominathan, 2013). The usage of 'how' and 'what' basically condenses what research is. It is a process of discovering solutions to technical and social issues using objective and systematic analyses. It is a pursuit of information and exploring the unknown truths. According to Kumar (2014), research is an organized enquiry that uses satisfactory exploratory techniques to cater to some issues and provide new information on the most relevant part. Based on social science studies, Anderson and Gerbing (1988) defined research as a restrained endeavour to address or tackle issues through the gathering and

examination of essential information with the end goal of depiction, clarification and expectation.

A mixed qualitative and quantitative method is used in this study. As for the strategy of this study, action research is used to provide further justification. Both quantitative and qualitative research approaches were found suitable as it is closely related to education (Patton, 2002; Strauss & Corbin, 1990). This statement is closely related study to the learning about a phenomenon (Libarkin & Kurdziel, 2002).

3.3 Research Framework

Theory is used as a basis or grounds of a study. Various studies have used theories to justify their work. Theories are utilized formally and informally by grown-up people where we gained assistance by utilizing the models. We can recreate, in our brains, the impacts of activities, build forecasts, and let "our [mistaken] theories... perish in our stead" (Dennet, 1995). Carry (1991) explained that it helps in rationalizing about many areas, covering the physical, social and psychological world. A research framework is a description of information about the area of study. Basically, in this chapter, the related theories and independent, dependent and moderator variables are further deliberated upon.

3.4 Theory of Planned Behaviour (TPB)

The TPB holds that only particular mentality towards the conduct being referred to can be relied upon to foresee that behaviour. Notwithstanding measuring attitude at the conduct, we need to measure people's subjective standards – their feelings about

how people they consider will see the conduct being eluded. With a specific end goal to anticipate somebody's expectations, concerned these convictions can be as critical as knowing the individual's mentality. Ultimately, intentions are influenced by perceived behavioural control. The perceived behavioural control eludes the individuals' view of their ability to perform a given conduct and these markers lead to aim. By and large, the more noteworthy mentality and subjective standard, and the more unmistakable the evident control, the more grounded should the person's arrangement to perform the behaviour being referred.

The TPB is a commonly used theory to measure the attitude and behaviour in human social behaviour studies. This theory was developed by Icek Azjen in 1985 which is able to measure how human behaviour is directed. It predicts the incidence of a particular behaviour, provided that behaviour is planned. Based on Ajzen (1985), the theory outlines three variables which the hypothesis recommends will gauge the aim to perform conduct. The goals are the precursors of conduct. Since the TRA is related to voluntary behaviour and is not fully under control had caused the additional to the theory namely the theory of planned behaviour (TPB). In TPB, it forecasted thoughtful behaviour; due to behaviour can be thoughtful and deliberate. The intention towards certain behaviour is measured by attitude towards behaviour, subjective norms and perceived behavioural control.

3.4.1 Attitudes towards Behaviour

A person's overall assessment of the performance is called attitude towards behaviour. Two elements work together, i.e., belief about outcomes of the conduct

(Example: behavioural convictions - by giving new commuter system will expand the general population transport trips) and the positive and negative accommodating about the components of behaviour (outcome evaluations - decreasing car trips is expected).

3.4.2 Subjective Norms

Subjective norms refer to a person's own particular assessment of the social pressure to perform objective behaviour. Subjective norms is acknowledged as having two sections which work in joint effort: convictions about how different people, who may be by one means or another vital to the individual, would like them to bear on (normative beliefs).

3.4.3 Perceived Behavioural Control

Perceived behavioural control is the extent to which an individual feels prepared to pass the behaviour. It comprises two aspects: the measure of an individual has control over the behaviour and how beyond any doubt an individual feels about having the ability to perform or not perform the behaviour. It was directed by control beliefs about the power of both situational and inside components to impede or support the performing of the behaviour.

3.4.4 Behaviour

Mediations were intended to change the conduct of people in the implementation research. The conduct of the objective should be shrewdly characterized as far as the

objective, activity and time. Case in point, in a setting of transportation, the objective was referred as transport, activity as the trip, the connection as the different sort of outing and time was how long it took to travel.

3.4.5 Intention

Even though there is no clear relationship between behavioural aim and real conduct, it can be measured through intention. It is the most important reflection aids of TPB model from the past models of mentality conduct relationship. In this way, the variables in TPB can be utilized to focus usage viability without measure of actual behaviour.

3.4.6 Actual Behaviour

Actual behaviour controls the impact of intentions towards behaviour. External and internal factors can control or moderate the performance of an individual. Examples of external factors are money, cooperation by others, etc., and internal factors can be knowledge, skills, etc.

3.4.7 Validity

The goal of this study is to measure the moderating role of technological capability perception towards sustaining competitive advantage for DRB-HICOM U using the TPB. In terms of measurement, validity is the capability of a tool to measure what it is designed to measure (Kumar, 2014). Validity can be described as the degree to which the researcher can measure what he or she has set out to measure (Smith,

1991). Babbie (1989) described that the commonest definition is epitomized by the question as to whether or not we are measuring what we purported to measure. Construct validity is adopted which indicates the quality of a research instrument to measure what it is supposed to measure and it is based upon numerical process. It had dictated by discovering the commitments of each develop to the aggregate difference experiential in a wonder (Kumar, 2014).

3.4.8 Reliability

In reliability, it was highly significant to create the dependability of every amount. For direct measures, one form of reliability may be made utilizing a file of inward consistency (to figure out if the things in the scale are measuring the same build). In further, the light of the fact that individuals can sensibly both positive and negative convictions about the same behaviour, it was not fitting to survey the reliability of backhanded measures utilizing an interior consistency basis.

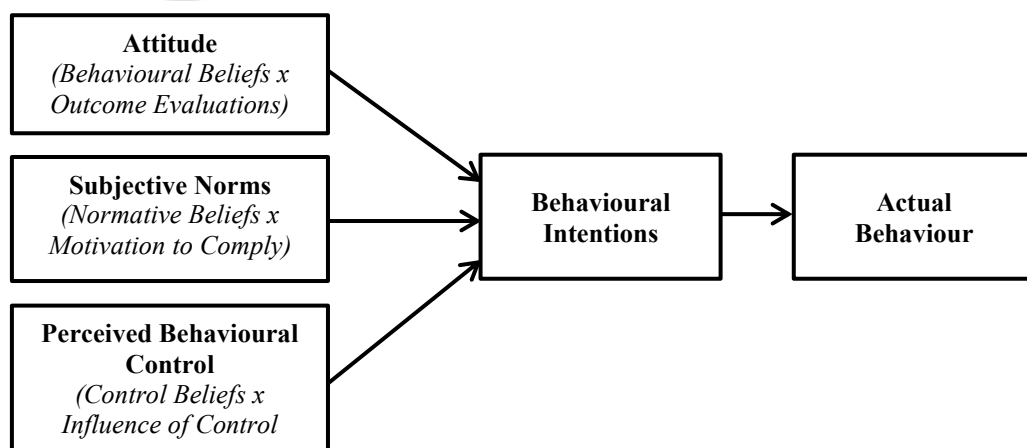


Figure 3.1
Theory of Planned Behaviour
Source: Adopted from Ajzen (1985)

TPB is appropriate for this study because it has been used by various researchers to predict human behaviour. The state of mind towards behaviour, subjective norms and perceived behavioural control may differ in terms of actual behaviour and intentions. In this study, three independent variables are used to explore the moderating role of technological capability perception of intention of DRB-HICOM U to sustain its competitive advantage.



Therefore, the framework of this study is as per Figure 3.2.

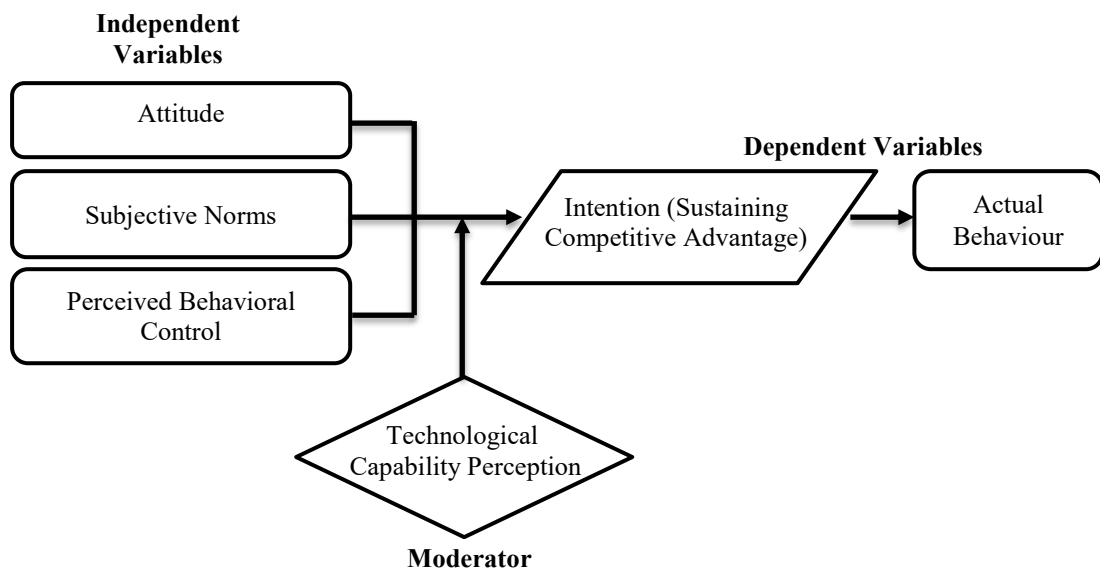


Figure 3.2
Theory of Planned Behaviour with Technological Capability Perception as Moderator

3.5 Hypotheses/Proposition Development

This study explores the intention of DRB-HICOM U towards sustaining competitive advantage by using the TPB. The TPB research framework was developed from the outlined research objectives. This research framework explores the intention of DRB-HICOM U towards sustaining its competitive advantage. Three variables are included in this model, i.e., academic staff qualifications, activities related to teaching and learning as well as an appropriate and reasonably conducive campus. These three variables have been supported by other scholars. For example, (i) *academic staff qualifications* - is supported by Danielson (2007) and Patterson (2010) had the proof on quest information and continuously structure the information in searching for the best practices; (ii) *teaching and learning* - Miles (2010) used

student learning and effective teaching; and (iii) *appropriate and reasonably conducive campus* - Yang (2006) explained the campus physical environment from the students' perspective and the relationship to their learning.

In addition to the three variables, a moderator variable of technological capability perception is used to measure the relationship between the variables and intention towards sustaining competitive advantage. Perceived behavioural control has been found to partner well without any difficulty of utilization or trouble identified with a particular innovation, which have been demonstrated to be real elements foreseeing expectation to utilize that innovation (Compeau & Higgins, 1995).

Based on Figure 3.2 above, it shows that a relationship exists between attitude toward the behaviour, subjective norms and perceived behavioural control and intention. It derived the intention on actual behaviour of the respondents. In sustaining competitive advantage, the criteria outlined by the Ministry of Education for a University must be fulfilled. The behaviour of DRB-HICOM U students towards the intention of DRB-HICOM U in sustaining competitive advantage through the use of TPB is explored in this study. This theory enables a clearer overview of the attitude of the staff and students towards the intention of DRB-HICOM U to sustain its competitive advantage.

Several hypotheses are developed in this study to address the significant relationship between the independent and dependent variables. The relationship result the actual behaviour of the intention based on the theory proposed. In previous studies on a similar industry, i.e., education, by Siragusa and Dixon, (2009), both stages in their

pilot study provide useful justification for the use of the TPB and focus on students' behaviour and expected utilization of ICT-based learning. According to Rofiq et. al. (2011), theorized guessed that demeanour had a positive effect on buyer's aims to buy utilizing Interned-based e-business.

Based on previous literature, the following hypotheses and propositions are developed:

Hypothesis 1: There is a positive effect of DRB-HICOM U students' and staff attitude on the intention of DRB-HICOM U towards sustaining competitive advantage.

Hypothesis 2: There is positive effect of DRB-HICOM U students' and staff subjective norms on the intention of DRB-HICOM U towards sustaining competitive advantage.

Hypothesis 3: There is positive effect of DRB-HICOM U students' and staff perceived behavioural control on the intention of DRB-HICOM U towards sustaining competitive advantage.

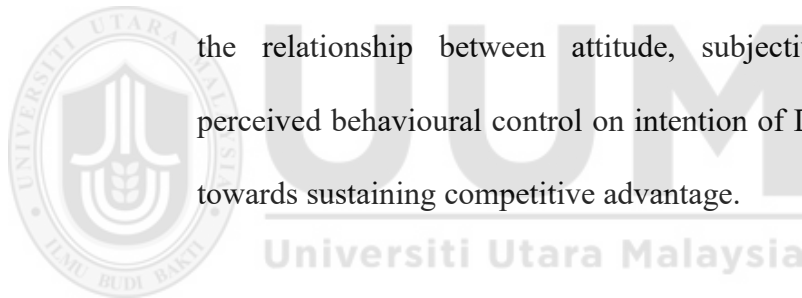
Proposition 1: DRB-HICOM U students' and staff attitude, subjective norms and perceived behavioural control lead to the intention of DRB-HICOM U to sustain its competitive advantage.

Zou et al. (2010) said that the hidden pre-assumption for the improvement of innovative information is that new pursuits have effectively settled their insight so

that they can further augment and extend their insight base. It can be troublesome for another dare to begin without any preparation in global markets without mechanical ability. Based on previous studies, the hypothesis and proposition below are developed:

Hypothesis 4: There is a moderating effect of technological capability perception in the relationship between attitude, subjective norms and perceived behavioural control on intention of DRB-HICOM U towards sustaining competitive advantage.

Proposition 2: Technological capability perception has a moderating effect on the relationship between attitude, subjective norms and perceived behavioural control on intention of DRB-HICOM U towards sustaining competitive advantage.



In a study conducted by Huang (2007) on the application of the TPB to record the school understudies' work related propositions in unexpected livelihood, estimated state of mind toward unforeseen job intervenes the relationship between subjective standards and school understudies' plan to participate in unforeseen work. This shows that behaviour and intention can be explored through the TPB and the following hypotheses are formulated:

Hypothesis 5: There is a mediating effect of intention of DRB-HICOM U towards sustaining competitive advantage in the relationship

between attitude, subjective norms, perceived behavioural control and actual behaviour.

Hypothesis 6: Actual behaviour has an influence on intention of DRB-HICOM U towards sustaining its competitive advantage.

In summary, the TPB is selected as an underpinning theory for this study because the variables used are relevant to the theory. Attitude, subjective norms and perceived behavioural control are used to measure the intention towards the actual behaviour. Furthermore, technological capability perception is selected as the moderator for this study due to the teaching and learning infrastructure in education.

3.6 Research Variables

As mentioned earlier, attitude, subjective norms and perceived behavioural control serve as independent variables to measure the intention of DRB-HICOM U towards sustaining its competitive advantage. These can show the effect on the dependent variables. The independent variables (attitude, subjective norms and perceived behavioural control) are used to explore the relationship between the dependent variables (technological capability perception and intention towards sustaining competitive advantage) for DRB-HICOM U using the TPB. Attitude, subjective norms and perceived behavioural control of the students are measured in terms of the intention of DRB-HICOM U to sustain its competitive advantage by using technological capability perception as moderator, thus leading to the actual behaviour.

3.7 Research Design

A research design outlined the diagram for leading the study that supports control over variables that could interfere with the rationality of the disclosures. Having a good research design helps the researcher to organize and realize the study in a way that will help the researcher to procure arranged results, thus extending the conceivable outcomes of getting information that could be associated with the honest to sincere condition (Burns & Grove, 2001). Research designs can be: exploratory (the specialist controls the free variable and arbitrarily select subjects to distinctive conditions); semi-trial (the agent works an autonomous variable yet subjects can't be randomized); or graphic (the primary goal is to definitely portray attributes of an individual, circumstances, or groups and the event with which certain occurrences happen) (Pollit & Hungler (1997). Creswell (2009) explained that in a study related to social sciences, the major research methods in education are quantitative, qualitative as well as mixed methods. Thus, this study uses the sequential approach, starting with the quantitative phase (figures), followed by the qualitative phase (individual experience) (Creswell, 2013).

Quantitative research provides a comprehensive evaluation of design based on responses received through formal, objective and organized processes, where the data is used to acquire necessary information; while the qualitative research method gives in-depth understanding of the responses from the survey conducted. The responses are subjective, where it can describe the “why” and “how” of a person’s behaviour, which is difficult to acquire through the quantitative method. Hammersley and Atkinson (2007) described a qualitative study, “research design should be a reflexive process operating through every stage of a project”; the

exercises of gathering and dissecting information, creating and changing hypothesis, refocusing the exploration inquiries, and distinguishing and managing legitimacy dangers are normally going on simultaneously at the same time, affecting the majority of the others. Furthermore, the analyst may need to re-evaluate or alter any outline choice amid the study in light of new advancements or to change in some other part of the configuration. The last method, mixed method, is a blend of quantitative and qualitative study into one method. It is more suitable for a research focused more towards getting feedback on complex questions. This method uses the strengths of one method that helps to overcome the flaws of the other method. In this study, mixed data collection method is used. Trochim and Land (1982) described quantitative research as the glue that holds the research. A diagram was used to structure the investigation, to demonstrate how most of the critical parts of the examination – tests or gatherings, measures, actions or projects and systems for task – cooperate to attempt to highlight the focal exploration queries. The quantitative data would be from surveys and theories to prove the hypotheses related to the research questions in this study. In a nutshell, based on the research questions and research objectives in the earlier chapter of this study, the mixed method is used in order to get greater insights from students and staff.

The qualitative study for this research includes literature review, questionnaire and theory related to the study as well as the original documents from the management. Very likely, this is similar to another view by Denzin and Lincoln (2000) that qualitative research is an arranged movement that finds the spectator globally. It embodied a game plan of interpretive, material practices that make the world visible. It changed the world into a movement of representations, including field notes,

interviews, examinations, photographs, recordings, and overhauls keep informed to the self. At this level subjective examination incorporates an interpretative, naturalistic approach to manage the world. This suggested that subjective examiners study things in their normal settings, trying to comprehend, phenomena with respect to the suggestions people pass on to them.

3.7.1 Quantitative Research

In order to test the objectives of the theories, a quantitative study is used to examine the relationship between the variables (Creswell, 2009). The objective of this study is to examine the relationship between student attitude, subjective norms and perceived behavioural control towards intention of DRB-HICOM U to sustain its competitive advantage through technological capability perception as the moderator. In order to collect data for this quantitative research, a survey questionnaire was employed. The data was identified as numbered data and collected from DRB-HICOM U students taking programmes that expose them to the use of technology. After the variables were identified and the theoretical framework developed, the next stage was to design a research where it can help to gather and analysed data for a conclusion. The steps for the quantitative research design is as presented in Table 3.1. A quantitative research design begins with the details of the study, comprising the population of the respondents, unit of analysis as well as the sampling design. The instrument development takes place during the discussion that involves the structure, design and measurement scale for the questionnaire. In ensuring the content validity and the reliability, pretesting and pilot studies are conducted. Then, the data collection methodology deliberates the method, procedure and duration

required to collect the data for a study. Finally, the analytical methodology and interpretation of the hypotheses testing are discussed.

Table 3.1
Steps for Quantitative Research Design

Step 1 Details of Study	Activities		
	Population	Unit of Analysis	Sampling Design
Step 2 Instrumentation	Design of survey questionnaire	Structure of questionnaire	Measurement Scale
Step 3 Pretesting & Pilot Study	Content validity	Pilot study	
Step 4 Data Collection Methodology	Data collection method	Data collection procedure	Pilot study
Step 5 Analytical Methodology and Interpretation	SPSS	PLS-SEM	

Source: Adapted from Creswell (2009)

3.7.2 Survey Method

In social science studies, Mertens (2014) described that the method commonly used in the education sector is the survey method. In this study, the population is based on only one organization, i.e., DRB-HICOM U. Previously, surveys were conducted in a self-administered manner or via post or administered directly to the respondents. Nowadays, surveys are commonly conducted through internet-based survey and are becoming more popular. However, it has been found that there are small discrepancies in the findings compared to both methods used (Lonsdale, Hodge, & Rose, 2006). Based on that, the traditional method was used to distribute questionnaires to the students after their class session.

3.7.3 Qualitative Research

In order to conduct qualitative data analysis, the ATLAS.ti software Version 7.5.10 (Muhr, 2014) was used to record and analyze the data. ATLAS.ti can be utilized to sort out and examine meetings, field notes, printed sources and different types of subjective information, including picture, sound and feature documents. As for this study, qualitative data was collected through interviews and focus groups. The first qualitative data collection was through meetings and center gathering where open-ended inquiries and tests yield top to bottom reactions about individuals' encounters, recognitions, view, emotions and learning. The second qualitative data collection was through observations, where it describes the fieldwork exercises, practices, activities, discussions, interpersonal co-operation, authoritative or group forms. This chapter provides the approach and methodological issues which address research questions and research purposes of this study. The underpinning theories, the research framework of the study and various research hypotheses are also provided in this chapter. It covers the research design that serves as a guideline to conduct this study and population and sampling techniques are conducted accordingly. The variables are measured through a pilot study; reliability and validity are also explained in this chapter. Data is analysed through descriptive analysis, correlation analysis and multiple regression analysis.

3.7.3.1 Focus Group Interview Method

This aim of this research is to examine the relationship of staff attitude, subjective norms and perceived behavioural control with technological capability perception as moderator in the intention of DRB-HICOM U to sustain its competitive advantage.

Qualitative data in this study was collected via the focus group and interview methods. The data may comprise of field notes with point by point depictions, including the setting inside which the perceptions were made. Table 3.2 explains the framework of the components to observe:

Table 3.2
Components to Observe

Characteristics of participants (individually and as a group)	Gender, age, profession/vocation, dress, appearance, ethnicity Attitude toward subject, toward others, about self Skill and knowledge levels Statement about commitments, values, changes to be made
Interactions	Level of participation, interest Power relationships, decision-making, current issues General climate for learning, problem-solving Levels of support, cooperation
Non-verbal behaviours (Learners, presenters)	Facial expressions, gestures, postures Interest and commitment – initial impacts
Programme Leader (s), presenters	Clarity of communication, access to questions Group leadership skills, encouraging full participation Awareness of group climate Flexibility, adaptability Knowledge of subject, use of aids, other teaching/learning techniques Sequence of activities
Physical surroundings	The room-space, comfort, suitability Seating arrangements

Source: Adopted from Clouthier et. al., (1987)

Patton (2002) mentioned that the nature of qualitative data depends, as it were, on the method expertise, affectability and respectability of the specialist. Efficient and thorough perception includes more than simply being available and glancing around. Skilful questioning includes substantially more than simply making inquiries. Content examination requires extensive more than simply perusing to see through

details of the content. Producing valuable and believable subjective discoveries through perception, talking and substance investigation obliges discipline, information, preparing, practice, imagination and diligent work.

3.7.4 Triangulation of Research Findings

In this study, the triangulation method was used to help strengthen the findings and conclusion (Berg, Bruce Lawrence, 2004). Since the survey questionnaire method was used for the quantitative survey and the staff focus group interview session for the qualitative study, the samples of the respondents were determined through the population that volunteered to participate in this study. As for the quantitative study, the students were selected from programmes related to technological capability. Stratified random sampling technique was adopted to determine the correct sample. As for the qualitative method for staff, the staff were selected based on the following criteria: aged 20 years and above; minimum of one year of working as they may have more experiences in the changes that occurred during transition from college to University status. The focus group interview session was conducted through proper interview protocol using structured questionnaire. The evaluation of findings for both quantitative and qualitative methods used the PLS-SEM and ATLAS.ti, accordingly.

3.8 Quantitative Research Method

3.8.1 Population and Sampling

A population can be defined as a group of people, entity or things taken for a measurement derived from the sample (Sekaran & Bougie, 2010; Webster, 1985). This study focuses on the behavioural study of students and staff of DRB-HICOM U. Stratified random sampling procedure was used to select the sample. The population for this study was 600 full-time registered students, and 338 students selected from semester three and above from three programmes related to technological capability. The sample size was identified through the sample table based on Krejcie & Morgan (1970). According to Table 3.3, the population of semester three and above is 338 students; therefore the sample size of 181 students is considered sufficient.

Table 3.3
Sampling Frame for Quantitative Study

No.	Programmes	Students Population	Semester 3 and above students	Sample Selected
1.	Diploma in Automotive Management Systems (“DMS”)	347	176	94
2.	Diploma in Automotive Service Technology (“DST”)	277	121	65
3.	Diploma in Automotive Vehicle Assembly Management (“DVA”)	61	41	22
Total		600	338	181

Source: Faculty of Engineering & Technology (Data as at September 2015)

3.8.1.1 Unit of Analysis

The unit of analysis in this study is the organization, i.e., DRB-HICOM U. The survey respondents targeted are students and staff of DRB-HICOM U. The students were taken from three programmes in semester three and above while the staff came from administration and academia.

3.8.1.2 Sampling Design

Salant and Dillman (1994) said that a sample is a group of respondents chosen from a larger group or population. It assists in reducing the sampling error based on the sample size selected. According to the rule of thumb to determine sample size, it should be within the range of 30 to 500 (Roscoe, 1975). Hair et al. (2017) recommended that the sample size should be 10 or more times the number of the variables. Besides that, Salkind (2003) said that having a correct sample size is crucial for any study or research.

3.8.1.3 Sample Size

By using a suitable sample size, it will help to reduce sampling error. The main idea of having suitable sample size is to represent the population of the study. In this study, the sample size is taken from the student population.

3.8.1.4 Estimating Expected Rate of Response

In this study, 300 questionnaires were distributed to the students. Babbie (1989) further explained the 50% response rate can be considered as adequate in social science surveys. Based on the explanation by Babbie (1989), at least 150 responses were expected from the survey.

3.8.1.5 Sampling Techniques

Stratified random sampling was adopted for this study. Kumar (2014) mentioned that by using stratified random sampling, the population selected is homogeneous with respect to the characteristics being stratified. The five steps suggested by Gay & Diehl (1992) were adopted: (i) define the population; (ii) determine the desired sample size; (iii) identify the variable and desired subgroup (strata); (iv) classify the population elements into the subgroups; and (v) select the sample randomly.

3.8.2 Operationalization and Instrumentation

The operationalization in this study described the variable means discovering a quantifiable, computable, and legitimate list for the variable (self-governing and non-self-governing variables), and figuring out how to control that variable so as to have two or more levels. Sekaran (2003) said that the use of the right instruments can provide higher accuracy in terms of results and the research quality. Specifically, a survey questionnaire and focus group interview were used in this study. The next sections further discuss the design, structure and measurement scale used for the

questionnaire. In the questionnaire, the constructs and dimensions of each variable and their sources are explained.

There is limited research on this study's area which focuses on the progress from college to university using TPB and technological capability perception as moderator. Only a few studies have explored the university students' attitude, such as Agudo et al. (2014); Buchanan et al. (2013); Tariq et al. (2017) and Teo et al. (2016). In another study, McRoy and Gibbs (2003) described the change of status in the UK was driven by government order, in the school's case the wish was self-made and it was driving the council towards affirmation of college status. On the other hand, senior executives must understand the legislature recognition with the need to change, while illustrating that the current state is definitely not feasible, with the goal them should identify with the present position, which may be seen protected and safe, and escalating towards the sought of progress (Van Buren & Werner, 1996). The study found on struggling junior college to a thriving university, (Collins, 2001) found that associations were moved to enormity by discriminating advances in three essentials field: taught individuals, restrained thought and trained activity. Hence these three standards gave a structure to the story North Greenville's transformational experience. Students experienced challenges in the process of making the transition from a college/technical institute to a university. It was also apparent that some of these challenges were resolved once the students had moved out of the "neutral zone" and assimilated into the new environment (Jacob Anne, 1999). Based on the above literature, in this study, technological capability is conceptualized as the perception of students of DRB-HICOM U's infrastructure and facilities, teaching staff as well as knowledge.

Ajzen (2006) noticed that there is no standard configuration for TPB measures in light of the fact that estimation things must be built for diverse conduct or populaces. In this study, the format item was adopted from the four constructs provided by Ajzen (2006) and designed the items to become well-matched with the taught behaviour in this study i.e., sustaining competitive advantage. A seven-point Likert-type scale, ranging from 1 = *strongly disagree* to 7 = *strongly agree* was adopted in this study. The measurement of items for students is described in Table 3.4.

Table 3.4
Measurement of Items for Students

Variables	Items	Supporting Studies	Items Variables
Demographic Profile	4	Siragusa & Dixon (2009)	<ol style="list-style-type: none"> 1. Gender 2. Age 3. Race 4. Programme
Intention	4	Huang & Lee (2012) Ajzen (2006)	<ol style="list-style-type: none"> 1. I intend to engage in the academic programmes that possess technological capability as its competitive advantage. 2. I will try to engage in the academic programmes that possess technological capability as its competitive advantage. 3. I very much would like to take the academic programmes that possess technological capability as its competitive advantage. 4. How likely is it that you will take the academic programmes that possess technological capability as its competitive advantage?
Attitude	5	Siragusa & Dixon (2009) Ajzen (2006)	<p>Do you believe that taking the academic programme that possess technological capability would be..</p> <ol style="list-style-type: none"> 1. Bad – Good 2. Foolish – Wise 3. Worthless – Worthwhile 4. Irrelevant – Relevant 5. Dull – Interesting

Variables	Items	Supporting Studies	Items Variables
Subjective Norms	5	Huang & Lee (2012) Ajzen (2006)	<ol style="list-style-type: none"> 1. Most people who are important to me think that I should engage in the academic programmes that possess technological capability as its competitive advantage. 2. It is expected of me that I should engage in the academic programmes that possess technological capability as its competitive advantage. 3. The people in my life whose opinions I value would approve of my engaging in the academic programmes that possess technological capability as its competitive advantage. 4. Many people like me engage in the academic programmes that possess technological capability as its competitive advantage. 5. Generally speaking, I want to do what most people who are important to me think I should do.
Perceived Behavioural Control	6	Randall (1994) Ajzen (2006)	<ol style="list-style-type: none"> 1. How much personal control do you feel you have over whether or not you engage in the academic programmes that possess technological capability as its competitive advantage? 2. If I wanted to, I could engage in the academic programmes that possess technological capability as its competitive advantage. 3. It would be mostly up to me whether or not to engage in the academic programmes that possess technological capability as its competitive advantage. 4. Daily involvement in the academic programmes that possess technological capability as its competitive advantage could be improving my knowledge. 5. Daily involvement in the academic programmes that possess technological capability as its competitive advantage would give me extra knowledge. 6. Daily involvement in the academic programmes that possess technological capability as its competitive advantage would help me feel better and improve

Variables	Items	Supporting Studies	Items Variables
			my knowledge.
Technological capability Perception	5	Zou et al., (2010) Ajzen (2006)	<ol style="list-style-type: none"> 1. DRB-HICOM U has large number of financial investment in R&D and programme development 2. DRB-HICOM U has high-profile technological background personnel in their management team 3. DRB-HICOM U has its own product or process patents. 4. In DRB-HICOM U, the management team encourages innovative ideas and their implementation 5. Internal research and development in DRB-HICOM U is greatly emphasized.
Actual Behaviour	4	Huang & Lee (2012) Ajzen (2006)	<ol style="list-style-type: none"> 1. I will try to use the academic programmes that possess technological capability as its competitive advantage in daily life. 2. I will make an effort to attend the academic programmes that possess technological capability as its competitive advantage on regular basis. 3. In general, I enjoy being involved in the academic programmes that possess technological capability as its competitive advantage. 4. It causes a lot of pleasure and fun for the students if they are found to be involved in the academic programmes that possess technological capability as its competitive advantage.

3.8.2.1 Design of Questionnaire

This section explains how the questionnaire was designed, including the length and format of the questionnaire. It is significant for obtaining the response from the respondents. It had led to the initial impression for the respondents towards the survey, in other way whether to participate or not. Hence, the questionnaire was

carefully categorized into sections with simple formatting for better reading. For example, the size of the font used as well as the font style. In terms of language, it was bilingual which helped the respondents to have better understanding. The items used for variables measurement of this study were discussed based on the previous research. The sections in this questionnaire are as follows: Section A: Demographic Profile, Section B: Research Areas – Intention, Attitude, Subjective Norms, Perceived Behavioural Control, Technological Capability Perception and Actual Behaviour. The independent variables are Intention, Attitude, Subjective Norms, Perceived Behavioural Control and Technological Capability Perception. On the other hand, the dependent variables are the intention and actual behaviour. The total items in the questionnaire are 33 items inclusive of the demographic profile. The summary of the questionnaire design is presented in Table 3.5.

Table 3.5
Summary of Questionnaire Survey

Variables	Number of Questions	Dimension	Supporting Studies
<u>Section A</u> Demographic Profile	4	1. Gender 2. Age 3. Race 4. Programme	Siragusa & Dixon (2009)
<u>Section B</u> Intention	4	1. Intend to engage 2. Try to engage 3. Would like to take 4. Likely to take	Huang & Lee (2012) Ajzen (2006)
Attitude	5	Believe in taking academic programmes... 1. Bad – Good 2. Foolish – Wise 3. Worthless – Worthwhile 4. Irrelevant – Relevant 5. Dull – Interesting	Siragusa & Dixon (2009) Ajzen (2006)

Variables	Number of Questions	Dimension	Supporting Studies
Subjective Norms	5	<ol style="list-style-type: none"> 1. People important to me think 2. Expected of me 3. People's opinion I value 4. Many people like me to engage 5. Want to do what most people do 	<p>Huang & Lee (2012)</p> <p>Ajzen (2006)</p>
Perceived Behavioural Control	6	<ol style="list-style-type: none"> 1. Personal control do you feel 2. If I wanted to 3. It would be mostly up to me 4. Improve my knowledge 5. Give me extra knowledge 6. Help me feel better and improve my knowledge 	<p>Randall (1994)</p> <p>Ajzen (2006)</p>
Technological Capability Perception	5	<ol style="list-style-type: none"> 1. DRB-HICOM U financial investment in R&D and development 2. High profile technological background in DRB-HICOM U team 3. DRB-HICOM U own product or process patents 4. DRB-HICOM U team encourages ideas and implementation 5. Internal research and development emphasized in DRB-HICOM U 	<p>Zou et al. (2010)</p> <p>Ajzen (2006)</p>
Actual Behaviour	4	<ol style="list-style-type: none"> 1. Try to use in daily life 2. Effort to attend on regular basis 3. Enjoyed the involvement 4. Caused lot of pleasure and fun 	<p>Huang & Lee (2012)</p> <p>Ajzen (2006)</p>

3.8.2.2 Structure of Questionnaire

There was no argument on the length of the questionnaire given to the respondents. However, as explained by Krosnick (1999), a simple questionnaire can draw higher response rates compared to a long questionnaire. Based on the literature review, the instruments were developed with the aim of addressing the research objectives of this study. The questionnaire is divided into two sections. The first section is on the demographic profile of the respondents. The second section covers intention, attitude, subjective norms, perceived behavioural control, technological capability perception and actual behaviour. The questionnaire was approved by the Board of Ethics of DRB-HICOM U and the approval is presented in **Appendix A**. The completed questionnaire used for the data collection in this study is presented in **Appendix B**.

3.8.2.3 Measurement Scale

In this study, a seven-point Likert and adjectives scales were used for the questions on intention, subjective norms, perceived behavioural control, technological capability perception and actual behaviour. In measuring intention, the respondents were requested to choose a response on the seven-point Likert scale as follows: *'1=extremely unlikely, 2=unlikely, 3=somewhat unlikely, 4=neither unlikely nor likely, 5=somewhat likely, 6=likely, 7=extremely likely'*. In measuring subjective norms, perceived behavioural control and actual behaviour, the seven-point Likert scale was used as follows: *'1=strongly disagree, 2=disagree, 3=somewhat disagree, 4=neither disagree nor agree, 5=somewhat agree, 6=agree, 7=extremely agree'*. Meanwhile, in measuring attitude, the adjectives scale was presented in adjectives

pairs as follows: *bad – good, foolish – wise, worthless – worthwhile, irrelevant – relevant, dull – interesting.*

3.8.3 Pretesting and Pilot Test Study

Pretesting tests the validity of the instruments and pilot test is conducted to assess the reliability of the instrument. Sekaran and Bougie (2010) described that reliability is a test of how the measurement instruments can measure the item consistently. A pilot test was conducted on 35 DRB-HICOM U students from semester three and above randomly selected from DST, DVA and DVI programmes (see Table 3.3). Robbins (1999) suggested that the acceptable sample size for a pilot test is from 25 to 75. In addition, Hill (1998) recommended that 10 to 30 respondents are sufficient. With the assistance of the lecturers, the 35 questionnaires were collected. The importance and objective of the questionnaire were explained by the lecturers using a standard transcript provided by the researcher as per **Appendix C**. The students completed their answers within 20 to 25 minutes after the class. The questionnaire was distributed and collected in order to obtain feedback or suggestions for improvement. It was found that the students were able to understand the items in the questionnaire and no feedback was received from the students. As suggested by Hair et al. (2014), the evaluation of the validity by Cronbach's alpha must be not less than 0.7 and reliability evaluation must be at least 0.4 to be considered relatively strong (Briggs & Cheek, 1986). The evaluation of Cronbach's Alpha for the pilot test was 0.905 and the reliability evaluation met the 0.4 level for all variables. The result of pilot test is presented in the **Appendix D**.

3.8.3.1 Pre-test: Content Validity

The validity was convinced for a research where in research design; it was used to define the ability of instrument of the questionnaire. It was also facilitated to determine the right method used to assess the ideas in the questions. The the questionnaire was submitted to the Board of Ethics, DRB-HICOM U for quality enhancement of the content in terms of ability to read clearly, validity and brevity.

3.8.4 Ethics in Data Collection

In collecting the data, ethics in research was addressed. Cooper and Schindler (2007) described that if the respondents decide to participate, they should be willing to share information in the survey. Respondents should not be forced to join the survey (Sekaran, 2003). They should be able to assess the objective of the study when they answer the questions. In order to keep the confidentiality of the respondents, their names were not revealed and remained anonymous. The information obtained from the respondents were treated as strictly confidential, only to be used for educational and professional purposes only.

3.8.5 Data Collection Sampling and Procedure

The population in this study comprised selected students in DRB-HICOM U who are currently studying on a full-time basis. The students come from all states in Malaysia with ages ranging from 18 to 30 years.

3.8.5.1 Sampling Methodology

There are two types of sampling methods, namely: probability and non-probability sampling. In this study, probability sampling was selected to assist the data gathering. Stratified random sampling was selected and according to Kumar (2014), by using a stratified random sampling, the population selected is homogeneous with respect to the characteristics being stratified. Gay and Diehl (1992) said that proportionate stratified random sampling comprises five steps as follows:

i. Define the population

The population of this study is the DRB-HICOM U students registered under the top three programmes from the Faculty of Engineering & Technology: Diploma in Automotive Management Systems (“DMS”), Diploma in Automotive Service Technology (“DST”) and Diploma in Automotive Vehicle Assembly Management (“DVA”).

ii. Determine the desired sample size

With reference to the Krejcie and Morgan Table (1970), the population size is N , for example, if the population is 340, then the sample size selected will be 181. This was based on the table of values that allow the determination of the size of sample needed to represent a given population.

iii. Identify the variable and desired subgroup (strata)

The variable of importance for this study is based on the programme offered by the Faculty of Engineering & Technology, DRB-HICOM U. The programme selected and activities of the programme are as in Table 3.6:

Table 3.6

Programmes under School of Engineering & Technology

No.	Programmes	Activity
School of Engineering & Technology		
1.	Diploma in Automotive Service Technology (“DST”)	Students will be equipped with the knowledge and skills of servicing vehicles, automotive parts function (i.e., engine, transmission, etc.), service workshop management.
2.	Diploma in Automotive Management Systems (“DMS”)	Students will be equipped with knowledge of various automotive management systems, such as 5S, HMS, ISO TS 16949, including best practices and benchmarking for career in automotive management services, repair and manufacturing.
3.	Diploma in Automotive Vehicle Assembly Management (“DVA”)	Students will be equipped with necessary skills and knowledge that will contribute towards efficient operation of the production and assembly line of motor vehicles.

Source: Faculty of Engineering & Technology (2015)

iv. Classify the population elements into subgroups

The students were selected from semester three and above because of their exposure to the use of technology. As at February 2016, the programme offered and total student population are as in Table 3.7:

Table 3.7

Sample Selection for Quantitative Study

No.	Programmes	Student Population	Semester 3 and above students	Percentage (%)	Sample Selected
School of Engineering & Technology					
1.	Diploma in Automotive Service Technology (“DST”)	277	121	36	65
2.	Diploma in Automotive Management Systems (“DMS”)	347	176	52	94
3.	Diploma in	61	41	12	22

No.	Programmes	Student Population	Semester 3 and above students	Percentage (%)	Sample Selected
	Automotive Vehicle Assembly Management (“DVA”)				
	Total	600	338	100	181

Source: Faculty of Engineering & Technology (2016)

v. Random Sample Selection

A total of 181 students is required using a simple random selection technique from the three programmes based on the Krejcie and Morgan Table (1970). The classes were selected from the three programmes and the students were approached after they had finished their classes.

3.8.6 Data Collection Procedures

The data collection for this study used both quantitative and qualitative research approaches. A questionnaire survey was distributed to the students. For greater efficiency, assistance from academic staff was asked to collect the questionnaire survey. The full-time students were selected from third semester and above from March, June, September intakes of the three programmes. The third semester and above students were selected due to their exposure to the core subjects of the programmes. The survey was distributed at the end of class session where the participants were given a briefing on the objective of conducting the survey. The lecturer/instructor at the particular class assisted in the collection of the questionnaire. Similar data collection procedures were conducted by Huang & Lee (2012).

3.8.6.1 Data Collection Method

The data was collected through the survey questionnaire distributed to the students after their class with assistance from the lecturers. The students were identified through the classroom table obtained from the Academic Executive from the Faculty of Engineering and Technology. The summary of the timetable is presented in **Appendix E**. Prior to that, an approval letter was obtained from the Board of Ethics of DRB-HICOM U in order to collect the data. A total of 484 students were approached and questionnaires distributed through their lecturers.

3.8.6.2 Data Collection Procedure

In this study, the data collection activities were taken in order to increase the willingness and the response from the students upon completion of their lessons. A standard script was given to the lecturers and instructors to explain the objectives of the study. The standard script is as presented in the **Appendix C**. After the class, the survey was collected by the researcher from the respective lecturers and instructors.

3.8.6.3 Data Collection Time Period

The data collection duration took approximately one month. However, only 59% of the questionnaires were collected. The lecturers said that they did not have time to

distribute the questionnaire because of the priority to complete the course as students wanted to move to the next class on time.

3.8.7 Analytical Methodology

In recent years, structural equation modelling (SEM) has been considered as one of the suitable and advanced statistical analysis techniques used in social sciences (Hair & Sarstedt, 2014). As described in the earlier chapter, the SEM method is suitable for this study which requires indirectly estimating unseen latent variables (Chin & Todd, 1995). SEM has a precondition for the estimation on the measurement model. Both the reliability and validity model can be verified via the relations among reflective variables and constructs. This model is presented as a block by Kmenta and Ramsey (1980), where it consists of established indicators for a single latent construct (Falk & Miller, 1992). Apart from that, a few single latent constructs with their indicators encompass the measurement model, known also as outer model (Fornell & Cha, 1994). In addition, the relationship between inner and outer models is highlighted by the endogenous and exogenous constructs by the examination of the hypothesized relationships between the constructs (Falk & Miller, 1992). There are two types of analytical techniques in SEM, namely covariance based-SEM (CB-SEM) (Joreskog & Sorbom, 1996); and partial least squares-SEM (PLS-SEM) (Wold, 1975). CB-SEM focuses on reproducing the theory part of covariance matrix and also not focusing to the explained variance. In contrast, PLS-SEM focuses on maximizing the explained variance of the endogenous latent items (Falk & Miller, 1992).

Therefore, the PLS-SEM is selected for this study and the details of the multivariate methods are explained in Table 3.8.

Table 3.8

Multivariate Methods

	Primary Exploratory	Primary Confirmatory
<i>1st generation technique</i>	Cluster analysis Exploratory factor analysis Multidimensional scaling	Analysis of variance Logistic regression Multiple regression
<i>2nd generation technique</i>	PLS-SEM	CB-SEM Confirmatory factor analysis

Source: Adapted from (Hair et al., 2014)

In multivariate analysis, PLS-SEM has the capability to analyse the data because it enables the evaluation of the structural model (connection between dependent and independent constructs) and measurement models (loadings of the items on the latent variables, i.e., constructs). Both the combined measurements and structural model help to measure errors on the variables which is part of the model as well as use factor analysis to test the hypotheses (Gefen, Straub, & Boudreau, 2000). Besides the independent and dependent latent variables being analysed, there are also moderator variables that are measured together. The variables can be either exogenous or endogenous in SEM. Exogenous variables are represented by outward arrow and no other arrow leading to it; while the endogenous variables is represented by at least one path leading to it and showing the effects of other variables (Wong, 2013). In this study, the approach adopted by the researcher is based on the PLS-SEM based on the following assumptions: (i) less demand on the sample size compared to other methods; (ii) it is able to handle both reflective and formative constructs; and (iii) is more suitable for theory development compared to

theory testing (Urbach & Ahlemann, 2010). The above three reasons strengthen the decision to use PLS-SEM as the appropriate tool for analysis. The analysis is separated into two phases: firstly, the validation of the measurement model; followed by the second phase, the validation of the structural model. The comparison of both CB-SEM and PLS-SEM is described in Table 3.9.

Table 3.9
Differences between CB-SEM and PLS-SEM

Criteria	Covariance Based SEM (CB-SEM)	Components Based SEM (PLS-SEM)
Objective Goal	Parameter-oriented The goal is theory testing, theory confirmation, or the comparison of alternative theories.	Prediction-oriented The goal is predicting key target constructs or identifying key “driver” construct.
Approach Assumption	Covariance-based Typically multivariate normal distribution and independent observations (parametric)	Variance-based Predictor specification (nonparametric)
Parameter estimates	Consistent	Consistent as indicators and sample size increase (i.e., consistency at large)
Latent variable scores	Indeterminate	Explicitly estimated
Epistemic relationship between an LV and its measures	Typically only with reflective indicators. However, the formative mode is also supported.	Can be modelled in either formative or reflective mode.
Implications	Optimal for parameter accuracy	Optimal for predictive accuracy
Model complexity	Small to moderate complexity (e.g., less than 100 indicators)	Large complexity (e.g., constructs and 1,000 indicators)
Sample size	Ideally based on power analysis of specific model. Minimal recommendations range from 200 to 800.	Power analysis based on the portion of the model with the largest number of predictors. Minimal recommendations range from 30 to 100 cases.
Type of optimization	Globally interactive	Locally interactive
Significance tests	Available	Only by means of

Criteria	Covariance Based SEM (CB-SEM)	Components Based SEM (PLS-SEM)
Availability of global goodness of Fit (GoF) metrics	Established GoF metrics available	simulations; restricted validity Are currently being developed and discussed.

Source: Adapted from Chin & Newsted (1999) and Hair et. al., (2016)

3.8.7.1 Justification for the selection for PLS Path Modelling

PLS was selected for this study. The common reasons PLS is used for this study are as follows: the exploration goal was arranged towards expectation rather than parameter estimation and goodness-of-fit; thus PLS methodology is more suitable. PLS places insignificant requests on estimation scales, and distributional suppositions and PLS can be utilized for both intelligent and developmental theories (Chin et. al., 2003). In spite of the fact that the PLS way displaying calculation obliged that each idle variable had no less than one show pointer, second request developed in this examination was conceivable utilizing rehashed marker methodology (Wold et. al., 1983; Lohmöller, 1989). A two-stage investigation approach as recommended by Anderson & Gerbing (1988) was embraced to examine the information with two theoretically distinctive models, i.e., estimation model and basic model. In this study, structured questionnaire was adopted in order to investigate students' attitude towards behaviour, subjective norms, perceived behavioural control and technological capability perception of the intention of DRB-HICOM U towards sustaining competitive advantage. This empowered a blend of subjective and quantitative data to be assembled.

3.8.7.2 Statistical Package for Social Science (SPSS)

The collected data from the survey were properly entered and analysed by using Statistical Package for Social Science (SPSS) Version 20 for windows (Coakes and Steed, 2007) and the SmartPLS Version 3.2.4 (Ringle, Wende & Becker, 2015). As for SPSS, it was mainly used for descriptive analysis of the characteristics of the sample and the items used in this study. Central tendency and variability were also conducted through SPSS. Central tendency measures the mean, median and mode, whereas the variability encompasses measurement of standard deviation, minimum and maximum of the variables, kurtosis and skewness (Pallant, 2011). In addition, other analyses, such as missing values, non-response bias, outliers, common method variance, normality and linearity, were also conducted at an earlier stage.

3.9 The Two-Step Modelling approach

This study applied the PLS-SEM approach where it involved two approaches. The outer model (measurement model) had to be assessed first before the inner model (structural model) is assessed in the second part (Barclay, Higgins & Thompson, 1995). As for the measurement model, it was tested separately at an earlier stage in order to create validity, including a few dimensions (Hattie, 1985; Fornell & Cha, 1994; Chin, 1998). The indicators that are not related can be modified to match the overall construct of the study before the assessment of the structural model (O’Cass & Grace, 2003). The assessment of the measurement model must be completed before conducting the assessment of the structural model. The procedure of the PLS-SEM assessment procedure is illustrated in Figure 3.3.

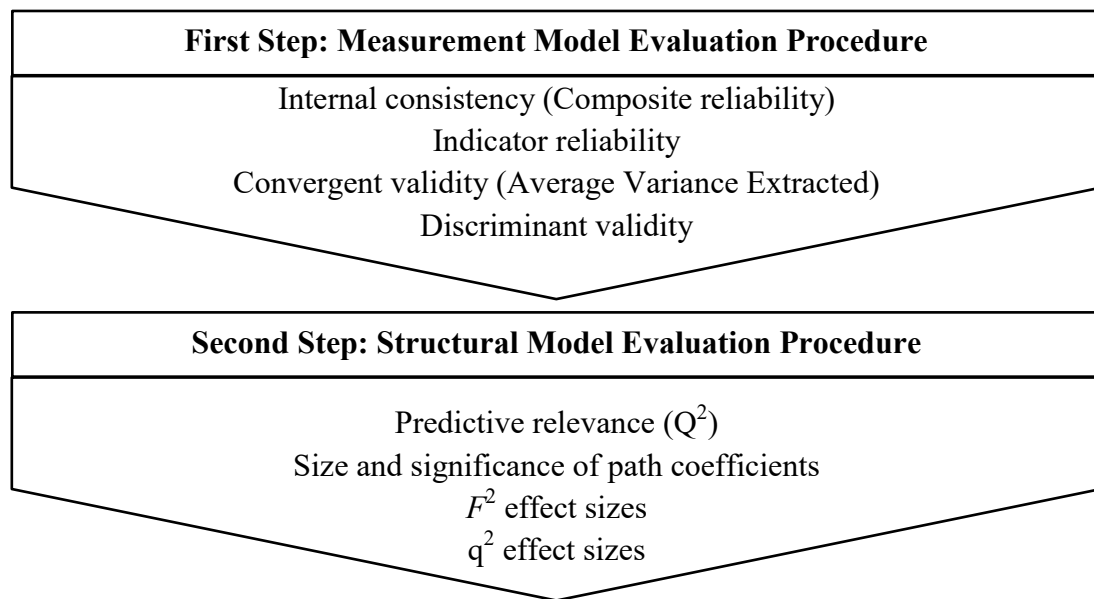


Figure 3.3
PLS-SEM Assessment Procedure
 Source: Adopted from Hair et al. (2016)

3.9.1 Measurement/Outer Model Evaluation

The application of PLS evaluation statistics is discussed to facilitate the understanding of PLS outcome presented in Chapter 4.

3.9.1.1.1 Internal Consistency – Composite Reliability

Chin (1998) described that internal consistency is only suitable for reflective constructs. The model was measured by Cronbach's Alpha (Cronbach, 1951). According to Nunally (1978) and Chin (1998), the threshold value for Cronbach's Alpha should be 0.70 and above in order to consider its measures as reliable. In a recent study, the higher the reliability identified, the lesser the error of variance (Raykov & Shrout, 2002).

3.9.1.1.2 Discriminant Validity

Campbell and Fiske (1959) mentioned that discriminant validity specifies the indicator of latent variable differences compared to other latent variables. The relationships among the constructs (off-diagonal elements) have to be lower than the reliability estimates (diagonal elements) (Gaski & Nevin, 1985; Patterson & Smith, 2003).

3.9.1.1.3 PLS Analyses – Cross-Loading

Discriminant validity can be assessed through the cross-loading values conducted in PLS analysis. In general, the explanation of cross-loading in PLS analysis is the same as the cross-loading conducted in SPSS. Chin (1998) and Agarwal and Karahanna (2000) highlighted the measures of the constructs should be higher than other constructs.

3.9.1.1.4 Average Variance Extracted (AVE)

The AVE was created by Fornell and Larcker (1981) and it is used to examine convergent validity. According to Fornell and Larcker (1981), the threshold value must be 0.50 and above to be acceptable. The value explains the number of changes made by the construct though its item is higher than the change made due to measurement error.

3.9.1.1.5 Assessing the Parameters and Significance of Loadings

Chin (1998) explained that the significance of parameter estimation can be examined through bootstrapping. It is a common method used for a resampling technique. It is suggested by Chin (1998) that 200 bootstrap samples are sufficient. In contrast, Hair et al. (2016) suggested 5,000 bootstrap samples. Table 3.10 explains the rule of thumb in order to evaluate the reflective measurement models.

Table 3.10
Rules of Thumb for Evaluating Reflective Measurement Model

Assessment	Threshold value
Indicator reliability	Loadings >0.50
Convergent validity	AVE >0.50
Internal consistency reliability	CR >0.708
Discriminant validity	All indicator's outer loadings on a construct should be higher than its cross-loadings with other constructs. The square root of the AVE of each construct should be higher than its highest correlation with any other construct.
Critical value for a two-tail test	± 1.65 ($\alpha = 0.10$), ± 1.96 ($\alpha = 0.05$), or ± 2.85 ($\alpha = 0.01$)
Critical value for a one-tail test	± 1.28 ($\alpha = 0.10$), ± 1.65 ($\alpha = 0.05$), or ± 2.33 ($\alpha = 0.01$)

Source: Adapted from Hair et al. (2016) and Fornell & Larcker (1981)

3.9.1.2 PLS Structural (Inner Model)

In order to determine how well the experiential data supports the theory, an assessment of structural model is conducted. Thus, the theory can be confirmed at the analysis stage. The analysis starts with the evaluation of the collinearity of structural model that provides estimation of path coefficients in the structural model

(Hair et al., 2014). The aim of conducting this step is to examine the importance and relevance of the relationships in the structural model. The analysis then follows by examining the coefficient of determination, namely R^2 value, which gives an indication of nomological validity (Sarker et al., 2001). The next step is effect size (f^2) to be examined based on the evaluation of all the endogenous constructs (Hair et al., 2014). Then, the predictive relevance (Q^2) is assessed to ensure the R^2 values as the criterion of predictive accuracy. The goodness-of-fit criterion for PLS-SEM is further discussed in the next chapter.

3.9.1.2.1 Coefficient of Determination (R^2)

The common method used to analyse the structural model is R^2 value. The coefficient is the model's predictive accuracy measurement that is calculated as square relations among endogenous construct's actual and predictive values (Hair et al., 2014). The R^2 values can range from 0 to 1, where the higher value describes higher levels of predictive accuracy. Cohen & Cohen (1983) described the R^2 value as follows: 0.25 (large), 0.09 (medium) and 0.01 (small); while, Chin (1998) described the R^2 value as follows: 0.70 (strong), 0.30 (moderate) and 0.20 (weak). In a recent study, Hair et al. (2016) described R^2 value as 0.75 (substantial), 0.50 (moderate) and 0.25 (weak). In this study, the recent study by Hair et al. (2017) is adopted.

3.9.1.2.2 Effect Size (f^2)

Effect size (f^2) is used to assess the change in the R^2 value when any of the exogenous constructs is removed or added into the model (Cohen, 1988). Hair et al.

(2014) further described that the removal or addition of an exogenous construct may have a great impact on the endogenous constructs. Cohen (1998) defined f^2 value of 0.35 as large, 0.15 as medium and 0.02 as small effect. In this study, the construct from the attitude, subjective norms, perceived behavioural control from the theory of planned behaviour of the model to see the conforming effect size assessed through current or original R^2 value. The change of R^2 may have substantial effect on the intention of sustaining competitive advantage of DRB-HICOM U.

3.9.1.3 Predictive Relevance (Q^2)

The predictive relevance Q^2 is used to measure the predictive ability of the model after removing the observed constructs. Geisser (1974, 1975) and Stone (1974) described that the Stone Geisser Q^2 statistic specifies the model's predictive relevance. In fact, the quality of the model also can be examined (Dijkstra, 1983). If the Q^2 value is greater than 0, it is described as adequate predictive relevance for the endogenous construct and if the value is lesser than 0, it shows the model has no predictive relevance (Apel & Wold, 1982; Fornell & Bookstein, 1982). In another study, Apel and Wold (1982) recommended that Q^2 values that range from 0.40 to 0.60 are considered acceptable and 0.70 to 0.80 are considered outstanding. Table 3.11 below illustrates the summary of PLS-SEM evaluation of the reflective measurement model.

Table 3.11
Rules of Thumb for Evaluating Structural Model

Assessment	Threshold Value
Collinearity	Tolerance (VIF) should be greater than 0.20, but lower than 5
Critical Values for a two-tail test	± 1.65 ($\alpha = 0.10$), ± 1.96 ($\alpha = 0.05$), or ± 2.85 (α

Assessment	Threshold Value
Critical values for a one-tail test	± 1.28 ($\alpha = 0.10$), ± 1.65 ($\alpha = 0.05$), or ± 2.33 ($\alpha = 0.01$)
Coefficient of determination (R^2)	0.25 - weak, 0.50 – moderate, 0.75 - substantial
Effect size (f^2)	0.02 – small, 0.15 – medium, 0.35 - large
Predictive relevance (Q^2)	0.40 to 0.60 – acceptable, 0.70 to 0.80- exceptional, 1.00 – being perfectly able to be reconstructed) Q^2 values greater than 0 shows that the exogenous constructs have predictive relevance for the endogenous construct under consideration.
Predictive relevance (q^2)	0.02 – small, 0.15 – medium, 0.35 – large
Goodness of Fit (GoF)	0.1 – small, 0.25 – medium, 0.36 – large

Source: Adapted from Hair et al. (2017), Hair et al. (2014), Hair et al. (2012), Hair et al. (2011), Henseler et al. (2009) and Tenenhaus et al. (2005)

3.10 Qualitative Research Method

3.10.1 Population and Sampling

For the qualitative research method, the population of this study is DRB-HICOM U staff. The staff were selected from the academic and administration departments, from a list obtained from the DRB-HICOM U Human Resource Department.

3.10.1.1 Unit of Analysis

The unit of analysis is the organization, i.e., DRB-HICOM U. The participants were selected based on the minimum of one year service in DRB-HICOM U. The minimum of one year service represent the staff involved in the transition from college to University status. They could represent their department to share experience and information to maximize the strength of this study.

3.10.1.2 Sample Size

As mentioned earlier, the population comprises DRB-HICOM U staff from the academic and administration departments. There is no specific guidance in identifying the appropriate sample size for a qualitative study (Lincoln & Guba, 1985; Merriam, 2009). The list of DRB-HICOM U staff from administration and academic departments was generated through the mathematical formula [= **rand** ()] using Microsoft Excel 2013 to determine the selected subjects for the sample. According to the list provided by DRB-HICOM U Human Resource Department, a total of 70 academic staff and 65 administration staff met the requirements. The participants interviewed were limited until the information on the question answered and achieved (Lincoln & Guba, 1985). Invitation was sent using meeting calendar invitation via Microsoft outlook to the selected participants.

3.10.1.3 Sampling Techniques

In this qualitative study, the samples were selected using the cluster sampling techniques. It was defined that the selected gathering sample in a groups of elements that generally has a natural understanding of elements of the population, homogeneity exist within the group and the heterogeneity exist across the groups (Sekaran & Bougie, 2010). This technique is able to provide accuracy in the result. In addition, there is less cost involved and is easy for the researcher to apply. Thus, this approach is suitable for this study where the participants were selected from the provided list by DRB-HICOM U Human Resource Department.

3.10.2 Operationalization and Instrumentation

According to Ajzen (2002), different items can be used for different behaviours and for different research populations. Based on this study, the item used by Krzeski (2011) and Ajzen (2006) is used because the study is conducted on staff in higher education. As for the qualitative measurement of study items for staff, the study consisted of focus groups and the measurement items and guided themes used are presented in Table 3.12.

Table 3.12
Measurement of Study Items for Staff

Theme/Variables	Items	Supporting Studies	Operational Definition
Attitude	5	Krzeski (2011) Ajzen (2006)	<ol style="list-style-type: none"> 1. I would like to start with introductions, so we're going to go around the table and if you can say your name and tell us about your feelings of DRB-HICOM U's achievement of University status? 2. Do you feel to work with others after the achievement of University status? pleasant/neutral/unpleasant? 3. How do you feel University status is helpful/neutral/unhelpful in completing your daily tasks? 4. Can you share some of the positive/good things working in DRB-HICOM U? 5. Can you share some of the negative things working in DRB-HICOM U?
Intention	3	Krzeski (2011) Ajzen (2006)	<ol style="list-style-type: none"> 1. Do you intend to continue working in DRB-HICOM U having the technological capability as its competitive advantage? 2. In your daily work, do you intend to embed technological capability to assist you in your task? 3. Do you perceive technological capability is important to DRB-HICOM U to sustain its competitive advantage?

Theme/Variables	Items	Supporting Studies	Operational Definition
Subjective Norms	2	Krzeski (2011) Ajzen (2006)	<ol style="list-style-type: none"> 1. Why do you think that people who are important to you say that you should work in DRB-HICOM U? 2. Do most people who are important to you believe that working in DRB-HICOM U is important?
Perceived Behavioural Control	2	Krzeski (2011) Ajzen (2006)	<ol style="list-style-type: none"> 1. Do you think it is extremely easy/difficult to work in DRB-HICOM U? 2. Do you have anything that influences you to work in DRB-HICOM U?
Technological Capability	2	Krzeski (2011) Ajzen (2006)	<ol style="list-style-type: none"> 1. Do you use technology in completing your daily tasks? 2. Do you think that technological capability has effect on DRB-HICOM U to sustain its competitive advantage?
Scenario	3	Krzeski (2011) Ajzen (2006)	<ol style="list-style-type: none"> 1. Looking at the current situation, do you think DRB-HICOM U needs to have programmes that encourage the usage of technology for staff? Can you give me an example? 2. Do you think that if DRB-HICOM U wants to sustain its competitive advantage, the staff need to have knowledge in terms of technology? 3. Ok, now that we're done, I want to open it up for any other ideas and comments. This can be something you just thought of or anything that has been on your mind throughout the focus group.

The measurement used for the staff was based on Ajzen (2006) and the interview questions were adapted from previous study by Krzeski (2011). This schedule was used to serve as a guideline for the researcher for preparing the questionnaire until data entry and analysis. The chart describes the tasks from preparing the questionnaire, questionnaire review, questionnaire pilot test, questionnaire feedback

from pilot test, distribution of questionnaire, questionnaire collection and finally data entry and analysis.

3.10.3 Data Collection Method

Creswell (2007) affirmed that while there are many types of information, all information falls into four fundamental classifications: “observations, interviews, documents and audio visual materials”. In conducting the interview, there are specific interview protocols to be followed. According to Jacob and Furgerson (2012), writing a successful interview protocols starts with picking a point that is intriguing to you; research ought to have the capacity to manage inquiries by utilizing a script for the starting and end of meeting; open ended inquiries ought to be utilized; begin with simple question; start with simple to answer inquiries and move towards ones that are more troublesome or provocative; the expression "let me know about... ."is an extraordinary approach to begin an inquiry; compose huge, extensive inquiries; utilization prompts; be willing to make "on the spot" amendments to your interview meeting; don't make talk with too long; rehearse with an acquaintance as well as making indeed that you have set up a second shorter meeting to help you illuminate or pose any questions you missed after you have interpreted the meeting. According to Patton (2002), the first data collection collected through interview is the direct statements from people on their feelings, opinion and knowledge. Next, it is through observations, where the description of individual behaviour, activities and actions are recorded. Furthermore, Creswell (2007) said the audio visual materials can be used as source of qualitative study, for example audio recordings, computer

software, art objects or photographs. Thus, this study was facilitated by audio recording and documents description of feelings presented on paper.

At the same time, qualitative data supported in form of literature also provide better understanding of the research area. The approval was obtained from the Board of Ethics DRB-HICOM U, Associate Professor Dr. Richard Jan Pech to conduct quantitative study on students and qualitative study on the staff. Upon discussion with the management of DRB-HICOM U and Board of Ethics, the management requested to add another variable on change of management due to transition from college to University status for the qualitative study. The revised measurement of study items for DRB-HICOM U staff is presented in Table 3.13.

Table 3.13
Revised Measurement of Study Items for Staff

Theme/Variables	Items	Supporting Studies	Items Variables
Attitude	6	Krzeski (2011) Ajzen (2006)	<ol style="list-style-type: none"> 1. I would like to start with introductions, so we're going to go around the table and if you can say your name and tell us about your feelings of DRB-HICOM U's achievement of University status? 2. How do you feel to work with others after the achievement of University status? pleasant/neutral/unpleasant? 3. Do you feel University status is helpful/neutral/unhelpful to in completing your daily tasks? 4. Can you share some of the positive/good things working in DRB-HICOM U? 5. Can you share some of the negative things working in DRB-HICOM U?
Intention	3	Krzeski (2011)	<ol style="list-style-type: none"> 1. Do you intend to continue working in DRB-HICOM U having the

Theme/Variables	Items	Supporting Studies	Items Variables
		Ajzen (2006)	<p>technological capability as its competitive advantage?</p> <ol style="list-style-type: none"> In your daily work, do you intend to embed technological capability to assist you in your task? Do you perceive technological capability is important to DRB-HICOM U to sustain its competitive advantage?
Subjective Norms	2	Krzeski (2011) Ajzen (2006)	<ol style="list-style-type: none"> Why do you think that people who are important to you say that you should work in DRB-HICOM U? Do most of people who are important to you believe that working in DRB-HICOM U is important?
Perceived Behavioural Control	2	Krzeski (2011) Ajzen (2006)	<ol style="list-style-type: none"> Do you think it is extremely easy/difficult to work in DRB-HICOM U? Do you have anything that influences you to work in DRB-HICOM U?
Technological capability	2	Krzeski (2011) Ajzen (2006)	<ol style="list-style-type: none"> Do you use technology in completing your daily tasks? Do you think that technological capability has effect on DRB-HICOM U to sustain its competitive advantage?
Change of management	3	Krzeski (2011) Ajzen (2006)	<ol style="list-style-type: none"> What is your greatest concern or fear about the change process? How do you manage your concern or fear? How can this change process be improved?
Scenario	3	Krzeski (2011) Ajzen (2006)	<ol style="list-style-type: none"> Looking at the current situation, do you think DRB-HICOM U needs to have programmes that encourage the usage of technology for staff? Can you give me an example? Do you think that if DRB-HICOM U is to sustain its competitive advantage, the staff need to have knowledge in terms of technology? OK, now that we're done, I want to open it up for any other ideas and comments. This can be something

Theme/Variables	Items	Supporting Studies	Items Variables
			you just thought of or anything that has been on you mind throughout the focus group.

The participants were selected from amongst the academic and administration staff who fulfilled the following requirements:

- Aged 20 above
- Minimum of one year of working experience
- Permanent staff

The focus group session took between one to two hours and was conducted by an arbitrator who led with an impartial position. The sessions were directed under a basic talk guide, created with topics distinguished as important from the audit of the applying so as to write and the presumptions of TPB in Table 3.14. The discourse guide were excluded topics specifically tending to the impression of seen control, as it was viewed as this may drive the discourse towards unreasonable utilization conduct, and members may feel hesitant to take an interest.

Table 3.14
Discussion Guided Themes

No.	Theme	Items Variables
1.	Attitude	Feelings working in DRB-HICOM U. Good things working in DRB-HICOM U. Bad things working in DRB-HICOM U.
2.	Subjective Norms	People that influence you to work in DRB-HICOM U. Importance of working in DRB-HICOM U.
3.	Perceived Behavioural Control	Anything that influence you work in DRB-HICOM U. Level of easy/difficulty to work in DRB-HICOM U.
4.	Intention	Intent to work with DRB-HICOM U having technological capability to sustain its competitive advantage.

No.	Theme	Items Variables
5.	Technological Capability	Technological capability has effect on DRB-HICOM U to sustain its competitive advantage.
6.	Scenario	Technological capability training for staff.
7.	Change of Management	Change of management from College to University.

3.10.3.1 Focus Group Interview Session

Since DRB-HICOM U is a Private HEI, in-depth feedback by the staff would benefit the organization. Folch-Lyon & Trost (1981) said that focus group interview session is extensively used in the private sector where it provides significant understanding on the psychological and behavioural aspects of customers' behaviour. Focus group interview is an interview session conducted with a several individuals at the same time to respond to questions given by the researcher. The focus group was selected by the researcher because it can provide in-depth findings and verification on data obtained. Merton & Kendall (1946) described the four usages of the focus group interview. This study applied the four stage session as follows: i) ensuring the factors involved in the study are explored; ii) it is able to provide information on unexpected effects; iii) it provides verification in interpreting the data collected; and iv) it is able to analyse findings that cannot be achieved through quantitative method. The interview session can also be facilitated using structured, unstructured or semi-structured interview protocol (Sekaran & Bougie, 2010).

3.10.3.2 Interview Protocol

The researcher has the freedom to choose the type of interview as long as it meets the objectives of the study. The three types of interviews commonly used in social science studies are illustrated in Table 3.15.

Table 3.15
Interview Structure

Highly Structured/Standardized	Wording of questions is predetermined Order of questions is predetermined Interview is oral form of a written survey In qualitative studies, usually used to obtain demographic data (age, gender, ethnicity, etc.)
Semi-structured	Interview guide includes a mix of more and less structured interview questions All questions used flexibly Usually specific data required from all respondents Largest part of interview guided by list of questions or issues to be explored No predetermined wording or order
Unstructured/Informal	Open-ended questions Flexible, exploratory More like a conversation Used when researcher does not know enough about phenomenon to ask relevant questions Goal is learning from this interview to formulate questions for late interviews Used primarily in ethnography, participant observation and case study.

Source: Adapted from Merriam (2009)

Given the above points on the types of interview, the semi-structured interview was selected for this study. The interview protocol was prepared to ensure the discussion was guided throughout the session. The interview protocol is presented in **Appendix F**. The interviews and focus group were conducted during office hours between 9:00 am to 12:00 pm (Monday to Friday). The proposed time was considered the most

productive time to conduct interviews and focus group. Since it implied significant standard to obtain the ideas, opinion and knowledge of the respondents, the semi-structured formats may gave different response to the study. In order to gain confidence level of the participants, a research consent form was given to the participants prior the interview session. The consent form is attached in **Appendix G**. Besides that, a newspaper article (**Appendix H**) on the achievement of DRB-HICOM U towards University status was shared with the participants in order to obtain staff feelings towards the achievement.

3.10.4 Data Analysis

Since the semi-structured interview was used in this study, the result of the interview session was in written form and then transcribed into a document for analysis purposes. Based on Creswell (2014), the flow of data analysis is presented in Figure 3.4. It describes the first step starts with collecting raw data, secondly, organizing and preparing data for analysis, thirdly, reading through the data, followed by the themes and description for the study, next, interpreting the meaning of themes/description and finally, interrelating themes/description of the study. In this respect, the validation of the accuracy of the information was done during these processes.

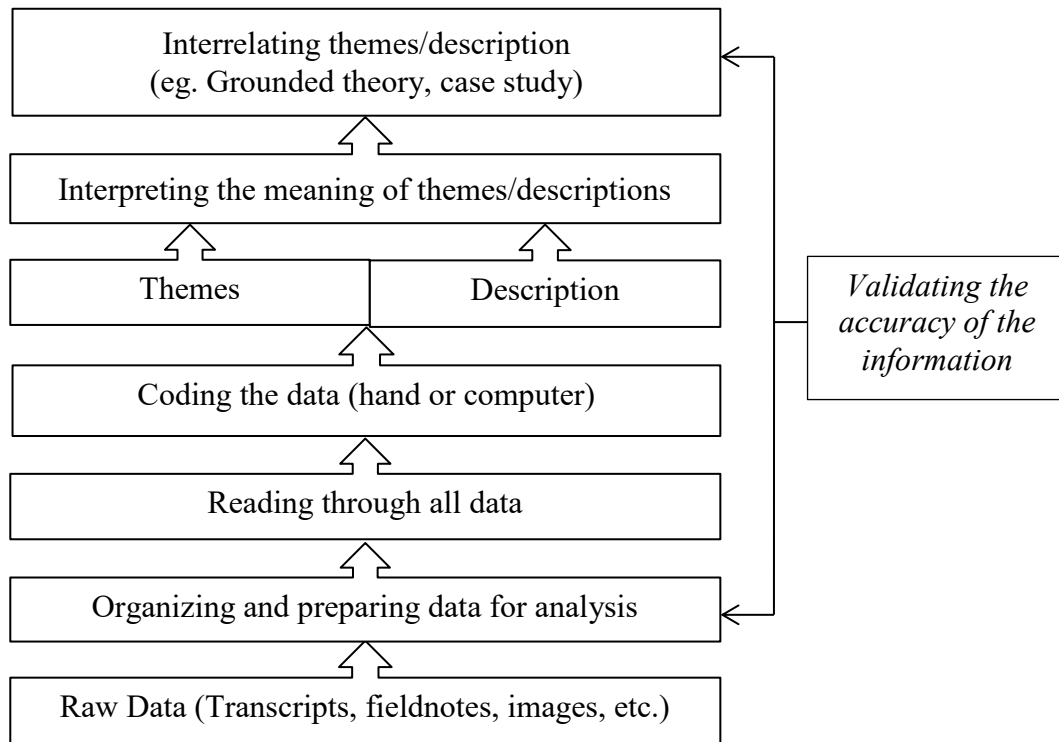


Figure 3.4
Data Analysis in Qualitative Research
 Source: Adapted from Creswell (2014)

3.11 Chapter Summary

The mixed method research design is selected for this study. The triangulation design is adopted in order to measure similar situation towards merging and increased the validity. A survey questionnaire is also used for data collection for DRB-HICOM U students, in contrast to the focus group interview conducted for DRB-HICOM U staff. The unit of analysis is the DRB-HICOM U. In the initial stage, a pilot study was conducted prior to the final questionnaire being distributed to the students. The data was collected within a month for both methods. The quantitative method was analysed using SPSS Version 20 and SmartPLS Version 3.2.4, while for the qualitative data was analysed using ATLAS.ti.

CHAPTER FOUR

RESULT AND DISCUSSION

4.1 Introduction

This chapter describes the data analysis and discusses the findings of this research. The collected data were analysed to explain, classify and find the relationship between staff and students' perception on technological capability perception towards sustaining competitive advantage and change of management in DRB-HICOM U. The quantitative method was used for student's data collection while the qualitative method was used for staff data collection. In Phase I, a detailed quantitative data collection of students is described followed by Phase II on the qualitative data collection of the staff. As for the quantitative data, it was done sequentially, starting with the respondent's profile according to their demographic information, the goodness of measures where the measurement model was validated and then the validation of the structural model tested through hypotheses in order to confirm the outcome of this research. The qualitative data includes the background of the participants and coding of the feedback by the participants. At the end of this chapter, a brief summary of the triangulation of data analysis and results are given.

Phase I: Quantitative Data Analysis

4.2 Data Analysis and Overview of the Results

Based on the above, the quantitative data analysis is categorized into two parts. The first part focuses on demographic profiles of the respondents as well as information about their programmes. The details of the sampling procedure are thoroughly discussed. Then, in the second phase, the PLS-SEM is used to test the hypotheses proposed in Chapter 3.

4.3 Data Screening

To ensure the reliability and dependability of the data collected from the survey, data screening procedure was conducted. It is an initial test conducted as part of the analysis method in SPSS. It has to be conducted prior to the evaluation of measurement and structural model in PLS. The common problems faced by researchers are outliers, missing values as well as some extreme cases. Thus, a proper data screening was conducted for this study. Of the 338 questionnaires distributed, only 287 questionnaires were received and carefully sorted out. The questionnaire was answered by DRB-HICOM U students from the three selected programmes, namely DST, DMS and DVA. Out of the 287, only 273 questionnaires were used for this study based on the criteria discussed in the previous chapter. A total of 14 questionnaires were deemed unusable because the respondents did not answer either two or more questions.

4.4 Response Rate

The data were obtained from questionnaires administered by the researcher, A total of 287 students (n=287) (based on 338 total number of full-time students from third semester and above from March, June, September intakes of the three programmes) equal to 84% responded.

4.5 Respondents' Demographic Profile

The background of the students covered gender, age, race and programme. Based on Table 4.1, 86.8% are male students and 13.2% are female students. This perhaps is because the automotive programmes are normally dominated by male students.

Table 4.1
Gender Statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	237	86.8	86.8	86.8
	Female	36	13.2	13.2	100.0
	Total	273	100.0	100.0	

Most students' age ranges from 18-24 years (98.9%). The majority of the students entered DRB-HICOM U through the SPM entry requirements. A small percentage of 1.1% represents students aged from 25-34 years. These students were categorized as adult learners enrolled in DRB-HICOM U programmes in order to enhance their knowledge and possess an academic qualification. Table 4.2 represents the students' age statistics.

Table 4.2
Age Statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24	270	98.9	98.9	98.9
	25-34	3	1.1	1.1	100.0
	Total	273	100.0	100.0	

In terms of race, Malay students make up 94.1%, Chinese, 3.7%, Indians, 1.8% and others, 0.4%. Table 4.3 shows student statistics by racial breakdown in DRB-HICOM U.

Table 4.3
Race Statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malay	257	94.1	94.1	94.1
	Chinese	10	3.7	3.7	97.8
	Indian	5	1.8	1.8	99.6
	Others	1	.4	.4	100.0
	Total	273	100.0	100.0	

Most of the students are from DMS at 48.4%, followed by DST at 39.9% and DVA at 11.7%. DMS was considered as the most popular programme among the other programmes offered in DRB-HICOM U as there is a demand for these graduates from the DRB-HICOM subsidiaries. The DST programme is also considered high in demand due to the expansion of the automotive business, particularly in after-sales services. The DVA programme is at third place due to the low number of students enrolled into this programme. Table 4.4 shows the programmes taken by the students.

Table 4.4
Programme Statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	DMS	132	48.4	48.4	88.3
	DST	109	39.9	39.9	39.9
	DVA	32	11.7	11.7	100.0
	Total	273	100.0	100.0	

4.5.1 Data Normality

Data normality was tested based on the data collected at the end of July 2016. The descriptive statistics results presented in **Appendix I** and normality test results presented in **Appendix J** demonstrate that the data from a few variables are not normally distributed. It is found that ITTN, ATT, TCP and ACTB are not normally distributed and SN and PBC are normally distributed. Normality means the data distribution is normally distributed with the mean of 0 and standard deviation of 1 as well as a symmetric bell-shaped curve. According to the central limit theorem, if a larger sample is used, then the mean will follow fairly normal distribution. Fortunately, in PLS-SEM, it is less severe when employing the non-normal data because the PLS algorithm alters non-normal data in accordance with the central limit theorem (Beebe et al., 1998; Cassel et al., 1999). In addition, Byrne et al. (2009) explained that there is no problem with the data normality issue because it is part of the basic assumption needed before conducting SEM. Non-normal data can be overcome by using PLS-SEM through the bootstrapping methods that can assist in determining the significant relationships in the model for non-normal data. However, there is also the probability of using highly skewed data; it might reduce the statistical power of the analysis. The significance of model parameters depends

on the standard errors from bootstrapping that could be inflated due to the highly skewed data (Hair et al., 2014).

4.6 Measuring Instrument for Validity and Reliability

Validity means an instrument is reliable but an instrument can be reliable without being valid. It is the degree to which interpretation of certain results of assessment can be accepted. This depends on the use of the assessment underlying the measurement of a construct. Reliability is also used to measure the consistency of the same test and measurement of different responses. The reliability coefficients range from 0.00 to 1.00, where higher coefficients represent higher levels of reliability (Kimberlin & Winterstein, 2008). Approval to conduct the survey was obtained from the DRB-HICOM U Board of Ethics. Some questions had to be rephrased to ease the understanding of the students. A pilot test was conducted on several DRB-HICOM U students (semester three and above) after their classes. The students were randomly selected according to their programmes: DVA, DVI and DST. The objective of this pilot study was to ensure the students understand the importance of the questions and objectives of this study.

4.7 Goodness-of-Fit Measure

In PLS-SEM path modelling, the first step to be taken is validating the measurement model used for this study. The primary step is to ensure whether the indicators load well on the theoretically defined constructs. By examining the outer model, it will determine whether or not the items used in the survey can measure the constructs they are intended to measure. In order to decide whether each item is reliable,

loading at each construct is observed. Then, the overall model is measured through SEM.

4.8 Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis (CFA) was selected to conduct the validity of the measurement model and not exploratory factor analysis (EFA). CFA is suitable when testing the hypothesis of existing theories or concepts; while EFA is more suitable for searching patterns in the data for absence or lack of knowledge on how variables are connected (Hair et al, 2017). In testing the goodness-of-fit, validity and reliability are used. Based on the model proposed earlier, CFA is more suitable because the TPB model is used moderated by Technological Capability Perception.

4.9 Model Evaluation

Based on the model for this study, there are five latent variables with 29 indicators variables and one endogenous latent variable with four indicators.

4.9.1 Assessment of Measurement Model

The assessment of measurement model analysis was conducted using SmartPLS3.0 (Ringle et al., 2015) through PLS-SEM analysis based on guidelines for preparing the algorithm. Table 4.5 describes the guidelines for preparing the algorithm (Hair et al., 2014).

Table 4.5
Guidelines for Preparing the Algorithm

Parameter	Selection
Weighing method	Using the path weighing scheme
Initial value for all outer loadings	+1
Stop criterion	0.00001
Maximum number of iterations	300

Source: Adapted from (Hair et. al., 2014)

The measurement assessment model requires several parameters for confirmation, including outer loadings, composite reliability, convergent validity as well as discriminant validity. The indicators with outer loadings below 0.4 need to be removed from the related construct's scale (Hair et al., 2014).

Table 4.6
Outer Loadings

	ATT	SN	PBC	TCP	ACTB	ITTN
B5_ATT_1	0.831					
B5_ATT_2	-0.73					
B5_ATT_3	0.852					
B5_ATT_4	0.872					
B5_ATT_5	0.847					
B6_SN		0.768				
B7_SN		0.854				
B8_SN		0.838				
B9_SN		0.753				
B10_SN		0.638				
B12_PBC			0.731			
B13_PBC			0.78			
B15_PBC			0.704			
B16_PBC			0.712			
B17_PBC			0.762			
B18_TC				0.825		
B19_TC				0.848		
B20_TC				0.844		
B21_TC				0.809		
B22_AB					0.967	
B23_AB					0.892	
B24_AB					0.934	
B25_AB					0.969	
B1_ITTN						0.871

	ATT	SN	PBC	TCP	ACTB	ITTN
B2_ITTN						0.904
B3_ITTN						0.825
B4_ITTN						0.796

Table 4.6 shows the values for outer loadings for the indicators after PLS-SEM estimation was conducted. There are two loadings highlighted above having outer loadings < 4.0 , i.e., B11_PBC (-0.008) and B14_PBC (0.069), which were removed from the scales of the related constructs. The outer loadings before and after the deletion of B11_PBC and B14_PBC are presented in **Appendix K** and **Appendix L**.

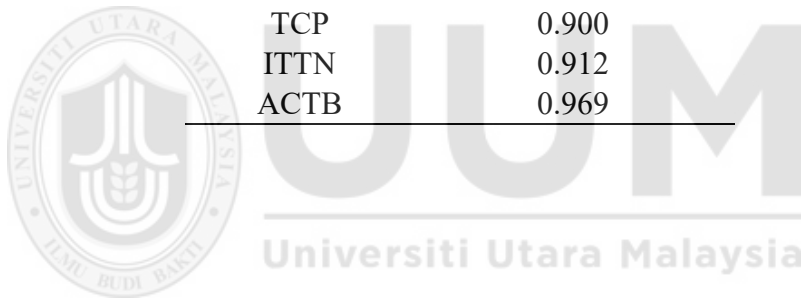
4.9.2 Internal Consistency Reliability

In assessing PLS-SEM for this study, the model was evaluated through reflective measurement model. Reflective measurement model has been found to be suitable for social sciences study based on existing theory. Apart from that, it measures characterize the effects of the original construct. Thus, the link is from the construct to its measurement. Since the reflective indicators represent all items within the original construct, each item can be substitutable and any one item can be left by not changing the meaning of the construct. Therefore, in the first stage of evaluation, the measurement model for PLS-SEM included reliability, convergent validity and discriminant validity. Traditionally, the criterion of internal consistency is Cronbach's alpha that provides the reliability based on the connections of the observed indicator variables. Cronbach's alpha can show if all indicators are correspondingly dependable whereas PLS-SEM orders the indicators according to their individual reliability. In addition, Cronbach's alpha is also suitable for the number of items in the scale and normally has the tendency to undervalue the

internal consistency reliability (Hair, 2017). Accordingly, Nunnally and Bernstein (1994) suggested that the reliability values should be between 0.70 and 0.90 to be regarded as satisfactory. If the value is above 0.90 and specifically above 0.95, it is not desirable due to the probability that majority of the variables are evaluated in a similar environment (Hair et al., 2011). In Table 4.7, all the constructs have composite reliability value threshold ranging from 0.70 to 0.90.

Table 4.7
Composite Reliability Test

Construct	Composite Reliability
ATT	0.819
SN	0.881
PBC	0.767
TCP	0.900
ITTN	0.912
ACTB	0.969



4.9.2.1 Construct Validity

In order to measure the quality criteria, Average Variance Extracted (AVE), Composite Reliability and Cronbach's Alpha, can be used. The quality criteria in measuring the model's reliability and validity are explained in Table 4.8. Construct validity was used in order to confirm the acceptable results obtained based on the measurement instruments used and the theories from which the test was formed. This was to measure the set of measured items reflecting the theoretical latent construct it was designed to measure. It was conducted through convergent and discriminant validity calculation. The composite reliability ranged from 0 to 1, where higher values indicate higher levels of reliability. Composite values of 0.6 to

0.7 are accepted for exploratory research and for advanced research, values can be from 0.7 to 0.9 (Hair et al., 2014). Table 4.8 shows all the constructs are acceptable for composite reliability assessment.

Table 4.8
Model Quality Criteria

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
ATT	0.602	0.819	0.685
SN	0.831	0.881	0.600
PBC	0.647	0.767	0.390
TCP	0.852	0.900	0.692
ITTN	0.871	0.912	0.723
ACTB	0.957	0.969	0.886

4.9.2.2 Convergent Validity

Convergent validity describes two measures that are meant to be measuring the same construct and demonstrates that they are related. As suggested by Chin and Dibbern (2010), if a study has measures that are mixed with a wide range (e.g., from 0.5 to 0.9), it would raise worries about whether the measures are genuinely a homogenous set. However, if both have higher loadings and a narrower range, i.e., 0.7 to 0.9, it shows greater confidence that the items help in approximating the original construct. This is also strengthened by Hair et al. (2011) where the rule of thumb of convergent validity is that the AVE must be greater than 0.50. Based on Table 4.8, the AVE of all indicators meet the minimum threshold of 0.5. Thus, all indicators meet the criterion mentioned.

4.9.2.3 Discriminant Validity

The uniqueness of a construct related to others in the model is indicated through discriminant validity. In order to determine the external consistency of the model, the evaluation of discriminant validity was conducted. According to Fornell and Larcker (1981), discriminant validity is confirmed if the square root of each construct is higher than the highest correlation with other constructs.

Table 4.9
Discriminant Validity of Constructs

	ACTB	ATT	ITTN	PBC	SN	TCP
ACTB	0.941					
ATT	-0.286	0.828				
ITTN	0.347	-0.419	0.850			
PBC	0.695	-0.357	0.579	0.624		
SN	0.368	-0.385	0.694	0.641	0.774	
TCP	0.744	-0.365	0.579	0.774	0.538	0.832

Table 4.9 above shows the result of the square root of AVE of individual constructs; Actual Behaviour (ACTB 0.941), Attitude (ATT 0.828), Intention (ITTN 0.850), Perceived Behavioural Control (PBC 0.624), SN (0.774) and Technological capability Perception (TCP 0.832) compared to all correlation values in the column. All the values are higher than the correlations of all constructs compared to the latent variables in the path model, thus showing all constructs are valid measure of unique ideas of the model. Another method used to assess discriminant validity is cross-loadings.

Table 4.9 shows that B5_ATT_4 has the highest value for other loading with its corresponding construct ATT (0.872) and other constructs are lower, for example,

ACTB (-0.255). The highest SN construct is B7_SN (0.854) compared to the lowest construct ACTB (-0.296). Next, is the PBC construct with the highest value of B13_PBC (0.780) against the lowest construct ATT (-0.260). The B2_ITTN construct has a value of (0.904) while the lowest construct is ACTB at (0.349). Next, for TCP, the B19_TCP has the value of (0.848) compared to ATT (-0.292) which is the lowest value. Last but not least, the B25_AB construct has the highest value (0.969) for the outer loading with its corresponding construct ACTB and the lowest value is ATT (-0.270).

Table 4.10
Cross-Loadings between Latent Variables

	ATT	SN	PBC	ITTN	TCP	ACTB
B5_ATT_1	0.831					
B5_ATT_2	-0.730					
B5_ATT_3	0.852					
B5_ATT_4	0.872					
B5_ATT_5	0.847					
B6_SN		0.768				
B7_SN		0.854				
B8_SN		0.838				
B9_SN		0.753				
B10_SN		0.638				
B11_PBC			-0.008			
B12_PBC			0.731			
B13_PBC			0.780			
B14_PBC			0.069			
B15_PBC			0.704			
B16_PBC			0.712			
B17_PBC			0.762			
B1_ITTN				0.871		
B2_ITTN				0.904		
B3_ITTN				0.825		
B4_ITTN				0.796		
B18_TCP					0.825	

	ATT	SN	PBC	ITTN	TCP	ACTB
B19_TCP					0.848	
B20_TCP					0.844	
B21_TCP					0.809	
B22_ACTB						0.967
B23_ACTB						0.892
B24_ACTB						0.934
B25_ACTB						0.969

4.9.3 Assessment of Structural Model

The second step was the assessment of the structural model that was conducted after confirming the construct measures were consistent and valid. The model's predictive capabilities and the connection between the constructs were examined as per approach described in Figure 4.1.

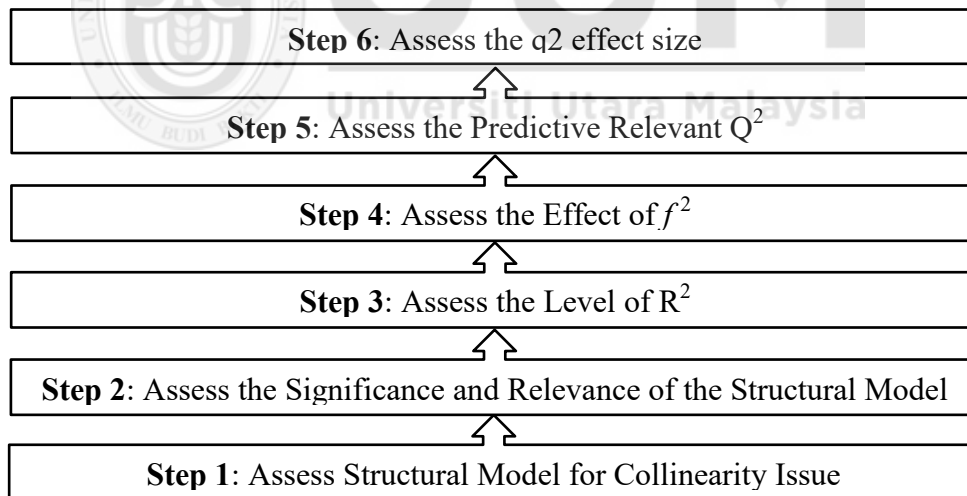


Figure 4.1
Structural Model Assessment Procedure
 Source: Adapted from Hair et al. (2017)

4.9.3.1 Collinearity Assessment

In collinearity assessment, the individual set of construct predictors are examined separately in each subpart of the structural model. The high correlation among two constructs is referred to as collinearity (Hair et al., 2014). Based on Table 4.11, the VIF shows that all constructs met the predictors below the 5.0 thresholds. Thus, it is confirmed that collinearity has reached the critical levels in the formative constructs.

Table 4.11
Collinearity Statistics (VIF)

Variable	Collinearity Statistics (VIF)
ATT	1.294
SN	1.88
PBC	3.075
ITTN	1.000
TCP	3.033

4.9.3.2 Structural Model Path Coefficients

After the collinearity evaluation, the next step was to evaluate the significance and the relevance of the structural model relationship. The evaluation was conducted to measure the hypothesized relationships among constructs of the structural model path coefficient (Hair et al., 2014). After the completion of PLS-SEM algorithm, the structural model relationship estimates were obtained. This represented the hypothesized relationships between the constructs. The standardized value of the path coefficients was roughly between -1 and +1. The strong values of path coefficients towards +1 are considered as having a positive relationship. If the path coefficient is closer to 0, it shows a weaker relationship. Table 4.12 provides the details

Table 4.12
Structural Path Coefficient

Hypotheses	Relationship	Full Model			Decision
		Standard Deviation	T-Values	P Values	
H_1	ATT -> ITTN	0.05	2.925	0.004***	Supported
H_2	SN -> ITTN	0.059	8.702	0	Not Supported
H_3	PBC -> ITTN	0.078	0.134	0.893***	Supported
H_4	ATT*TCP -> ITTN	0.062	1.554	0.121***	Supported
	SN*TCP -> ITTN	0.051	0.27	0.787***	Supported
	PBC*TCP -> ITTN	0.056	1.351	0.177***	Supported
H_5	ITTN -> ACTB	0.057	6.054	0	Not Supported

Note. *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

Next, is the significance testing results of total effects. Based on Table 4.13 below on the significance testing results of total effects, it satisfies H_1 that there is a significant relationship of student attitude and subjective norms and intention of DRB-HICOM U towards sustaining competitive advantage ($p < 0.05$) unlike Perceived Behavioural Control which has no significant relationship. The second hypothesis H_2 also shows significant effect of students' subjective norms on the intention of DRB-HICOM U towards sustaining competitive advantage ($p < 0.05$). The third H_3 presents no significant effect of students' perceived behavioural control on the intention of DRB-HICOM U towards sustaining competitive advantage ($p > 0.05$).

Table 4.13
Significance Testing Results of Total Effects

	Total Effect	t-value	P Values	95% Confidence Intervals	Significance (p < 0.05)
ATT -> ACTB	-0.045	2.672	0.008	[-0.081, -0.016]	Yes
ATT -> ITTN	-0.129	2.777	0.006	[-0.228, -0.042]	Yes
ITTN -> ACTB	0.347	5.801	0	[0.239, 0.468]	Yes
PBC -> ACTB	0.005	0.193	0.847	[-0.05, 0.061]	No
PBC -> ITTN	0.016	0.198	0.843	[-0.148, 0.161]	No
SN -> ACTB	0.174	5.325	0	[0.118, 0.24]	Yes
SN -> ITTN	0.5	8.527	0	[0.374, 0.617]	Yes
TCP -> ACTB	0.087	2.421	0.016	[0.036, 0.178]	Yes
TCP -> ITTN	0.251	3.384	0.001	[0.128, 0.407]	Yes

4.9.3.3 Coefficient of Determination (R^2 value)

For the third step in measuring the structural model, the commonly used method is the coefficient of determination or R^2 value. It helps to measure the power of predictive model and is calculated as the squared correlation between actual endogenous construct and forecast values. The values for R^2 vary from 0 to 1, where higher levels show higher levels of forecast accuracy. It is quite difficult to determine the values for R^2 ; however, in some studies in the field of consumer behaviour, R^2 values of 0.20 are considered high. Apart from that, other studies on marketing posit that R^2 values ranging from 0.75 are substantial, 0.50, moderate and 0.25, weak (Hair et al., 2011). As such, in this study, the R^2 value for the endogenous construct, ITTN, can be considered as moderate level of predictive accuracy as presented in Table 4.14.

Table 4.14
 R^2 Value

	R Square	R Square Adjusted
ACTB	0.121	0.117
ITTN	0.555	0.549

4.9.3.4 Determining the Effect Size (f^2)

In order to determine the effect size (f^2), the change in R^2 value was conducted to see whether after a particular exogenous construct is removed from the model, it can be used to assess whether the removed construct has a functional impact on the endogenous constructs. According to guidelines for examining the f^2 , if the effect size values are less than 0.02, it shows that there is no effect. Guidelines by Cohen (1988) are that the rules for measuring f^2 are as follows: 0.02 (small), 0.15 (medium) and 0.35 (large). Table 4.15 shows that ATT value is 0.03 and can be considered as small effect size compared to SN (0.316) and TCP (0.055), having large effect size. The PBC is less than 0.02 at value of 0.00 which is also considered as no effect size.

Table 4.15
 f^2 Value

	ACTB	ATT	ITTN	PBC	SN	TCP
ACTB						
ATT			0.03			
ITTN	0.137					
PBC			0.000			
SN			0.316			
TCP			0.055			

4.9.3.5 Determining the Predictive Relevance (Q^2)

The next step was to conduct the predictive relevance (Q^2) evaluation. In the structural model, it specifies that Q^2 values must be larger than zero for an exact endogenous latent variable. It describes the path model's analytical significance for an individual dependent construct (Hair, 2017). In this study, based on Table 4.16, the endogenous latent variable is only ITTN with the value of 0.394 and ACTB with

the value of 0.105. Thus, it meets the Q^2 value which is larger than zero for an exact endogenous latent variable.

Table 4.16
 Q^2 Value

	SSO	SSE	$Q^2 (=1-SSE/SSO)$
ACTB	1,092.00	976.959	0.105
ATT	1,365.00	1,365.00	
ITTN	1,092.00	661.691	0.394
PBC	1,365.00	1,365.00	
SN	1,365.00	1,365.00	
TCP	1,092.00	1,092.00	

4.9.3.6 Moderation Effects

In this study, the moderator variable is introduced in order to describe the relationship between two constructs. However, it highly depends on the values of the moderator variable and it modifies the strength of the relationship between the constructs. In this model, technological capability perception serves as the moderator to moderate the value of relationship between attitude, subjective norms and perceived behavioural control towards the intention of sustaining competitive advantage. This is to satisfy **H₄** that there is a moderating effect of technological capability perception on the relationship between attitude, subjective norms and perceived behavioural control and intention of DRB-HICOM U towards sustaining competitive advantage.

In order to support the moderator model assessment, the two-stage approach suggested by Chin et al. (2013) was adopted. This means assessing the moderation analysis when exogenous construct and moderator are measured together. In this two-stage approach, two stages of evaluation were followed:

Stage 1: Involves the main effects of model's assessment to get the values of the latent variables. All the values are required for the second stage.

Stage 2: The values computed from the latent variables of exogenous latent variables and moderator variable in stage 1 are multiplied to produce an individual measure that can be used to measure the interface term.

Figure 4.2 shows the moderator analysis results conducted using the two-stage approach. Moderating effects with effect sizes f^2 of 0.02 may be regarded as weak, effect sizes from 0.15 as moderate, and effect sizes above 0.35 as strong (Cohen, 1988). However Chin et al. (2003) described that regardless of the effect size being low, it cannot be neglected if it is under certain extreme moderating situations. The results can be taken into account. Based on this study, the interaction values for the moderator are as follows: ATT*TCP (-0.097), SN*TCP (0.014) and PBC*TCP (-0.076). Interpreting the moderator analysis result was conducted through the slope plots. The researcher used the online tools by Jeremy Dawson (<http://www.jeremydawson.co.uk>) to conduct the computation and slope plot extractions.

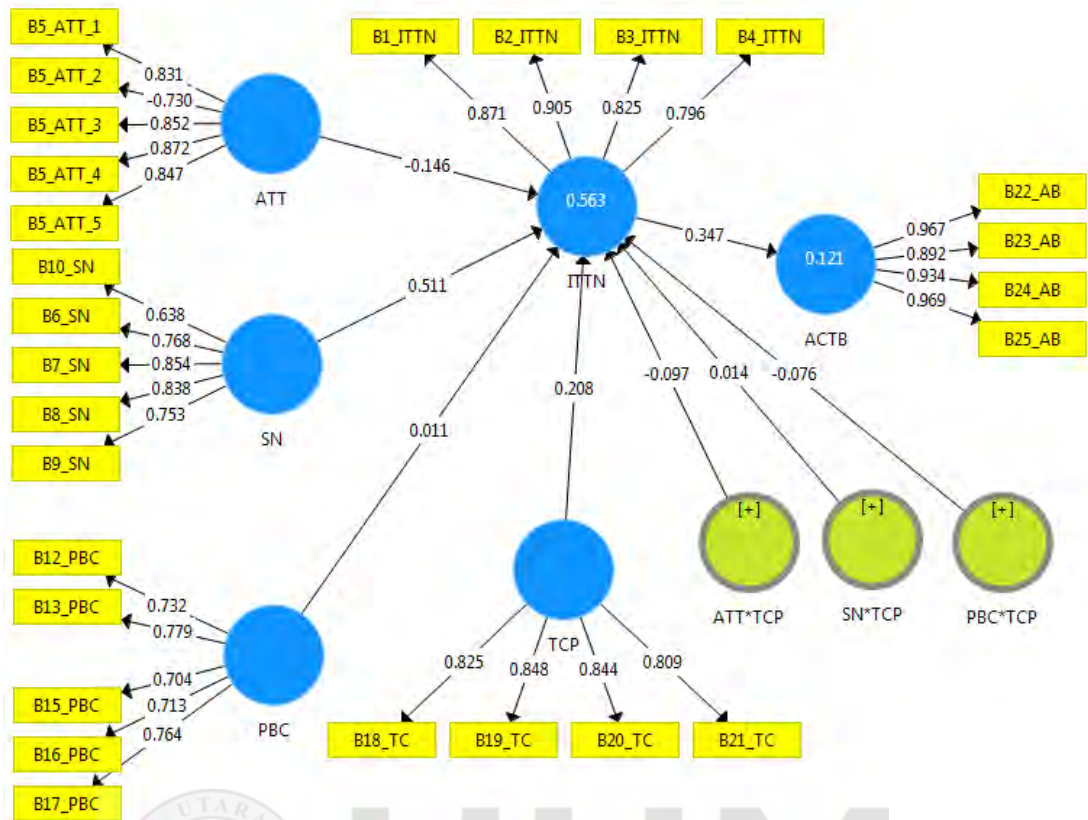


Figure 4.2
Modelling Window for Moderator Analysis Results

According to Figure 4.3, the slope of the relationship between attitude and intention to sustain competitive advantage is stronger when technological capability perception is higher, whereas low technological capability perception has no impact on the attitude-intention relationship.

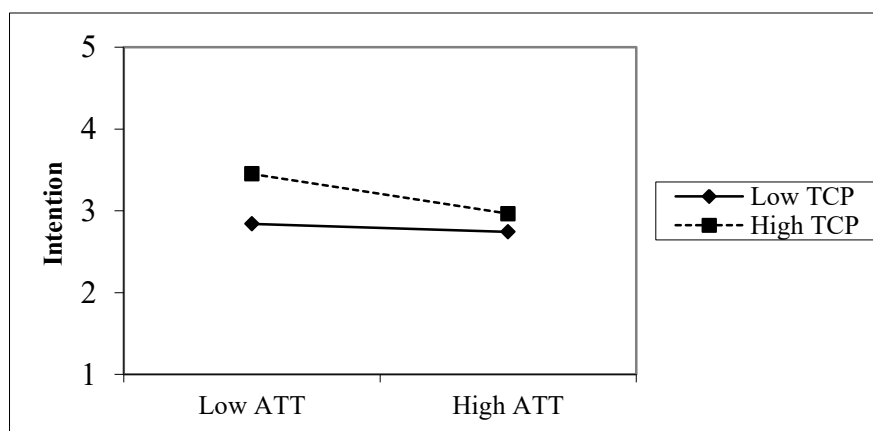


Figure 4.3
Slope Plot ATT*TCP

Next, in Figure 4.4, the relationship slope between subjective norms and intention to sustain competitive advantage is stronger when technological capability perception is higher, whereas low technological capability perception has no impact on the subjective norms-intention relationship.

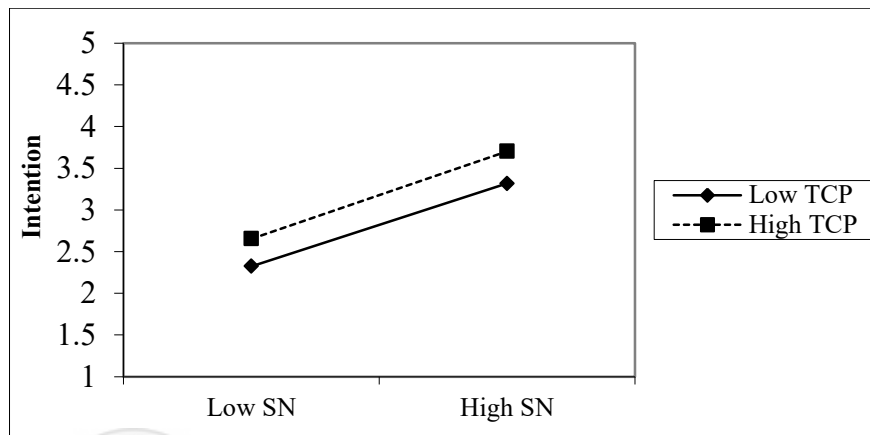


Figure 4.4
Slope Plot SN*TCP

Next in Figure 4.5, the relationship slope between perceived behavioural control and intention to sustain competitive advantage is stronger when technological capability perception is higher, whereas low technological capability perception has no impact on the perceived behavioural control-intention relationship. The three slope plot analyses show positive relationships between ATT, SN, PBC and the TCP moderator which satisfy **H₄** that there is a moderating effect of technological capability perception in the relationship between attitude, subjective norms and perceived behavioural control and intention of DRB-HICOM U towards sustaining competitive advantage.

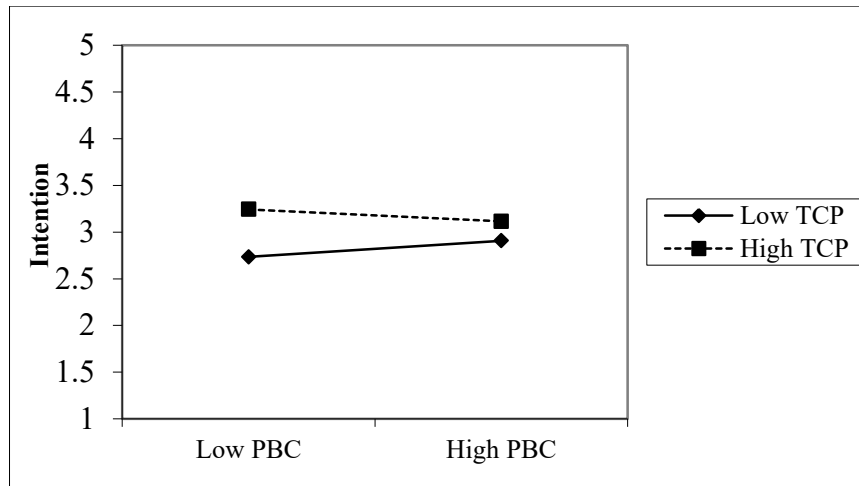


Figure 4.5
Slope Plot PBC*TCP

4.9.3.7 Mediation Effects

The mediation effects between attitude, subjective norms and perceived behavioural control and the intention to sustain competitive advantage towards actual behaviour were also measured in this study. The mediation effects were tested together with the technological capability perception moderator. The process of a variable's effect on another variable can be conducted through mediation (MacKinnon et al., 2007). It also can help the researcher to further understand the importance of certain variables in the framework. This is further strengthened by Castro and Roldán (2013) and Cepeda and Vera (2007) where firstly, they clarified how certain procedure variables enhance the impact of progress drivers and secondly on the methodological test, that was stated, the consideration of a third factor that assumed a halfway part in the relationship between two factors in a model. Based on this study, Table 4.17, shows the mediation effects where the t-value for ATT->ACTB is 2.638, PBC->ACTB is 0.204 and SN->ACTB is 5.161. This shows that ATT and SN have mediating effects on actual behaviour because the t-value is >1.645. In contrast,

PBC has a weak mediation effect. Therefore, in satisfying **H₅**, there is mediation effect on intention of DRB-HICOM U towards sustaining competitive advantage in the relationship between attitude, subjective norms and actual behaviour. However, there is weak mediation effect on perceived behavioural control and actual behaviour.

Table 4.17
Mediation Effects

Variables	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)
ATT -> ACTB	-0.045	-0.043	0.017	2.638
PBC -> ACTB	0.005	0.006	0.027	0.204
SN -> ACTB	0.174	0.174	0.034	5.161

4.9.3.8 Summary of Hypotheses Testing

The analysis of PLS-SEM was conducted in two stages, where the first one was the analysis of the measurement model, followed by structural model. Figure 4.6 below describes the hypothesized relationship between the constructs.

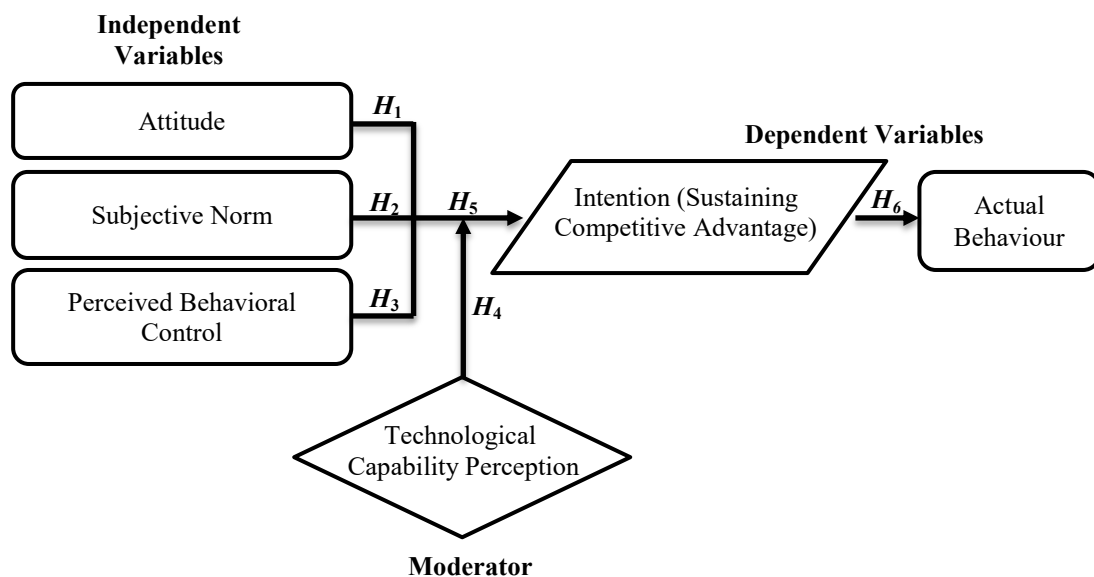


Figure 4.6
Hypothesized Relationship

Table 4.18 provides a summary of hypotheses testing for this study. Out of six hypotheses presented, only one hypothesis is not supported.

Table 4.18
Summary of Hypotheses Testing

Hypotheses	Statement of Hypotheses	Values	Remarks
H_1	There is a positive effect of DRB-HICOM U students' attitude on the intention of DRB-HICOM U towards sustaining competitive advantage.	t Values: ATT->ITTN =2.777	Supported
H_2	There is a positive effect of DRB-HICOM U students' subjective norms on the intention of DRB-HICOM U towards sustaining competitive advantage.	t Values: SN->ITTN =8.527	Supported
H_3	There is a positive effect of staff and DRB-HICOM U students' perceived behavioural control on the intention of DRB-HICOM U towards sustaining competitive advantage.	t Values: PBC->ITTN =0.198	Not Supported
H_4	There is a moderating effect of technological capability perception in the relationship between attitude, subjective norms and perceived behavioural control on intention of DRB-HICOM U towards sustaining competitive advantage.	t Values: ATT*TCP (-0.097) SN*TCP (0.014) PBC*TCP (-0.076)	Supported
H_5	There is a mediating effect of intention of DRB-HICOM U towards sustaining competitive advantage in the relationship between attitude, subjective norms, perceived behavioural control and actual behaviour.	t Values: ATT*ACTB (2.638) SN*ACTB (0.204) PBC*ACTB (5.161)	Supported
H_6	There is an influence on intention of DRB-HICOM U towards sustaining competitive advantage and the actual behaviour.	t Values: ITTN->ACTB =5.801	Supported

H₁ There is positive effect of DRB-HICOM U students' attitude on the intention of DRB-HICOM U towards sustaining competitive advantage.

There is significant effect of DRB-HICOM U students' attitude and subjective norms on the intention of DRB-HICOM U towards sustaining competitive advantage. However, perceived behavioural control had no significant effect on the intention of DRB-HICOM U towards sustaining competitive advantage.

H₂ There is a positive effect of DRB-HICOM U students' subjective norms on the intention of DRB-HICOM U towards sustaining competitive advantage.

There is a significant effect of DRB-HICOM U students' subjective norms on the intention of DRB-HICOM U towards sustaining competitive advantage.

H₃ There is a positive effect of DRB-HICOM U students' perceived behavioural control on the intention of DRB-HICOM U towards sustaining competitive advantage.

There is a significant effect of DRB-HICOM U students' attitude and subjective norms on the intention of DRB-HICOM U towards sustaining competitive advantage. However, perceived behavioural control has no significant effect on the intention of DRB-HICOM U towards sustaining competitive advantage.

H₄ There is a moderating effect of technological capability perception in the relationship between attitude, subjective norms and perceived behavioural control and intention of DRB-HICOM U towards sustaining competitive advantage.

There is a significant moderating effect of technological capability perception in the relationship between attitude, subjective norms and perceived behavioural control and intention of DRB-HICOM U towards sustaining competitive advantage.

H₅ There is a mediating effect of intention of DRB-HICOM U towards sustaining competitive advantage in the relationship between attitude, subjective norms, perceived behavioural control and actual behaviour.

There is a significant mediating effect of intention of DRB-HICOM U towards sustaining competitive advantage in the relationship between attitude, subjective norms, perceived behavioural control and actual behaviour.

H₆ There is an influence on intention of DRB-HICOM U towards sustaining competitive advantage on the actual behaviour.

There was a significant influence on intention of DRB-HICOM U to sustain competitive advantage towards the actual behaviour.

Phase II : Qualitative Data Analysis (Triangulation)

4.10 Data Analysis and Overview of the Result

The qualitative data was collected within one week based on the list provided by DRB-HICOM U Human Resource Department. As described in the earlier chapter, the staff selected were based on their service of one year and above. The invitation was sent out to 59 academic staff and 35 administration staff using calendar invites through Microsoft Outlook. The objective of the study, questions and definition of terms were provided to the participants together with the invitation. Ten sessions were conducted at the following times: 10:00 – 11:00 a.m., 11:30 a.m. – 12:30 p.m., 2:30 – 3:30 p.m. and 4:00 – 5:00 p.m. A total of 16 academic staff and eight administration staff participated in this study.

4.10.1 Participants' Demographic Profile

This section describes the findings from the interview sessions conducted by the researcher. The sessions were conducted in seven sessions participated by academic and administration staff. The findings of the interviews explained the reference to the each respondent namely DRB-HICOM U students and staff. Table 4.19 describes the unit of analysis and respondents interviewed to meet the purpose of this study. In the Table, the respondents are recognized by the identity shown in the 'Respondent' column.

Table 4.19
Participants' Demographic Characteristics

Unit of analysis	Respondent	Faculty/Department	Gender
Academic Staff (Total = 16)	Academic Staff 1	Business & Management	Female
	Academic Staff 2	Business & Management	Male
	Academic Staff 3	Engineering & Technology	Male
	Academic Staff 4	Engineering & Technology	Male
	Academic Staff 5	Interdisciplinary Studies	Female
	Academic Staff 6	Business & Management	Female
	Academic Staff 7	Engineering & Technology	Male
	Academic Staff 8	Engineering & Technology	Male
	Academic Staff 9	Interdisciplinary Studies	Female
	Academic Staff 10	Engineering & Technology	Male
	Academic Staff 11	Engineering & Technology	Male
	Academic Staff 12	Business & Management	Female
	Academic Staff 13	Business & Management	Female
	Academic Staff 14	Interdisciplinary Studies	Female
	Academic Staff 15	Interdisciplinary Studies	Female
	Academic Staff 16	Engineering & Technology	Female
Administration Staff (Total = 8)	Administration Staff 1	VC Office	Female
	Administration Staff 2	DVC Office	Female
	Administration Staff 3	Library	Female
	Administration Staff 4	Information Technology	Male
	Administration Staff 5	Facilities Management	Male
	Administration Staff 6	Student Affairs	Female
	Administration Staff 7	Human Resource	Female
	Administration Staff 8	Student Affairs	Male
Total = 24			

4.10.2 Themes and Significant Statements

As described in the earlier section, a semi-structured questionnaire was used to acquire feedback and experiences of the participants. The acquired data through the interview session via audio records was managed and organized well. The audio recording was transcribed into word form for reading. Since the session was conducted using bilingual language, the transcripts in Bahasa Malaysia were sent to a professional translator in order to avoid any misunderstanding or misinterpretation of the translation from Bahasa Malaysia to the English language. Next, the processes of describing, categorizing and interpreting were conducted. The participants' significant statements contributed to the whole experience were discussed intensively.

4.10.2.1 Themes

Seven themes were coded based on the theoretical framework and additional information required from feedback by management of DRB-HICOM U. This was the first layer coding, namely Attitude, Subjective Norms, Perceived Behavioural Control, Intention, Technological Capability Perception, Change of Management and Scenario. The second layer coding was developed based on the variances of answers provided by the participants. The attitude theme is provided in Table 4.20 and its significant statements are presented in the following sections.

Table 4.20

Findings on the Themes in Determining Intention to Sustain DRB-HICOM U's Competitive Advantage

Theme	Aspect	Number of times mentioned	Who mentioned
	<i>Feeling University Status</i>		
	Feeling - Proud	9	Academic Staff – 4, 5, 6, 13, 14 Administration Staff – 2, 4, 5
	Feeling - No Changes	6	Academic Staff – 1, 7, 7, 8, 13, 13
	Feeling - Good	11	Academic Staff – 2, 3, 8, 8, 8, 8, 9, 13, 13 Administration Staff – 1, 7
	Feeling - Changes	9	Academic Staff – 8, 7, 7, 14, 14, 14, 16, 16, 16
	Feeling - Impressed	3	Academic Staff – 9, 10, 16
	<i>Achievement of University Status</i>		
Attitude	Feeling - Neutral	21	Academic Staff – 1, 2, 4, 5, 6, 7, 9, 10, 11, 12, 12, 13, 14, 14, 16 Administration Staff – 2, 2, 3, 7, 8, 8
	Feeling - Pleasant	4	Academic Staff – 6, 13 Administration Staff – 2, 6
	<i>Completing Task</i>		
	Feeling-Helpful	9	Academic Staff – 8, 14, 16, 16 Administration Staff – 4, 5, 7, 7
	Feeling-Unhelpful	3	Academic Staff – 9, 9, 13
	Feeling-Reluctant Staff	1	Academic Staff – 12
	Feeling-Neutral	2	Academic Staff – 9, 11
	Feeling-Helpful & Neutral	1	Academic Staff – 1
	<i>Sharing Positive Things</i>		
	Positive-Academic Development	4	Academic Staff – 8, 9, 13, 13
	Positive-Company Benefits	3	Academic Staff – 8 Administration Staff – 2, 4

Theme	Aspect	Number of times mentioned	Who mentioned
	Positive-University	14	Academic Staff –7, 9, 10, 10, 10, 11, 13, 13 Administration Staff – 1, 2, 2, 2, 4, 4
	Positive-Working Environment	7	Academic Staff – 14, 15 Administration Staff – 3, 5, 7, 7, 8
	Positive-Near Family	1	Administration Staff - 8
	Positive-Better Infrastructure	2	Academic Staff – 1, 1
<i>Sharing Negative Things</i>			
	Negative-People Responsibility	7	Academic Staff – 7, 8, 8, 13, 13, 13 Administration Staff – 7
	Negative-No Career Development	3	Academic Staff – 13, 16, 16
	Negative-Lack of Company Support	3	Academic Staff – 10, 13 Administration Staff - 14
	Negative-Top Management Interferences	5	Administration Staff – 1, 2, 4, 4, 8
	Negative-Discipline Issue	1	Administration Staff - 7
	Negative-Staff Motivation	1	Administration Staff - 8
	Negative-Policy	5	Academic Staff – 5, 14, 15, 16, 16
	Negative-Benefits	2	Academic Staff – 2, 16
	Negative-Constraints	2	Academic Staff – 9, 9
	Negative-Communication	2	Academic Staff – 4, 4
<i>People important to you think</i>			
	Think-Said Yes	10	Academic Staff – 7, 9, 12, 14, 16 Administration Staff – 1, 7, 7, 8, 8
	Think-Said No	12	Academic Staff – 1, 1, 4, 5,

Theme	Aspect	Number of times mentioned	Who mentioned
Subjective Norms			6, 8, 9, 11, 13, Administration Staff – 2, 4, 5
	<i>People important to you believe</i>	10	Academic Staff – 7, 8, 13, 13, 14, 15, Administration Staff – 1, 3, 3, 6, 7, 8
<i>Working in DRB-HICOM U</i>			
	Think-Extremely Difficult	3	Academic Staff – 13 Administration Staff – 1, 1
	Think-Extremely Easy	6	Academic Staff – 3, 8, 9 Administration Staff – 1, 8, 8
	Think-Sometimes Easy and Sometimes Not Easy	14	Academic Staff – 2, 7, 7, 7, 10, 13, 14, 15 Administration Staff – 2, 3, 4, 6, 7
<i>Influence to work in DRB-HICOM U</i>			
	Influence-Working-Job Satisfaction	5	Academic Staff – 8 Administration Staff – 4, 7, 7, 7
Perceived Behavioural Control	Influence-Working-DRB-HICOM U Location	4	Academic Staff – 7, 13 Administration Staff – 2, 8
	Influence-Working-Benefits	3	Academic Staff – 1, 4, 13
	Influence-Working-Working Environment	8	Academic Staff – 1, 5, 9, 11, 14, 14, 16 Administration Staff – 1
	Influence-Working-Family & Friends	7	Administration Staff – 2, 3, 4, 5, 6, 12, 13
	Influence-Working-Unique University	5	Administration Staff – 2, 3, 3, 5, 5
	Continue Working DRB-HICOM U	18	Academic Staff – 1, 2, 3, 4, 6, 8, 9, 10, 11, 13, 13 Administration Staff – 1, 2, 5, 6, 7, 8, 8
Intention (Sustaining Competitive Advantage)	Intend to Embed Technology in Task	21	Academic Staff – 1, 1, 4, 4, 6, 8, 9, 10, 11, 12, 13, 14, 14, 16 Administration Staff – 1, 2, 3, 7, 8, 8, 8

Theme	Aspect	Number of times mentioned	Who mentioned
	Perceive Important	23	Academic Staff – 1, 4, 4, 6, 8, 9, 10, 11, 13, 13, 13, 14, 15, 16 Administration Staff – 1, 2, 3, 3, 3, 3, 3, 7, 8
Technology Capablity Perception	Use technology daily	30	Academic Staff – 2, 2, 3, 3, 7, 7, 8, 8, 9, 9, 9, 10, 10, 11, 11, 12, 12, 13, 14, 14, 16 Administration Staff – 1, 4, 5, 5, 7, 8, 8
	Technological capability effect - Yes	26	Academic Staff – 1, 4, 4, 8, 8, 9, 11, 12, 13, 14, 14, 15, 16 Administration Staff – 1, 2, 2, 3, 3, 3, 5, 5, 5, 5, 7, 7, 8
	Concern	34	Academic Staff – 8, 8, 9, 10, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 13, 13, 13, 13, 13, 13, 13, 13 Administration Staff – 1, 2, 3, 3, 7, 7, 7, 8, 8, 8, 8
	Fear	3	Academic Staff – 12, 13, 16
	Good things	11	Academic Staff – 12, 14, 15 Administration Staff – 1, 2, 6, 5, 5, 4, 4, 8
	No change	6	Academic Staff – 1, 2, 4, 5, 6, 8
	Manage - Communication	3	Academic Staff – 1, 4, 9
	Manage - Concern	11	Academic Staff – 7, 7, 8, 8 Administration Staff – 7, 7, 8, 9, 12, 12, 16
	Manage - Leadership	1	Academic - 4
Change of Management	Manage – No change	4	Academic Staff – 2, 4, 5, 6
	Manage - Planning	4	Academic Staff – 4, 9 Administration Staff – 1, 1
	Manage - Positive	8	Academic Staff – 11, 14, 15 Administration Staff – 1, 3, 4, 5, 6
	Manage - Fear	2	Administration Staff – 8, 8

Theme	Aspect	Number of times mentioned	Who mentioned
	Change – Improve Skills & Knowledge	12	Academic Staff – 7, 7, 7, 8, 8, 9, 11, 16 Administration Staff – 2, 4, 5, 6
	Change – Improve Standard Operating Procedures (SOP)	1	Academic Staff – 14
	Change – Improve Benchmark	4	Academic Staff – 15 Administration Staff – 3, 4, 7
	Programme encourage usage technology for staff	15	Academic Staff – 4, 6, 9, 9, 10, 11, 12, 12, 13, 14, 16 Administration Staff – 1, 3, 5, 8
	Staff knowledge in technology	15	Academic Staff – 1, 2, 4, 7, 8, 9, 11, 12, 13, 14, 15, 16 Administration Staff – 1, 3, 8
	Ideas - Marketing	3	Academic Staff – 8 Administration Staff – 1, 1
	Ideas – Teaching & Learning	3	Academic Staff – 12, 13, 14
Scenario/ Opinion	Ideas – Upgrade Facilities	7	Academic Staff – 10, 12, 13, 13, 13, 16 Administration Staff – 4
	Ideas – Training	1	Academic Staff – 10
	Ideas – Benchmark other university	1	Academic Staff – 15
	Ideas – Management Support	8	Academic Staff – 11, 11, 4 Administration Staff – 2, 6, 6, 7, 8
	Ideas – Relationship Gap	1	Administration Staff – 7
	Ideas – Decision Making	3	Administration Staff – 4, 6, 6

4.10.2.2 Significant Statements

An article on DRB-HICOM U achievement of University status was given to all respondents and it was found that both academic and administration staff had more or less the same answers but in different situations. Their feelings towards the achievement of University status based on the newspaper article (**Appendix H**) was categorized into proud, no changes, good, changes and impressed.

4.10.2.2.1 Attitude

Based on the interview, more than half of the academic staff (14 out of 16 participants) held a positive view in terms of feeling of the University status. Five out of eight administration staff had the same positive view towards feeling of the University status. The predominant view on the achievement of University status was neutral as more than half of academic staff (13 out of 16 participants) and administration staff (four out of eight participants) expressed this. It was also found that the University status helped some of the academics (three out of 16 participants) and administration staff (three out of eight participants). In terms of sharing positive things, more than half of academic staff (nine out of 16 participants) and administration staff (seven out of eight participants) shared their positive thoughts working in DRB-HICOM U. In contrast, in sharing the negative perception of working in DRB-HICOM U, 11 out of 16 academic staff and seven out of eight administration staff described their negative experience working in DRB-HICOM U. The significant statements and interpretative meaning for attitude is presented in Table 4.21.

Table 4.21

Significant Statements and Interpretative Meaning for Attitude

Significant Statement	Interpretative Meaning
Attitude	
<i>Feeling University Status</i>	
<u>Proud</u>	
<ul style="list-style-type: none"> ▪ To look at the article, when we look at it of course I do feel proud because I was one of the pioneers, I've seen how ICAM actually developed from nothing on the ground to a beautiful building then we move from old building to this new building...and of course I do feel proud (Academic Staff 13). ▪ I feel proud because in 5 years it is quite a short time for us to achieve from a college we leaped to be a University without going through University College in 5 years. It's a very short time and we face through ups and down, many times of rejection but alhamdulillah we managed to achieve the university status. So I'm proud la to be part of the management team. (Administration Staff 2). 	<p>Proud feeling towards great achievement of the University status.</p>
<u>No Changes</u>	
<ul style="list-style-type: none"> ▪ What I can see is yes we are changing, from we are upgrading from college to University status, but that is on implementation the operation of this organization but I cannot see much on the management change itself. Because I feel that it is the same environment. Even though currently college already became University (Academic Staff 8) ▪ Because right now not so much changes, drastic changes that can be seen in the campus. (Academic Staff 7). 	<p>No changes were seen from the upgrading from College to University Status particularly in the implementation.</p>
<u>Good</u>	
<ul style="list-style-type: none"> ▪ On the achievement of ICAM to become automotive University, I believe that is the good move, going forward, as if we become college only, we cannot prosper, and also we cannot do a lot of research regarding the automotive and also the overall, of the automotive ecosystem. Aaa...and the perception of achievement of university status, this is already stipulated by the MQA criteria of achieving university status, so I don't doubt the University attainment of the ICAM. I mean is the genuine, the achievement of university status by ICAM (Academic Staff 8). ▪ Umm upgraded from University status which is a very good achievement for the college even though it is 5 years old and especially the commitment from the management and staff who given full co-operations towards meeting all the needs. I mean the terms and regulations. all the requirements by the KPT. And aaa...and I'm very happy when they get it without any problem and the launching has make us more visible to the public (Administration Staff 1). 	<p>Feeling good due to commitment given by all to achieve University Status and be able to conduct a lot of research related to automation.</p>
<u>Changes</u>	
<ul style="list-style-type: none"> ▪ So seeing the changes in the institutions itself, the management, the students and also the facilities and getting to know how much the company spent, developed the university. By the fast changing in the institution I feel, I am also need to change (Academic Staff 16). ▪ Ummm..so as a University staff either in management or also in academic.. academician I believe that we have to change our mind 	<p>The changes are required in terms of individual mind set to cope with the changes and the ability to adapt to the new corporate policies.</p>

Significant Statement	Interpretative Meaning
Attitude	
<p>from thinking like college staff into university staff. (Academic Staff 16).</p> <ul style="list-style-type: none"> First I think, in the changing of institution the most important thing for staff employees is flexibility corporate with the policies...yaa I know the policies changing drastically from ICAM to DRB-HICOM U and as a staff, we need to support the policy because we know they must be a changing anymore, changing is happen. So me, I just feel neutral because I just feel we need to cope with the changes (Academic Staff 12). 	
<u>Impressed</u>	
<ul style="list-style-type: none"> First of all actually it's quite impressed with our achievement whereby from International College of Automotive than we transformed into DRB-HICOM University of Automotive within 5 years which is a quite tremendous achievement (Academic Staff 16). 	Impressed with the tremendous achievement.
<u>Readiness</u>	
<ul style="list-style-type: none"> I personally feel that from college to University..ummm..my personal view is we are not prepared for this lah..to be a University. Umm..ok..in my opinion..the only thing here to be considered as a University..we have the equipment..we have many buildings with so many damages..so we do know that to achieve University status and after being upgraded to University there will be international students..when we have international students with our ummm.. old buildings..like this la...so it will not be appropriate lah (Administration Staff 8). 	DRB-HICOM U is not ready for the achievement of University status.
<i>Achievement of University Status</i>	
<u>Neutral</u>	
<ul style="list-style-type: none"> So far neutral, not so many changes, so neutral. Just the same way (Academic Staff 5). I just feel neutral because I just feel we need to cope with the changes (Academic Staff 12). If you look at the environment, the environment is maintain the same but the only things is the organization is changing but our working environment neutral (Academic Staff 13). 	There are no changes felt and environment is still the same. However, the staff need to cope with the changes.
<i>Completing Task</i>	
<u>Helpful</u>	
<ul style="list-style-type: none"> It's easy for us to get collaboration for them in terms, I mean like new programmes development or research collaboration because we already have the university status compare if we are just only college because when we are college its quite difficult to get collaboration in terms of research with other university because we just represent ourselves as a college staff but then when we gain University status, now we are university staff, I think its more easier to us whereby we have our own reputation as university staff (Academic Staff 16). To me for the university status the way we work remains the same. Just that to say it is going to be helpful, with this university status 	The reputation as a University helps in terms of research collaboration compared to College level.

Significant Statement	Interpretative Meaning
Attitude	
<p>the way people look at us, for instance when we do the benchmarking against other universities, once we have become a university, other universities will treat us if we want to refer to or need from them regarding from a college we do benchmarking from a university despite we are not equal but the treatment will be different (Administration Staff 4).</p>	
<p><u>Unhelpful</u></p> <ul style="list-style-type: none"> ▪ If you asked me I feel unhelpful because there are few staff are reluctant to entertain..hmm new directions, and if we were given a tasks some of staff are reluctant to contribute because there is no clear direction and proper planning (Academic Staff 12). ▪ I would feel unhelpful because certain procedure, certain planning, is not being done according to the standard of University (Academic Staff 9). 	<p>Some staff are reluctant to entertain due to absence of direction and planning that is not in accordance to University standards.</p>
<i>Sharing Positive Things</i>	
<p><u>Academic Development</u></p> <ul style="list-style-type: none"> ▪ Working in DRB-HICOM U, of course a lot of people are new in education industry, so everybody is keep learning. (Academic Staff 8). 	<p>DRB-HICOM U is a platform to gain knowledge and continuous learning.</p>
<p><u>University</u></p> <ul style="list-style-type: none"> ▪ Positive things is aaa DRB-HICOM U is focus more on automotive, so we have technology, we have equipment updated latest better than other institution. So we have advantage on that area (Academic Staff 7). ▪ So there are many good things, like what my friend mentioned just now when we became a university, of course, we get more opportunities, in fact, we are under the management of a corporate company (Administration Staff 4). ▪ For me, the positive is when I work at DRB-HICOM U is a teamwork, colleagues and teamwork with my students (Academic Staff 15). 	<p>The advantages of DRB-HICOM U in automotive education can create better opportunities and greater teamwork between colleagues and students.</p>
<p><u>Working Environment</u></p> <ul style="list-style-type: none"> ▪ The positive and good things working in DRB-HICOM U is actually look at the multi expertise also experience staff that we have we have varieties and the mix of industry from academic background. That is the positive things that I can see (Academic Staff 13). ▪ Positive, good things working here. Number one we get to enhance our capabilities, and then, of course knowing more about the automotive because we have many subsidiaries (Academic Staff 15). ▪ Ok definitely positive lah because we are lucky to be owned by a corporate company, so, in terms of benefits for staff and students we are far more better than other higher education institution...more stable (Administration Staff 4). 	<p>In DRB-HICOM U, mixture of academicians and industry experts exist through DRB-HICOM group subsidiaries. As a result, it is beneficial to staff and students.</p>

Significant Statement	Interpretative Meaning
Attitude	
<u>Better Infrastructure</u>	
<ul style="list-style-type: none"> For me basically after we move you know to become a university status, I can see that the positive side is the new infrastructure, so we have better infrastructure. Alright umm.. more access basically, especially in terms of lecturing and so on (Academic Staff 1). 	The infrastructure is much better in terms of teaching and learning.
<i>(v) Sharing Negative Things</i>	
<u>People Responsibility</u>	
<ul style="list-style-type: none"> Sometimes certain departments they do not understand and we didn't get enough support in order for us to fulfil the needs (Academic Staff 13). Negative aspects as I have said earlier some staff can be cooperative, there are also those who refuse to give their cooperation (Administration Staff 7). 	Some departments do not understand their role and there is lack of cooperation. Thus, it has failed meet the needs required.
<u>No Career Development</u>	
<ul style="list-style-type: none"> Then the other thing is that the negative side here is we don't have the clear career path. Whereby I think HR should take this responsibility, should set up the guidelines umm the career path staff here. Means that if like lecturer example, how much they must work, if they want to get like senior lecturer title and then for the executive how much they work here to get the senior executive title. But here I think we don't have clear guidelines for us to developed, I mean for us to know what our career after 5 years. We don't have clear career path here (Academic Staff 12). 	The absence of career path and guidelines for academicians.
<u>Lack of Company Support</u>	
<ul style="list-style-type: none"> So I would say overall, the negative thing about working in DRB-HICOM U is about the management itself. In terms of planning, in terms of controlling, or monitoring, so I would say it's quite lacking there. So it will reflect the staff to work happily. Ok there's no clear instructions given also, makes other staff demoralize. Maybe they work in silo basis. Lack of teamwork especially in terms of work wise (Academic Staff 13). Yes clear direction but it is not easy sometimes when you want to fill the requirements to grow, but sometimes it was somehow blocked or..bureaucracy.. yaaa.... so many bureaucracy you know for example to go and see your supervisor to get the knowledge certain issue but the HR not allowed for you to do that (Academic Staff 12). 	The DRB-HICOM U management is lacking of planning, controlling and monitoring. No clear directions lead to staff demoralization. In addition, bureaucracy also exists and is not managed properly.
<u>Top Management Interferences</u>	
<ul style="list-style-type: none"> Some of them are not good, am not saying we are not good, but sometimes I don't really favour them. Am not trying to blame anyone but we are too much of hah..because we have we are a subsidiary to a conglomerate company so too many interferences from the higher-ups sometimes causing us difficulty to move rapidly as in the education field is hard (Administration Staff 2). As for me negative things besides working at DRB-HICOM U since we started from a college to University, we are not saying that we have been burdened but we are constrained by procedures 	Interferences from management and burdened by procedures – these create difficulties to move forward.

Significant Statement	Interpretative Meaning
Attitude	
that are too rigid meaning, that is possible but if the process is one step becomes two steps to us it becomes three to four five steps because we always have interference (Academic Staff 13).	
<u>Policy</u>	
<ul style="list-style-type: none"> ▪ Like academician they already have their academic job, academic tasks and like the other executive already have their own task but sometimes the management call you and asked you to set up the policy, to set up the SOP (Academic Staff 16). 	Absence of policy in the transition from College to University status.
<u>Communication</u>	
<ul style="list-style-type: none"> ▪ I think what is getting worst is the communication. Lots of information, important information has not been cascaded to the DRB-HICOM U staff, it's just something that we understand that some of it might be confidential, but if something related to marketing or DRB-HICOM U product what not should be clearly communicated to the members of the university (Academic Staff 6). 	The communication among staff is poor. Some information not cascaded down from top management.

4.10.2.2.2 Subjective Norms

Feedback was also received from staff on subjective norms. Five out of 16 academic staff said that it is highly important to think they should work in DRB-HICOM U. The same feedback came from administration staff where only three out of eight agreed with the statement. Less than half of the staff (five out of 16 participants) described that people play important to work in DRB-HICOM U. Similar feedback was received from administration staff where half of them felt the same way. It shows that there is very minimal response received from the participants. In contrast, there are also some academic staff (eight out of 16) who mentioned that no one important to them said that they need to work in DRB-HICOM U. The significant statements and interpretative meaning for subjective norms are presented in Table 4.22.

Table 4.22

Significant Statements and Interpretative Meaning for Subjective Norms

Significant Statement	Interpretative Meaning
Subjective Norms	
<i>People important to you think</i>	
<ul style="list-style-type: none"> ▪ If you asked my family of course they will says yes because it is convenience to me as I am local (Academic Staff 12). ▪ My parents (Academic Staff 7). ▪ My husband (Academic Staff 9). ▪ I don't believe, my family they don't believe...DRB-HICOM U is everything. (Academic Staff 1). ▪ No one person ever said such to me (Academic Staff 12) 	<p>Some of the important people to them think that they should work in DRB-HICOM U.</p> <p>None of the family members think that they should work in DRB-HICOM U.</p>
<i>(ii) People important to you believe</i>	
<ul style="list-style-type: none"> ▪ My family would say that I am lucky to be working with DRB-HICOM U since it's very convenience to me, location wise and then as it is under university there are lots of things that we can actually grow from there (Academic Staff 13). ▪ My superior said that my department need me really needed me to stay here (Academic Staff 16). 	<p>Some of the staff's family members and superiors believe they are lucky to work in DRB-HICOM U because they can gain a lot of opportunities.</p>

4.10.2.2.3 Perceived Behavioural Control

In perceived behavioural control, it is discovered from both participants (academic and administration) that working in DRB-HICOM U is considered not too easy and not too difficult, the majority comprising administration staff (six out of eight). Academic staff described that the working environment of DRB-HICOM U influenced them. There were seven out of eight administration staff agreed that family and friends had influenced them to work in DRB-HICOM U. The significant statements and interpretative meaning for perceived behavioural control are presented in Table 4.23.

Table 4.23

Significant Statements and Interpretative Meaning for Perceived Behavioural Control

Significant Statement	Interpretative Meaning
Perceived Behavioural Control	
<i>Working in DRB-HICOM U</i>	
<u>Extremely Difficult</u>	
<ul style="list-style-type: none"> ▪ For me extremely difficult because there is no clear direction. As we know that organization chart also has not being endorsed, how we are going to work and how we are going to set up the SOPs. We need the SOPs to make sure the daily operations can run smoothly. So if we don't have that, how can an organization grow (Academic Staff 13). ▪ But here, even though there is a lot of interference, help is there although for example if they give us a project, and then it does not come with a burden but coupled with the expertise, they also come with complete costs. So, to claim that it is extremely easy may not be so, not even extremely difficult (Academic Staff 16). 	<p>It is extremely difficult to operate without proper organization chart and SOPs. However, with the support from the other staff, it can be completed.</p>
<u>Easy</u>	
<ul style="list-style-type: none"> ▪ It is not hard and not easy but there are challenges to this work sometimes I feel there are pressures (Administration Staff 7). ▪ Easy because I have colleagues to guide me. Easy internal dealings (Administration Staff 8). 	<p>The task is not easy or difficult because colleagues are willing to provide guidance.</p>
<u>Sometimes Easy and Sometimes Not Easy</u>	
<ul style="list-style-type: none"> ▪ Sometimes easy and sometimes it is not and easy if you know what you know what you want to do what you have to do...clear direction (Academic Staff 13). ▪ Sometimes its easy sometimes is difficult depends on what kind of task we received (Academic Staff 14). ▪ It is not hard and not easy but there are challenges to this work sometimes I feel there are pressures (Administration Staff 7). 	<p>Sometimes, the tasks given are easy and sometimes not easy due to lack of direction.</p>
<i>Influence to work in DRB-HICOM U</i>	
<u>Job Satisfaction</u>	
<ul style="list-style-type: none"> ▪ To consider what influenced me more would be my duties lah..my JD (Job Description) (Administration Staff 7). 	<p>The duties of the staff influenced to work in DRB-HICOM U.</p>
<u>Working Environment</u>	
<ul style="list-style-type: none"> ▪ The environment, the area because I am not the one work in urban area because I am from there and I want more relaxed place and my husband and me decide to stay here for long term (Academic Staff 14). ▪ As for me the things that can influence me to work here at DRB-HICOM U because of the teamwork between staff here. And also here in DRB-HICOM U, I can obtain knowledge and learn new things almost every day. So that's what I like about my job (Academic Staff 15). 	<p>The comfortable environment, teamwork among staff and leaning culture makes them stay with DRB-HICOM U.</p>

Significant Statement	Interpretative Meaning
Perceived Behavioural Control	
<ul style="list-style-type: none"> About the organization behaviour, I learned a lot and I looking forward to learn more in probably I can use this experience..aaa to communicate with other company and or I can use my experience and sell it to another organization which I looking forward with probably later (Administration Staff 1). 	
<u>DRB-HICOM U Location</u>	
<ul style="list-style-type: none"> The most influential is the location lah (Administration Staff 8). As we know DRB-HICOM also a very big company. We have a good package also as an employee. So where else you can get this kind of benefit (Administration Staff 13). 	DRB-HICOM U's location and competitive remuneration packages influenced them to work in DRB-HICOM U.
<u>Family & Friends</u>	
<ul style="list-style-type: none"> Family and friends (Academic Staff 6). If you asked me, of course family (Academic Staff 13). I think my family because I like to be in the teaching world (Academic Staff 9). 	Family and friends influenced some of the staff to work in DRB-HICOM U.
<u>Unique University</u>	
<ul style="list-style-type: none"> For me what I like about DRB-HICOM U it is a specialised automotive institution. So it's kind of different from the rest. It's a specialized automotive, it's unique (Administration Staff 5). The feeling become pioneer is different (Administration Staff 2). I have a lot of industrial experiences, here we change a lot to education (Administration Staff 4). 	Some of the staff felt the uniqueness of DRB-HICOM U influenced them to work in DRB-HICOM U.

4.10.2.2.4 Intention (Sustaining Competitive Advantage)

It is found that academic staff (10 out of 16 participants) and administration staff (six out of eight participants) are willing to continue working with DRB-HICOM U. The majority of the staff - academic staff (11 out of 16 participants) and administration staff (five out of eight participants) - intend to embed technology in their tasks. It is perceived important to staff to have technological capability in order to sustain competitive advantage. Eleven out of 16 academic staff and five out of eight

administration staff mentioned this. The significant statements and interpretative meaning for intention are presented in Table 4.24.

Table 4.24
*Significant Statements and Interpretative Meaning for Intention
 (Sustaining Competitive Advantage)*

Significant Statement	Interpretative Meaning
Intention	
<u>Continue Working with DRB-HICOM U</u>	
<ul style="list-style-type: none"> ▪ Yes because I believe it can grow in the future and they will utilize the technology same like other University, student's registration, student's records. Perhaps one day our system is going to be as efficient as other University systems (Academic Staff 15). ▪ So when our technology is good, for us to soar can be easy. Because we are already famous for our technology. So that is our advantage (Administration Staff 8). ▪ We are one of the pioneer la in Automotive college so our aim is to be one of the best automotive institution. Probably in Asia region. So we should be proud lah to represent DRB-HICOM U (Administration Staff 5). 	<p>The staff will continue working with DRB-HICOM U provided with the technology as the advantage of DRB-HICOM U.</p>
<u>Intend to Embed Technology in Task</u>	
<ul style="list-style-type: none"> ▪ Yes I use technology in my teaching usually. The one that usually I use is laptop, projector and maybe..because technology is changing right. So hope that with the changes of the technology, DRB-HICOM U also will change. Same with the technologies have now (Academic Staff 15). ▪ Yes, sure..to expedite the process (Academic Staff 10). ▪ I would like to embed technology to simplifying my task (Academic Staff 7). ▪ It will help in saving time (Administration Staff 5). 	<p>Intention to embed technology in teaching exists because it can expedite and simplify the task and save time.</p>
<u>Perceive Important</u>	
<ul style="list-style-type: none"> ▪ Technological capability is important if you talk about engineering use a lot of things but for us there is technology that is important though it's limited but it helps in teaching and also completing other tasks daily...daily tasks (Academic Staff 14). ▪ As we are in the millennia era, of course, yes. As for the students also it can be a very good selling point. For example nowadays we can see a lot of University giving away iPads, if we can do that also, we can do that as a marketing strategy (Academic Staff 12). ▪ To sustain the competitive advantage because potential students might be attract to the latest technology we have here compare to other institution (Administration Staff 3). 	<p>In sustaining competitive advantage, technological capability is perceived as important by the staff because it assists in teaching, completing daily tasks and serves as a good selling point to promote or attract students to DRB-HICOM U.</p>

Significant Statement	Interpretative Meaning
Intention	
<ul style="list-style-type: none"> ▪ For me yes of course the technology is quite important for DRB-HICOM U, DRB-HICOM U to sustain its competitive advantage because of in order for us to compete with other university of course we should have the software and the system, especially the latest software, the latest version. So it's easier for academician, and it's easier for the admin staff to complete their task to complete their responsibility. To fulfil their responsibility (Academic Staff 16). 	

4.10.2.2.5 Technological Capability Perception

Almost all academic staff (12 out of 16 participants) and administration staff (five out of eight) said that they use technology in their daily tasks. In addition, the staff agreed that technology capability has an effect on intention of DRB-HICOM U to sustain its competitive advantage. This was mentioned by 10 out of 16 academic staff and seven out of eight administration staff. The significant statements and interpretative meaning for technological capability perception are presented in Table 4.25.

Table 4.25
Significant Statements and Interpretative Meaning for Technological Capability Perception

Significant Statement	Interpretative Meaning
Technological Capability Perception	
<u>Use Technology Daily</u>	
<ul style="list-style-type: none"> ▪ The easy one is computer, hand phones, projector and also some of the items in the lab, tools and etc (Academic Staff 8). ▪ Systems MOODLE, CMS and of course all of the software provided in our laptop and of course the internet software such as Dropbox, our blogs and but then for our systems I think we have to make sure the system in comprehensive enough so that our daily task can be done in a more proper manner and smoothly (Academic Staff 12). ▪ Maybe for FOE we used engines, gearbox, and also robotic engineering (Academic Staff 11). 	<p>Technology is used by staff daily in completing or executing their tasks, such as MOODLE Systems, CMS, Dropbox, library systems, as well as the equipment for engineering programmes.</p>

Significant Statement	Interpretative Meaning
Technological Capability Perception	
<ul style="list-style-type: none"> ▪ Machines related to my programme. Vehicle inspection machines (Academic Staff 7). ▪ IT technology, we are using Windows, e-learning, e-Brary, we are using some sort like CAVIS system, for vehicle inspection and sometimes use not that high tech tools that we use during practical class (Academic Staff 9). ▪ Yes, I do. I am using e-learning portal and all those Microsoft office, tools to execute the task. Basically that's all the things that I use (Academic Staff 5). 	
<u>Technological Capability Effect</u>	
<ul style="list-style-type: none"> ▪ Nowadays technology is a must and there is no exclusion for our University if the University wants to grow and want to have more students..ok, using technology is a must. Through the marketing, through the website, to satisfy our current students, the company must put extra attention under technologies (Academic Staff 12). ▪ Really need the technology to increase our competitiveness level because of somehow we need technology in order to promote our new university (Academic Staff 14). ▪ Technology very important things to umm technology is very helpful to us aaa to aa compete with other universities (Academic Staff 15). ▪ Same I think like compared to other university or college outside there, DRB-HICOM U have the advantage in terms of practical session. We use quite high technology, and basically all those technology, comes from industry directly so if we want to manage such tools and equipment that is very difficult to get outside (Academic Staff 11). ▪ Yup because we are in automotive because we compete with new technologies. One more, time changes, sophisticated technologies so we are more to automotive a lot of use all machine, new robots, all that not only in Malaysia, the whole worldwide (Administration Staff 2). ▪ Technology is mandatory and the technology that we need for us to sustain our competitiveness. Some universities or other colleges, besides us, business, we are also into automotive. So the technology needs to be update. Not just what is readily available and we merely sustain, we must always be driven by change and sustain the latest technology (Administration Staff 4). ▪ I also think that the technology will have an impact on DRB-HICOM U, it wants to stay competitive. Because as even right now if we want to attract students they are more inclined to technology, how about our facilities, do we have Wi-Fi? Do we have an air-conditioned place to hang out, which is comfortable to them, they can browse through internet, to seek information, to seek journals. Nowadays, physical stuff are not well-received but students are more to technology (Administration Staff 3). 	<p>The effect of technology is great because promoting DRB-HICOM U can be much easier in order to become competitive in the market. DRB-HICOM U needs to ensure their teaching and learning equipment is up-to-date.</p>

Significant Statement	Interpretative Meaning
Technological Capability Perception	
<ul style="list-style-type: none"> Yes, but aaa..I shall say yes cause aaa it speed up all the processes and avoid any delay (Administration Staff 1). 	

4.10.2.2.6 Change of Management

In terms of highlighting the staff concerns on the change of management, most administration staff (five out of eight participants) gave their views. In order to manage the change, some of the staff expressed that they can manage the change positively. Three out of 16 academic staff and five out of eight administration staff said this. The predominant view is that the change process can be improved by improving skills and knowledge of the staff. This was stated by five out of 16 academic staff and four out of eight administration staff. The significant statements and interpretative meaning for change management are presented in Table 4.26.

Table 4.26
Significant Statements and Interpretative Meaning for Change of Management

Significant Statement	Interpretative Meaning
Change of Management	
<p><u>Concern</u></p> <ul style="list-style-type: none"> Ok, on the other side is good because we are moving forward to a better institution but the way is quite challenging. There's so many things to set up, there is so many things is not clear. So it tough actually. The road is quite tough and besides we change, the top management change is also giving a big impact to us because every time the top management change the vision, mission also will change. So everything is going to be changed. So it's not clear. We don't have a clear direction (Academic Staff 12). I believe also ITD needs to set up their own policy rather than follow through the group policy it's because we are in different industry. If they want to block it maybe they need to block it to non-academic staff but academic staff will be given opportunity have to look at the YouTube because it is one of the learning tools where we can attract more students to become more engaged in class. Furthermore I believe we also need to upgrade our facilities. Either for students or for staff because the staff itself they need to 	<p>The change of management becomes hard for the staff due to lack of clear directions, changes of top management, university policy set-up, bureaucracy in decision-making and absence of change of management process for the staff.</p>

Significant Statement	Interpretative Meaning
Change of Management	
<p>have a very strong platform or strong system to make sure that the daily process will be shared with other departments. If we can have that, we can actually close the communication gap between departments (Academic Staff 13).</p> <ul style="list-style-type: none"> ▪ I think it's very difficult to align with the proper university, because from the college last time we don't have the necessity to who the channel you want to report to, so that I think position out is very difficult..aaa totally different from previously. That is number 1, number 2 is when we expanding, our business college to University, we have to segregate our committee to whom we need to report to, like previously like college time, we still can do Taisho for everybody, or we need to go for HR have this and that. However, now I think that we need to segregate all this things. For the faculty of Engineering, we have, we need to have our own management, we need our own some sort like procedure so that we don't have to go straight to top management, will take a longer time and then may take what we call that step by step approval. It's very difficult (Academic Staff 9). ▪ From a college to University, changing of people, changing of technology, changing of team. So need to re-learn with new people. For the seniors we know how is their attitude, we know how what he wants, we are already familiar with their antics. With the new staff, we need to learn, teach new ways, but it's a good thing. New people, new experience (Administration Staff 2). <p><u>Fear</u></p> <ul style="list-style-type: none"> ▪ The road is quite tough and besides we change, the top management change is also giving a big impact to us because every time the top management change the vision, mission also will change. So everything is going to be changed (Academic Staff 12). ▪ I would say I am a bit uncomfortable because as history shows every changes comes, new management comes in they never look into bigger picture before they do the changes. And furthermore they didn't take consideration into the current situation before they want us to move to new direction (Academic Staff 13). ▪ As for me I'm feeling good but at the same time I'm also feeling stressful because of it's quite fast actually we transform from college into university. Because once we become university there is a lot of things we need to set up and there is a lot of things we need to restructure back that suitable to suit into university status. It's good but it's also quite stressful actually (Academic Staff 16). 	<p>Staff fear described through change of top management, vision and mission where they are unable to see to bigger picture ahead. With the fast transformation, a lot of things need to be restructured to suit university status.</p>
<p><u>Good Things</u></p> <ul style="list-style-type: none"> ▪ Just a feeling...I just feel ok, good, the changing is happen so I'm just go with the flow. I just feel good about it (Academic Staff 14). ▪ Ok I feel also good, for the change process form ICAM to DRB-HICOM U and this is the future planning, basically to move to change from college to university (Academic Staff 15). ▪ With the new staff, we need to learn, teach new ways, but it's a 	<p>Good things happened for DRB-HICOM U in the transition from College to University, new colleagues and good impact on the public.</p>

Significant Statement	Interpretative Meaning
Change of Management	
<p>good thing. New people, new experience (Administration Staff 2).</p> <ul style="list-style-type: none"> ▪ I feel like certainly good for the institution, meaning we have succeeded to grow to become a University. So meaning in 5 years, we managed to achieve the university status. So it is positive for DRB-HICOM U. (Administration Staff 5). ▪ This change process is indeed a lot from a college to University. From temporary college to permanent college. From not having SOPs now we have various SOP. We used to not having ISO now we already have ISO. A lot and the management had 2,3 people now it has many staff with various expertise. So many (Administration Staff 4). ▪ I'm happy with the change process because of the status upgraded and it has aaa...given a very good impact towards the public and towards us..public notice our visibility and umm..and looking forward to know more about us..umm..yaa that's all (Administration Staff 1). 	
<p><u>No Change</u></p> <ul style="list-style-type: none"> ▪ Nothing changed. Same thing (Academic Staff 2). ▪ It's just the name changes (Academic Staff 6). ▪ Yes, nothing changed (Academic Staff 1). ▪ Yes same, only status and name, maybe our image changes, but we are in the same condition. Especially academician maybe (Academic Staff 5). ▪ Yaaa, I see that the process change is not significant and as I mentioned earlier, it's not being communicated to the lower level. So we don't know much what is actually happening compared when we are ICAM and now we are DRB-HICOM U. It has been 6 months and we feel the same (Academic Staff 4). 	<p>There are no changes in DRB-HICOM U where the changes process was not properly handled by the management.</p>
<p><u>Manage - Communication</u></p> <ul style="list-style-type: none"> ▪ What actually we are heading to. I believed this is the thing that should be transparent in the sense that all the staff they know which direction they need to go and what type of contribution are they require to give. As I mentioned earlier, it's about communication (Academic Staff 4). ▪ Provide the staff with the clear objectives, so they know what basically they have to do especially the operation parts. Day to day kind of daily decision and definitely towards the end to provide them with the clear rewards. Then this will motivate them actually to achieve objectives (Academic Staff 1). ▪ I am trying to look the every aspect of positive changes even though sometimes I'm not satisfied with it but I try to be positive and try to look beyond that. I mean maybe the problems, the limitations is just a temporary every stage so I believe the institution will become a very good institution, therefore I just try to improve myself and just adapt with whatever small problem 	<p>There is poor communication between top management and lower level management. Without clear objectives and organization chart, it leads to ineffectiveness of daily operations and decision-making.</p>

Significant Statement	Interpretative Meaning
Change of Management	
<p>that we're having. That's all. (Academic Staff 13).</p> <ul style="list-style-type: none"> ▪ I think that the most important things that when we changed the organization, organization also changed. Organization means the organization chart. When the chart is not right. It's not proper or established well, so that it will bring a mess for the whole process..So the boss or superior, they want to convey their findings or their planning, however, there is no proper chart so they tend, we can't also do anything. We don't know from where we want to get the information. Or how going to communicate well..in total mess (Academic Staff 9). ▪ As for me, of course we have to look as the admin staff, we have to look into other university do benchmarking, how they manage their institution because other university before there was a college so somehow we need to do some research how they manage university how they manage transform from College University. We have to look into system, we have to look into their new structure and then we can do benchmarking. Benchmark and collect some important things that we can apply in our university (Academic Staff 16). <p><u>Manage - Leadership</u></p> <ul style="list-style-type: none"> ▪ Another point is that, leadership. Basically this is a big change from ICAM to DRB-HICOM U. We need a good leader because leader it's just not instructed the staff should do but basically to guide towards vision and mission. Very visionary and inspiring as well. Let's work together..you do this, you do that..they need to guide.. not instruct (Academic Staff 4). <p><u>Manage – No Change</u></p> <ul style="list-style-type: none"> ▪ Because not so many changes, so..as usual.. (Academic Staff 6). ▪ Because nothing motivates us (everybody laughing) (Academic Staff 2). ▪ We managed it well..(laughing) (Academic Staff 4). ▪ It should be from management because we know that have a like town hall and some other discussion between management and staff because until now we didn't see any big changes so looking forward for changes especially in academic maybe; flexi hours maybe benefits that deserve to staff to get it, in other salary maybe (Academic Staff 5). <p><u>Manage – Planning</u></p> <ul style="list-style-type: none"> ▪ For me to manage the change process, I will say maybe we need to have few discussion like in terms of planning, so strengthen our work during our difficulties time, especially a lot of change especially from college to the university. Find out the best way to correct way of communication skill to avoid miscommunication. Only that (Academic Staff 10). ▪ I believe that the management would have very good planning as DRB-HICOM U as University. They might have planned for a strategic planning in achieving something to realize their vision and mission. However, I think that I've seen nothing has been 	<p>Good leadership is required to move DRB-HICOM U forward.</p> <p>No need to manage because no changes happened.</p> <p>There is a need to discuss among staff in terms of planning, particularly for the change from College to University. Inevitably, the staff will understand their role and responsibility towards DRB-HICOM U.</p>

Significant Statement	Interpretative Meaning
Change of Management	
<p>cascade down, explained to all the members of the University. So ya we have the venue, the town hall we called it where the management meeting all the staff. But that forum is yet to basically delivered the information that I have mentioned just now and leaving the town hall still everyone in vague and maybe in darkness. What actually we are heading to. I believed this is the thing that should be transparent in the sense that all the staff they know which direction they need to go and what type of contribution are they require to give. As I mentioned earlier, it's about communication. I believe we really a very strong human resource in DRB-HICOM U, we just need to know what basically our role, what management need to contribute besides our daily task. So I believe everybody is happily to work to see the progress of DRB-HICOM U. Something the change...I hope things can be changed. If everyone is in the darkness so we hardly can achieve our vision and mission (Academic Staff 4).</p> <ul style="list-style-type: none"> ▪ With better planning and better planning and aaa less necessary involvement for those who for..for those not belongs to this organization. Ok aaa..umm as I said much much earlier before that, there's many people that the processes they have they own thoughts they own idea and has slower down the processes..so we do planning we have to send to various of people for approval and each of them have different thoughts and different idea and umm..that makes us in conflict but end of the day we still need to make decision and ummm.. there's some frictions in the management as well (Administration Staff 1). <p><u>Manage – Positively</u></p> <ul style="list-style-type: none"> ▪ For me I guess, I just go with the flow, superior changes, bosses change, we just need to fulfil what we need to do. Because I think for academician is ok because we are not dealing with more to the policies and bosses or superior, we do ourselves, we know what we need to do. It's not..not so much changes. It's just a bit of policy changes, but for me yes..go with the flow (Academic Staff 1). ▪ As the name change process implies we must learn, that is, we must self-explore, a good boss will show how the process needs to be done, like this, like this. This one, with correct command the resources can be easier lah. But so far, I can manage lah, so far my friend outside IPT, who can help us, can guide us on how to do it. Like that (Administration Staff 3). ▪ To me, there are two changes, one is to become worse or another is to be better. Of course, what we choose is always to be better. So using the right means, of course, we want the change to make us better. So if the means are inappropriate for us, push it aside, but if the change is a process, meaning can make us more mature and make us better, competitive, the process should be sustained lah (Administration Staff 4). <p><u>Change – Improve Skills & Knowledge</u></p> <ul style="list-style-type: none"> ▪ Meaning that the skills and expertise of the certain groups needs to be included in area of the change. For example for technical, so for sure the technical member should be there (Academic Staff 3). 	<p>The change can be managed positively by working independently. The ability to adapt to the new environment is very significant.</p> <p>The change process can be improved through improving skills and knowledge of the staff.</p>

Significant Statement	Interpretative Meaning
Change of Management	
<ul style="list-style-type: none"> ▪ DRB-HICOM U should increase number of staff, which is I believe if we have more staff with good experience with good qualifications, anything related to academic, related to academic institution that I believe the process, the changing process, is much easier (Academic Staff 16). ▪ I think that, from this how we can improve is we give the empowerment to the management or to those needs the empowerment. Right now everybody is not ready to make decision, so that everybody is lost that people are not aware of what they are doing. So if the empowerment is given to the person, that we can guide the decision important in our daily works. So I think that is the most important thing (Academic Staff 9). ▪ For me myself because working with a management team that we can observe if possible lah, we go through, we improve our management, should be the instruction come from one person. Its not like this person says this, then we have to do it, that person says that, then we have to change and we need to work on the project. Because when there are too many heads, we cannot, like a car la we have only one driver, is there such thing as 2-3 drivers, it will be a mess (Administration Staff 2). 	<p>Empowerment to be given to the staff and only listen to one leader.</p>
<u>Change – Improve Standard Operating Procedures</u>	
<ul style="list-style-type: none"> ▪ Ok, my opinion what can be improve application of SOPs. We have the SOP though the bosses and superior changes, we need to work within the SOPs. So if superior change, the task that we do is still the same. And another thing is what can be improved is communication within the department I think. We need more communication that clearly disseminate to other staff (Academic Staff 14). 	<p>Standard Operating Procedures also vital to provide guidelines to the staff. A lot of improvement needs to be done.</p>
<u>Change – Benchmark</u>	
<ul style="list-style-type: none"> ▪ Change process can be improved, benchmarking with other university because DRB-HICOM U very new though to improve the changes (Academic Staff 15). ▪ We ourselves need to be open, meaning we have to be receptive, accept available options. Probably from our colleagues, probably from the external environment, from other universities or probably from our own students. Because sometimes when they give us suggestions, if we do know the suggestion is suitable for good, why not we accept them first and then we process, we cannot just simply reject, most importantly we need to be open. More receptive (Administration Staff 4). ▪ I share the same view we must be open to people’s criticisms, try to improve with time. Furthermore, within the company, communication, telephone breakdown all that if possible should be avoided. Sometimes the higher-ups would say things differently, his staff would say something different. So hopefully everybody gets the same message (Administration Staff 3). ▪ Loads of discussion before making any decisions (Administration Staff 5). 	<p>The change process also can be improved though benchmarking with other universities, opening up to opportunities and suggestions and becoming more receptive to criticism</p>

Significant Statement	Interpretative Meaning
Change of Management	
<ul style="list-style-type: none"> ▪ As far as I'm concerned the HRMS system that HR uses, is used at a certain level. In the process..there are items and sections that we use..in future..to encourage us, we will provide input like at present the claims are still done manually so we shall improve by using a system. Training, recruitment, and in future and we also have a Performance Management System (PMS)..so in the near future lah (Administration Staff 7). 	

4.10.2.2.7 Scenario and Ideas

This section provides some scenarios given to the participants on some programmes that encourage the usage of and the need to acknowledge technological capability. Besides that, the session was also opened for any ideas or suggestions for DRB-HICOM U's improvement. More than half of the academic staff (nine out of 16 participants) said there is a need to conduct programmes that encourage the usage of technology for staff. This is linked to the statement that staff must have knowledge in technology (12 out of 16 academic staff). The significant statements and interpretative meaning for scenario and ideas are presented in Table 4.27.

Table 4.27

Significant Statements and Interpretative Meaning for Scenario and Ideas

Significant Statement	Interpretative Meaning
Scenario and Ideas	
<u>Programme Encourage Usage of Technology for Staff</u>	
<ul style="list-style-type: none"> ▪ DRB-HICOM U needs to encourage staff in order to use the technological capability..aaa let say we have new lab, so we need new equipment, so for sure training need to be held for those staff involved. And also procurement of those items or machinery need to be included together training also (Academic Staff 3). ▪ Actually we should set up one department that helps us to do this visual aids. We know the lecturers have the expertise but they are not the expert to do this visual aids (Academic Staff 13). ▪ Technology, I think that maybe we can umm we can focus on the IT. That technology. Aaa nowadays, people, or students, everybody have Iphone have the Wi-Fi thing, so that this is the time everybody in DRB-HICOM U here we need to learn IT a lot. So maybe from the teaching itself, learning (Academic Staff 9). ▪ I think of it because you see that in my perspective is that technological capability is more to the system that we have. Ok, as mentioned by just now, we need CMS, campus management system which is very comprehensive inclusive the students portal, lecturers portal, what not and of course there is needs for the training. The training basically a fully utilized of all these technological capability so that all the information will well communicated to respective party and our documentation will always be complete and up to date. As what we know using all these manuals forms, papers, we tend to loose information which might be important. Rather than that if we are in automotive, we are looking the perspective of faculty of engineering and technology, so whatever the equipment in the faculty which is assisting the teaching and learning activity technology should be up to date because automotive industry has very rapid change. If we are not in line with the change so basically it's quite an embarrassed to claim as an automotive university (Academic Staff 5). ▪ When the company have the technology and the staff coming in and agreed to join the company the technology is already there and we are to walk along with them with the technology and it is like in hands on training but for the specific training for the to train them to use the technology it can HR or the management should plan for the training in proper manner such as umm for example umm..using the what's app umm even though we using our own handphone our own cost this is the fastest and the easier way to communicate with people I mean with the staff. But some of the staff is using it is not for the purpose of the organization but for the personal and HR should highlight this matter as well (Administration Staff 1). 	<p>Programmes to encourage usage of technology are required to ensure it will facilitate their daily tasks in DRB-HICOM U. A proper training needs to be conducted for the staff. Staff and technology must walk side-by-side.</p>
<u>Staff Knowledge in Technology</u>	
<ul style="list-style-type: none"> ▪ Staff should be more literate in more the technologies we use. Using all the software we are introducing. Furthermore lecturers especially, they need to be more creative to make sure they can engage more interesting classes (Academic Staff 13). 	<p>Staff should be technology literate so that it can ease their daily tasks and not make them</p>

Significant Statement	Interpretative Meaning
Scenario and Ideas	
<ul style="list-style-type: none"> Yes, it's not only the institution buying or having the technology but the staff also needs to learn using upgrading themselves with the knowledge regarding the technology (Academic Staff 7). 	heavily dependent on the University to provide but to search on their own well.
<u>Ideas – Marketing</u>	
<ul style="list-style-type: none"> Aaa the main what you called, the main item to sustain aaa besides the technological capability is the students intake. So if there is no students, even though our technological capability is high, there is no use also. So some other parties, some other departments, to focus their efforts in order to increase the students intake (Academic Staff 8). Ok umm..as for me even though I am only admin staff because not only for me, other admin staff or this is also goes for the academic staff or supporting staff, everyone must support the organization such as getting the more students. Everybody must sell DRB-HICOM U at least at one intake one staff can enrol 1 students. This is regardless for marketing, this is for all staff I mean our what I'm talking about the staff which is not the marketing staff (Administration Staff 1). 	Marketing exercise to promote DRB-HICOM U also important to generate income even though DRB-HICOM U has the facilities.
<u>Ideas – Teaching & Learning</u>	
<ul style="list-style-type: none"> And one more thing is student portal is a must. We still have yet to have student's portal. Nowadays if the students wants make a registration they have to do it manually and that's beyond expected from the university (Academic Staff 13). There are rooms of changes maybe what I can suggest is more workshops on technology for us that can give academic more knowledge about current technology can be used (Academic Staff 14). 	Teaching and learning should be improved, for example, student's portal and additional workshops to encourage staff and students to learn new technology.
<u>Ideas – Upgrading Facilities</u>	
<ul style="list-style-type: none"> Furthermore I believe we also need to upgrade our facilities. Either for students or for staff because the staff itself they need to have a very strong platform or strong system to make sure that the daily process will be shared with other departments. If we can have that, we can actually close the communication gap between departments (Academic Staff 12). I think it is better in future if we want to implement a certain technology, we have to do a study first, preliminary studies on what actually the user wants. What actually, what kind of system the users want (Academic Staff 13). The institution itself should take responsibility or should provide the technologies. It doesn't matter if it is a software or system or I mean the latest, like the latest model of laptop or anything, so that, the other staff academician, or admin can use the technology so they can..I think..I believe it can increase the competitiveness level once they know how to use the technology or software or so on (Academic Staff 16). 	DRB-HICOM U facilities need to be upgraded to foster better communication and competitiveness.
<u>Ideas – Training</u>	
<ul style="list-style-type: none"> We need more training programmes new software for the helpful for our daily tasks (Academic Staff 15). 	Training programmes on new software must be provided by DRB-

Significant Statement	Interpretative Meaning
Scenario and Ideas	
	HICOM U for the staff.
<u>Ideas - Benchmarking</u>	
<ul style="list-style-type: none"> We need to have a benchmark with other university. So that we can align or we can get to the benchmark, if we don't align with the benchmark, this is my opinion, we don't know what we doing, we intent to go separate way from the others (Academic Staff 9). 	Benchmarking with other Universities is significant.
<u>Ideas - Management support</u>	
<ul style="list-style-type: none"> Actually we are asking every staff whether they like to further their study or not. Actually they want to further their studies; maybe they have no support, financial support or maybe DRB-HICOM U support. In terms of maybe flexible time is very important in education line, so why not DRB-HICOM U follow just get one benchmark from other local universities, or maybe government universities they do the flexi. Flexi is very important in education line (Academic Staff 11). 	Management support required by staff, especially academicians, to further their study. Cooperation with all parties and flexibility is needed.
<ul style="list-style-type: none"> Cooperation from all parties is very important. I mean although is another thing, yaaa whatever decision-making..it's like how to say this..the process must be right la..not just simply make the decision about that, let there be involvement from all parties (Administration Staff 6). 	DRB-HICOM U facilities need to be upgraded to foster better communication and competitiveness.
<ul style="list-style-type: none"> Ok my first idea is staff recruitment, whether as bosses or just staff, must be qualified for the job (Administration Staff 8). 	
<u>Ideas - Relationship Gap</u>	
<ul style="list-style-type: none"> Perhaps from the social activities...but we have..we do have from the company's part or the staff themselves have some initiatives in terms of activities that they organize but we do want activities which everyone is involved aaa like that..like if in terms of sports some staff are not interested so they will not participate..(Administration Staff 7). 	A relationship gap exists when there is poor participation in events organized by the management.
<u>Ideas - Decision Making</u>	
<ul style="list-style-type: none"> I think DRB-HICOM U should be given power in certain kind of decision making. Sometimes just for a simple decision you need to go through many levels of top management, so I think we should be given certain kind of powers for certain we need. Very big issues then we have to refer to the top management but for the management of DRB-HICOM U, because if we want to go too many tier, management over take so much time, we the time we want to take action is already obsolete (Academic Staff 6). 	Bureaucracy related to decision-making must be eliminated because it may prolong the decision process. This is due to issues related to the technology - it requires prompt action.
<ul style="list-style-type: none"> Ironically, because technological capability need a speedy response. (everybody laughing). I think certain management policy with regards to approval, ya what has mentioned just now, that we need to change in line with the technological capability that we want to adapt in the campus system or what not (Academic Staff 5). 	

In general, the findings from the significant statements and interpretive meaning can answer the four research questions of this study. The next section discusses in detail the findings and answers the related research questions.

4.10.3 Staff's Attitude and Sustaining Competitive Advantage

The findings from the interview with regards to first research question: *What is the relationship between staff attitude, subjective norms and perceived behavioural control and the intention of DRB-HICOM U towards sustaining competitive advantage?* (The network diagram of the relationship is illustrated in **Appendix M**) is as follows.

According to the feedback from the staff, most of the staff feel good with the achievement of the University status after reading the newspaper cutting. The statement is as follows:

“Upgraded from University status which is a very good achievement for the college even though it is 5 years old and especially the commitment from the management and staff who given full co-operations towards meeting all the needs” (Administration Staff 1).

Besides that, some of the staff feel proud with the achievement of DRB-HICOM U as a University. It is found in the following statement:

“I feel proud because in five years it is quite a short time for us to achieve from a college we leaped to be a University without going through University College in five years” (Academic Staff 1).

Moreover, changes are required in terms of individual mind-set to cope with the changes and the ability to adapt to the new corporate policies. It is mentioned in the following statement:

“By the fast changing in the institution I feel, I am also need to change” (Academic Staff 16).

On the other hand, majority have neutral feelings to work with others after achieving University status:

“If you look at the environment, the environment is maintain the same but the only things is the organization is changing but our working environment neutral” (Administration Staff 12).

In completing their daily tasks, it is found that it is helpful for some of the staff, who expressed as follows:

“Now we are university staff, I think it is easier to us whereby we have our own reputation as university staff” (Academic Staff 16).

In contrast, few staff mentioned that University status is not helpful due to procedural matters. It is described through the following statement:

“I would feel unhelpful because certain procedure, certain planning, is not being done according to the standard of University” (Academic Staff 9).

Additionally, many positive things have been experienced after the University status as expressed by the staff:

“Positive things is aaa DRB-HICOM U is focus more on automotive, so we have technology, we have equipment updated latest better than other institution. So we have advantage on that area” (Academic Staff 7).

Besides that, one of the academic staff mentioned the positive element is the teamwork among staff and students:

“For me, the positive is when I work at DRB-HICOM U is a teamwork, colleagues and teamwork with my students” (Academic Staff 14).

The working environment is also a positive factor in working in DRB-HICOM U:

“The positive and good things working in DRB-HICOM U is actually look at the multi expertise also experience staff that we have we have varieties and the mix of industry from academic background. That is the positive things that I can see” (Academic Staff 12).

Besides, another remark given by the staff is as follows:

“Positive, good things working here. Number one we get to enhance our capabilities, and then, of course knowing more about the automotive because we have many subsidiaries” (Administration staff 12).

Both remarks show the advantage of DRB-HICOM U as part of DRB-HICOM subsidiaries where the knowledge can be leveraged through the subsidiary companies.

However, negative things were also shared by the staff where responsibility is an issue:

“Sometimes certain departments they do not understand and we didn’t get enough support in order for us to fulfil the needs” (Academic Staff 12).

The absence of career development is another negative factor faced by the staff:

“Then the other thing is that the negative side here is we don’t have the clear career path. Whereby I think HR should take this responsibility, should set up the

guidelines umm the career path staff here. We don't have clear career path here.”
(Academic Staff 16).

Furthermore, the top management interferences are seen as a negative factor faced by the staff:

“Because we have we are a subsidiary to a conglomerate company so too many interference from the higher-ups sometimes causing us difficulty to move rapidly as in the education field is hard” (Administration Staff 2).

4.10.4 Staff's Subjective Norms and Sustaining Competitive Advantage

In terms of subjective norms, most of staff said no that people important to them think that they should work in DRB-HICOM U:

“I don't believe, my family they don't believe...DRB-HICOM U is everything”
(Academic Staff 10).

“No one person ever said such to me” (Administration Staff 12).

Yet, some of the family members and superiors believed that they should work in DRB-HICOM U. The statement is as follows:

“My family would say that I am lucky to be working with DRB-HICOM U since it's very convenience to me, location wise and then as it is under university there are lots of things that we can actually grow from there” (Administration Staff 13).

“My superior said that my department need me really needed me to stay here”
(Administration Staff 16).

4.10.5 Staff's Perceived Behavioural Control and Sustaining Competitive Advantage

For perceived behavioural control, the staff described it as easy and not easy with the working environment in DRB-HICOM U. It is expressed through the following statements:

"Sometimes easy and sometimes it is not and easy if you know what you know what you want to do what you have to do...clear direction" (Academic Staff 12).

"Sometimes its easy sometimes is difficult depends on what kind of task we received" (Academic Staff 15).

"It is not hard and not easy but there are challenges to this work sometimes I feel there are pressures" (Administration Staff 7).

Several things influenced the staff to work in DRB-HICOM U, including job satisfaction, DRB-HICOM U's location, benefits, working environment, family and friends and the uniqueness of DRB-HICOM U. Most of the feedback given by the staff was on the working environment as well as family and friends, as follows;

"The environment, the area because I am not the one work in urban area because I am from there and I want more relaxed place and my husband and me decide to stay here for long term" (Academic Staff 14).

"As for me the things that can influence me to work here at DRB-HICOM U because of the teamwork between staff here. And also here in DRB-HICOM U, I can obtain knowledge and learn new things almost every day. So that's what I like about my job" (Academic Staff 16).

While for the family and friends, the remarks are as follows:

"Family and friends" (Academic Staff 6).

"If you asked me, of course family" (Academic Staff 13).

"I think my family because I like to be in the teaching world" (Academic Staff 10).

The intention to sustain competitive advantage refers to the intention to continue working in DRB-HICOM U by having technological capability. Some of the staff made the following statements:

“Yes because I believe it can grow in the future and they will utilize the technology same like other University, student’s registration, student’s records. Perhaps one day our system is going to be as efficient as other University systems” (Academic Staff 12).

“So when our technology is good, for us to soar can be easy. Because we are already famous for our technology. So that is our advantage” (Administration Staff 15).

“We are one of the pioneer la in Automotive college so our aim is to be one of the best automotive institution. Probably in Asia region. So we should be proud lah to represent DRB-HICOM U” (Administration Staff 5).

In addition, the intentions to embed technology in their daily tasks were also described by the staff as follows:

“Yes I use technology in my teaching usually. The one that usually I use is laptop, projector and maybe...because technology is changing right. So hope that with the changes of the technology, DRB-HICOM U also will change. Same with the technologies have now” (Academic Staff 14).

“Yes, sure..to expedite the process” (Academic Staff 9).

“I would like to embed technology to simplifying my task” (Academic Staff 7).

“It will help in saving time” (Administration Staff 15).

It is also perceived that technological capability is important for DRB-HICOM U to sustain its competitive advantage. The staff described it as follows:

“Technological capability is important if you talk about engineering use a lot of things but for us there is technology that is important though it’s limited but it helps in teaching and also completing other tasks daily...daily tasks” (Academic Staff 14).

“As we are in the millennia era, of course, yes. As for the students also it can be a very good selling point. For example nowadays we can see a lot of University giving away iPads, if we can do that also, we can do that as a marketing strategy” (Academic Staff 13).

“To sustain the competitive advantage because potential students might be attract to the latest technology we have here compare to other institution” (Academic Staff 17).

“For me yes of course the technology is quite important for DRB-HICOM U, DRB-HICOM U to sustain its competitive advantage because of in order for us to compete with other university of course we should have the software and the system, especially the latest software, the latest version. So it’s easier for academician, and it’s easier for the admin staff to complete their task to complete their responsibility, to fulfil their responsibility” (Academic Staff 15).

In a nutshell, Attitude and Perceived Behavioural Control have a relationship with the intention of DRB-HICOM U towards sustaining its competitive advantage. Conversely, Subjective Norms has no relationship with the intention of DRB-HICOM U towards sustaining its competitive advantage.

4.10.6 Technological Capability Perception and Sustaining Competitive Advantage

The second research question is: *What is the moderating effect of technological capability perception in the relationship among attitude, subjective norms, perceived behavioural control and intention of DRB-HICOM U towards sustaining competitive advantage?* The staff said that they use technology daily to complete their tasks.

Some of the respondents’ feedback is as follows:

“The easy one is computer, hand phones, projector and also some of the items in the lab, tools and etc” (Academic Staff 8).

“Systems MOODLE, CMS and of course all of the software provided in our laptop and of course the internet software such as Dropbox, our blogs and but then for our systems I think we have to make sure the system in comprehensive enough so that our daily task can be done in a more proper manner and smoothly” (Academic Staff 12).

“Maybe for FOE we used engines, gearbox, and also robotic engineering” (Academic Staff 11).

“Machines related to my programme. Vehicle inspection machines” (Academic Staff 7).

“IT technology, we are using Windows, e-learning, E-Brary, we are using some sort like CAVIS system, for vehicle inspection and sometimes use not that high tech tools that we use during practical class” (Academic Staff 9).

“Yes, I do. I am using e-learning portal and all those Microsoft office, tools to execute the task. Basically that’s all the things that I use” (Academic Staff 5).

In fact, most of the staff perceived technological capability was important to DRB-

For HICOM U to sustain its competitive advantage, the following remarks were made:

“Nowadays technology is a must and there is no exclusion for our University if the University wants to grow and want to have more students..ok, using technology is a must. Through the marketing, through the website, to satisfy our current students, the company must put extra attention under technologies” (Academic Staff 12).

“Really need the technology to increase our competitiveness level because of somehow we need technology in order to promote our new university” (Academic Staff 14).

“Technology very important things to umm technology is very helpful to us aaa to aa compete with other universities” (Academic Staff 15).

“Same I think like compared to other university or college outside there, DRB-HICOM U have the advantage in terms of practical session. We use quite high technology, and basically all those technology, comes from industry directly so if we want to manage such tools and equipment that is very difficult to get outside” (Academic Staff 11).

“Yup because we are in automotive because we compete with new technologies. One more, time changes, sophisticated technologies so we are more to automotive a lot of use all machine, new robots, all that..not only in Malaysia, the whole worldwide” (Administration Staff 2).

“Technology is mandatory and the technology that we need for us to sustain our competitiveness. Some universities or other colleges, besides us, business, we are also into automotive. So the technology needs to be update. Not just what is readily

available and we merely sustain, we must always be driven by change and sustain the latest technology” (Administration Staff 4).

“I also think that the technology will have an impact on DRB-HICOM U, it wants to stay competitive. Because as even right now if we want to attract students they are more inclined to technology. Nowadays, physical stuff are not well-received but students are more to technology” (Administration Staff 4).

“Yes, but aaa..I shall say yes cause aaa it speed up all the processes and avoid any delay” (Administration Staff 1).

Therefore, the responses of the participants show that technological capability has a moderating effect in intention of DRB-HICOM U towards sustaining its competitive advantage. The findings show that the usage of technology by the staff can sustain DRB-HICOM U’s competitive advantage.

4.10.7 Change of Management and Ideas of Improvement

At the end of the interview session, the respondents were given an opportunity to raise any ideas or make suggestions for improvement. This was based on the request from management of DRB-HICOM U to include the impact of change management from ICAM to DRB-HICOM U. A few questions were asked to obtain feedback from the respondents. In addition, there were also ideas given by the participants. The ideas was given based on several categories: focus on marketing, teaching and learning, upgrade facilities, training, benchmarking with other universities, management support, relationship gap and decision-making.

The first question was what is your greatest concern or fear about the change process. The respondents’ feedback was categorized into concern, fear, sharing good things

and no change. The staff were concerned because there are still many things to be improved after moving:

“Ok, on the other side is good because we are moving forward to a better institution but the way is quite challenging. The road is quite tough and besides we change, the top management change is also giving a big impact to us because every time the top management change the vision, mission also will change. So everything is going to be changed. So it’s not clear. We don’t have a clear direction” (Academic Staff 12).

“Furthermore I believe we also need to upgrade our facilities. Either for students or for staff because the staff itself they need to have a very strong platform or strong system to make sure that the daily process will be shared with other departments. If we can have that, we can actually close the communication gap between departments” (Academic Staff 13).

“For the faculty of Engineering, we have, we need to have our own management, we need our own some sort like procedure so that we don’t have to go straight to top management, will take a longer time and then may take what we call that step by step approval. It’s very difficult” (Academic Staff 9).

“From a college to University, changing of people, changing of technology, changing of team. So need to re-learn with new people. For the seniors we know how is their attitude, we know how what he wants, we are already familiar with their antics. With the new staff, we need to learn, teach new ways, but it’s a good thing. New people, new experience” (Administration Staff 12).

In terms of fear, the participants responded as follows:

“The road is quite tough and besides we change, the top management change is also giving a big impact to us because every time the top management change the vision, mission also will change. So everything is going to be changed” (Academic Staff 12).

“I would say I am a bit uncomfortable because as history shows every changes comes, new management comes in they never look into bigger picture before they do the changes. And furthermore they didn’t take consideration into the current situation before they want us to move to new direction” (Administration Staff 13).

“As for me I’m feeling good but at the same time I’m also feeling stressful because of it’s quite fast actually we transform from college into university. Because once we become university there is a lot of things we need to set up and there is a lot of things

we need to restructure back that suitable to suit into university status. It's good but it's also quite stressful actually” (Administration Staff 16).

Besides that, some of them mentioned that no changes took place after the transition to University.

“Nothing changed. Same thing” (Academic Staff 2).

“It's just the name changes” (Academic Staff 6).

“Yes, nothing changed” (Academic Staff 1).

“Yes same, only status and name, maybe our image changes, but we are in the same condition. Especially academician maybe” (Academic Staff 5).

“Yaaa, I see that the process change is not significant and as I mentioned earlier, it's not being communicated to the lower level. So we don't know much what is actually happening compared when we are ICAM and now we are DRB-HICOM U. It has been 6 months and we feel the same” (Academic Staff 4).

Likewise, there were some staff who mentioned that they found the change from ICAM to DRB-HICOM U is a good thing. The following statements were shared:

“Just a feeling...I just feel ok, good, the changing is happen so I'm just go with the flow. I just feel good about it” (Academic Staff 14).

Ok I feel also good, for the change process form ICAM to DRB-HICOM U and this is the future planning, basically to move to change from college to university” (Academic Staff 15).

“With the new staff, we need to learn, teach new ways, but it's a good thing. New people, new experience” (Administration Staff 2).

“I feel like certainly good for the institution, meaning we have succeeded to grow to become a University. So meaning in 5 years, we managed to achieve the university status. So it is positive for DRB-HICOM U” (Academic Staff 5).

“This change process is indeed a lot from a college to University. From temporary college to permanent college. From not having SOPs now we have various SOP. We used to not having ISO now we already have ISO. A lot and the management had 2,3

people now it has many staff with various expertise. So many” (Administration Staff 4).

“I’m happy with the change process because of the status upgraded and it has aaa...given a very good impact towards the public..and towards us..public notice our visibility and umm..and looking forward to know more about us..umm..yaa that's all” (Administration Staff 1).

To the question on how they managed their concern and fear, the feedback can be categorized into communication, leadership, no changes, planning, positivity and fear.

In terms of communication, the feedback is as follows:

“What actually we are heading to. I believed this is the thing that should be transparent in the sense that all the staff they know which direction they need to go and what type of contribution are they require to give. As I mentioned earlier, it’s about communication” (Academic Staff 4).

Provide the staff with the clear objectives, so they know what basically they have to do especially the operation parts. Day to day kind of daily decision and definitely towards the end to provide them with the clear rewards. Then this will motivate them actually to achieve objectives” (Academic Staff 1).

“I think that the most important things that when we changed the organization, organization also changed. Organization means the organization chart. When the chart is not right. It’s not proper or established well, so that it will bring a mess for the whole process...” (Academic Staff 9).

In terms of leadership, the remark is as follows:

“We need a good leader because leader it’s just not instructed the staff should do but basically to guide towards vision and mission. Very visionary and inspiring as well. Let’s work together..you do this, you do that..they need to guide.. not instruct” (Academic Staff 4).

In terms of no change, the remarks are as follows:

“Because not so many changes, so..as usual” (Academic Staff 6).

“We managed it well” (Academic Staff 4).

“It should be from management because we know that have a like town hall and some other discussion between management and staff because until now we didn’t see any big changes so looking forward for changes especially in academic maybe; flexi hours maybe benefits that deserve to staff to get it, in other salary maybe” (Academic Staff 5).

In terms of planning, the remarks are as follows:

“For me to manage the change process, I will say maybe we need to have few discussion like in terms of planning, so strengthen our work during our difficulties time, especially a lot of change especially from college to the university. Find out the best way to correct way of communication skill to avoid miscommunication. Only that” (Academic Staff 10).

“I believe that the management would have very good planning as DRB-HICOM U as University. However, I think that I’ve seen nothing has been cascade down, explained to all the members of the University. I believed this is the thing that should be transparent in the sense that all the staff they know which direction they need to go and what type of contribution are they require to give” (Academic Staff 4).

“With better planning and better planning and aaa less necessary involvement for those who for..for those not belongs to this organization. There’s many people that the processes they have they own thoughts they own idea and has slower down the processes..so we do planning we have to send to various of people for approval and each of them have different thoughts and different idea and there’s some frictions in the management as well” (Administration Staff 1).

In addition, some staff managed their concern and fear positively:

“For me I guess, I just go with the flow, superior changes, bosses change, we just need to fulfil what we need to do. Because I think for academician is ok because we are not dealing with more to the policies and bosses or superior, we do ourselves, we know what we need to do. It’s not..not so much changes. It’s just a bit of policy changes, but for me yes..go with the flow” (Academic Staff 1).

“As the name change process implies we must learn, that is, we must self-explore, a good boss will show how the process needs to be done, like this, like this. This one, with correct command the resources can be easier lah. But so far, I can manage lah,

so far my friend outside IPT, who can help us, can guide us on how to do it. Like that” (Administration Staff 3).

“To me, there are two changes, one is to become worse or another is to be better. Of course, what we choose is always to be better. So using the right means, of course, we want the change to make us better. So if the means are inappropriate for us, push it aside, but if the change is a process, meaning can make us more mature and make us better, competitive, the process should be sustained lah” (Administration Staff 4).

The change process can be improved in the following areas:

- **Improve Skills & Knowledge**

“Meaning that the skills and expertise of the certain groups needs to be included in area of the change. For example for technical, so for sure the technical member should be there” (Academic Staff 1).

“DRB-HICOM U should increase number of staff, which is I believe if we have more staff with good experience with good qualifications, anything related to academic, related to academic institution that I believe the process, the changing process, is much easier” (Academic Staff 16).

“I think that, from this how we can improve is we give the empowerment to the management or to those needs the empowerment. Right now everybody is not ready to make decision, so that everybody is lost that people are not aware of what they are doing. So if the empowerment is given to the person, that we can guide the decision important in our daily works. So I think that is the most important thing” (Academic Staff 9).

“For me myself because working with a management team that we can observe if possible lah, we go through, we improve our management, should be the instruction come from one person. Its not like this person says this, then we have to do it, that person says that, then we have to change and we need to work on the project.” (Academic Staff 2).

- **Benchmark**

“Change process can be improved, benchmarking with other university because DRB-HICOM U very new though to improve the changes” (Academic Staff 15).

“We ourselves need to be open, meaning we have to be receptive, accept available options. Because sometimes when they give us suggestions, if we do know the suggestion is suitable for good, why not we accept them first and then we process, we

cannot just simply reject, most importantly we need to be open. More receptive” (Administration Staff 1).

“I share the same view we must be open to people’s criticisms, try to improve with time. Furthermore, within the company, communication, telephone breakdown all that if possible should be avoided. Sometimes the higher-ups would say things differently, his staff would say something different. So hopefully everybody gets the same message” (Administration Staff 1).

“As far as I’m concerned the HRMS system that HR uses, is used at a certain level. In the process..there are items and sections that we use..in future..to encourage us, we will provide input like at present the claims are still done manually so we shall improve by using a system. Training, recruitment, and in future and we also have a Performance Management System (PMS)..so in the near future lah” (Administration Staff 7).

“We have to look into other university do benchmarking, how they manage their institution because other university before there was a college so somehow we need to do some research how they manage university how they manage transform from College University. We have to look into system, we have to look into their new structure and then we can do benchmarking. Benchmark and collect some important things that we can apply in our university” (Academic Staff 16).

4.11 Discussion of Findings

In this study, the findings are discussed with reference to the sequence, starting with research questions, research objectives and hypotheses. Specifically, the effects of attitude, subjective norms and perceived behavioural control of students and staff on intention of DRB-HICOM U towards sustaining competitive advantage are examined. Besides that, the moderating effects of technological capability perception in the relationship between attitude, subjective norms and perceived behavioural control and DRB-HICOM U’s intention towards sustaining competitive advantage are investigated. How intention to sustain competitive advantage influences actual behaviour is also examined. In general, out of five hypotheses, only four hypotheses are supported in this study. This study aimed to explore and

ascertain original relationships of the subject discussed. The next section offers a detailed discussion on the findings obtained from the survey and interviews.

4.11.1 The Effect of Staff and Students in Sustaining Competitive Advantage

The first research objective of this study is discussed. Three hypotheses were tested to respond to the first research question. Based on the statistical analysis, it shows that these hypotheses are not fully supported. Specifically, the first and second hypotheses are supported but the third hypothesis is not supported. The following section explains these results.

4.11.1.1 The Effects of Students' Attitude on the Intention of DRB-HICOM U Towards Sustaining Competitive Advantage

The effects of students' attitude on the intention of DRB-HICOM U towards sustaining competitive advantage is found to be statistically significant with a *t*-value of 2.777 at significance level of 0.006 as shown in Table 4.18. According to the results obtained in Chapter 4, it can be concluded that the students' attitude has a positive relationship with DRB-HICOM U's intention to sustain its competitive advantage. Thus, the findings from this study strengthen previous studies related to the students' attitude in TPB. Hence, it can be applied to various settings, for example, in the educations setting. This study is similar to the previous studies conducted in the same environment by Siragusa & Dixon (2009), Nehl et al. (2009), Yang (2013), Heuer & Kolvereid (2014), Cheng & Chu (2014) and Omura et al.(2015).

4.11.1.2 The Effects of Students' Subjective Norms on the Intention of DRB-HICOM U Towards Sustaining Competitive Advantage

For the next independent variable which is subjective norms, it is found that subjective norms have a relationship with DRB-HICOM U's intention towards sustaining competitive advantage. The variable is statistically significant with t -value of 8.527 at significance level of 0.000 as presented in Table 4.19. It can be concluded that subjective norms has a positive relationship with the intention of DRB-HICOM U towards sustaining competitive advantage. In this respect, the findings from this variable support empirical studies related to the TPB and further strengthen previous studies.

4.11.1.3 The Effects of Students' Perceived Behavioural Control on the Intention of DRB-HICOM U towards Sustaining Competitive Advantage

The effects of perceived behavioural control on the intention of DRB-HICOM U towards sustaining competitive advantage are found to be not significant with a t -value of 0.198 at significance level of 0.843. This result is different from previous studies but is consistent with Yang (2013) where PBC was found to not strongly influence intention.

4.11.1.4 DRB-HICOM U Staff Attitude, Subjective Norms and Perceived Behavioural Control Lead to the Intention of DRB-HICOM U towards Sustaining Competitive Advantage.

Table 4.28 shows that staff attitude is predominantly related to the intention of DRB-HICOM U to sustain its competitive advantage. Under the attitude theme, the aspects were categorized into feeling regarding university status, achievement of University status, completing tasks, sharing positive things and sharing negative things. In the first aspect; feeling regarding University status, it is found that most staff expressed positive feelings. The second aspect on the achievement of University status shows neutral feelings mentioned by most of the respondents. In completing tasks, it is found helpful for them most of the time. For the next aspect on sharing positive things, it is found that a lot of positive things are related to the benefits of the University. Likewise, for the last aspect on sharing negative things, people's responsibility was mentioned the most by the staff. Essentially, in the attitude theme, the staff feel positive with the University status achievement even though many were neutral since not many changes have happened but it has helped them to complete their tasks and the University itself benefited. For the second theme, namely subjective norms, it was categorized into two aspects: people important to you think and people believe you think. In the first aspect, majority of the staff said that people important to them said no if they think they need to work in DRB-HICOM U.

In contrast, some of staff mentioned that people have played an important role in their need to work in DRB-HICOM U. It is also based on the stability of the organization that could provide job security to the employees. For the third theme on

perceived behavioural control, two aspects were discussed. The first was on working in DRB-HICOM U where it is found that there are easy and uneasy situations. This is basically due to nature of the task and guidance provided by the superiors. It is more challenging because of the transition from College to University which involves a different and bigger scope of work. On the second aspect as to what were the influential factors to work in DRB-HICOM U, the feedback is closely related to the working environment, including comfort, teamwork among staff and leaning culture in DRB-HICOM U. The majority of staff are locals from Pahang and most of them have been attached to the organization since ICAM's inception in 2010. Therefore, the bond between staff is strong.

Consequently, the intention of DRB-HICOM U towards sustaining competitive advantage examined through these three aspects finds that the staff will continue working with DRB-HICOM U with technological capability as its competitive advantage. Besides, there is positive feedback on their intention to embed technological capability to assist them in their tasks. The staff also perceive it is important for DRB-HICOM U to have technological capability in order to sustain its competitive advantage. As a result, staff attitude, subjective norms and perceived behavioural control have a relationship with the intention of DRB-HICOM U towards sustaining its competitive advantage.

4.11.2 Moderating Effect of Technological Capability Perception on Sustaining Competitive Advantage

The second research objective pertains to the moderating effect of technological capability perception in the relationship among staff and students' attitude, subjective norms and perceived behavioural control and the intention of DRB-HICOM U towards sustaining competitive advantage. The moderating effect is explained separately between students and staff in the following sections.

4.11.2.1 Moderating Effect of Technological Capability Perception in the Relationship among Students' Attitude, Subjective Norms and Perceived Behavioural Control and the Intention of DRB-HICOM U towards Sustaining Competitive Advantage

In this research objective, it is found that technological capability perception moderates the attitude, subjective norms and perceived behavioural control. The statistical results show that the relationship between attitude and technological capability perception is $ATT * TCP (-0.097)$. According to Cohen (1988), the moderating effect size of at least 0.02 can be observed as weak, 0.15 can be observed as moderate and 0.35 can be observed as strong. In this case, there is a negatively weak (-0.097) moderating effect between attitude and technological capability perception. This shows that technological capability perception does not moderate the intention of DRB-HICOM U towards sustaining its competitive advantage. It may be due to the attitude of the students itself and it is further strengthened by Oh and Gwizdka (2011) where the optimum use of technology in tertiary education, how technology can be used in the class and how it facilitate or

hampers the learning activities, need to be better understood. The teaching staff attitude also influences the effect of students' learning in class. In comparison, students with a negative attitude prevent the teaching staff from utilizing technology in class. The effect of technological capability perception gets lower when there is low attitude towards the intention of DRB-HICOM U to sustain its competitive advantage.

Likewise, technological capability perception gets higher with low attitude towards the intention of DRB-HICOM U to sustain its competitive advantage. This also applies to subjective norms and technological capability perception - SN*TCP (0.014), which is also considered as weak. This could be due to the less exposure and emphasis on the usage of technology among students. The demographics of the students also may have influenced the variance (Nehl et al., 2009). The effect of technological capability perception gets higher when subjective norms towards the intention of DRB-HICOM U to sustain its competitive advantage is high. Similarly, technological capability perception was lower when at high subjective norms towards the intention of DRB-HICOM U to sustain competitive advantage. Last but not least, the moderation between perceived behavioural control and technological capability perception shows a negatively weak (-0.076) moderating effect between perceived behavioural control and technological capability perception. The effect of technological capability perception is lower at high perceived behavioural control towards the intention of DRB-HICOM U to sustain its competitive advantage. On the other hand, high technological capability perception gets higher with low perceived behavioural control towards the intention of DRB-HICOM U to sustain its competitive advantage.

In a nutshell, the technological capability perception has a weak moderating effect on attitude, subjective norms and perceived behavioural control. This shows that the technological capability perception does not moderate the intention of DRB-HICOM U to sustain its competitive advantage.

4.11.3 Moderating Effect of Technological Capability Perception in the relationship among Staff Attitude, Subjective Norms, Perceived Behavioural Control and the Intention of DRB-HICOM U towards Sustaining Competitive Advantage

The feedback received from the staff on the moderating effect of technological capability perception in the relationship of attitude, subjective norms, perceived behavioural control and intention of DRB-HICOM U towards sustaining competitive advantage was divided into two aspects, namely: the use of technology in completing daily tasks; and the effect of technological capability perception. The first aspect found that the staff used technology daily in completing their tasks. Moreover, they agree that technological capability perception has an effect on DRB-HICOM U's intention to sustain its competitive advantage. These findings show that technological capability perception moderates the relationship between attitude, subjective norms, competitive advantage and intention of DRB-HICOM U to sustain its competitive advantage. This study strengthens previous studies on the moderating relationship using TPB by Fairchild and McQuillin (2010) and Zhou et al. (2013). The feedback received show the staff have various perceptions and ideas in relation to technological capability perception where the DRB-HICOM U staff are not

homogenous; nevertheless, they were differentiated through individual values, etc. (Zhou et al., 2013).

4.11.4 The Mediating Effect of Intention of DRB-HICOM U in Sustaining Competitive Advantage

The intention of DRB-HICOM U towards sustaining competitive advantage has a mediating effect in the relationship between attitude, subjective norms, perceived behavioural control and actual behaviour in this study. It is found that attitude and subjective norms have a strong mediation relationship compared to perceived behavioural control and actual behaviour. This shows that the students' attitude and subjective norms have a direct effect on the actual behaviour. It shows that without the intention of DRB-HICOM U, the students are still interested in the programmes related to automation. Unlike perceived behavioural control, it shows the students still have a control over their actions to be or not to be in the automotive programme.

4.11.5 The Influence of Intention on DRB-HICOM U towards Sustaining Competitive Advantage on the Actual Behaviour.

The influence of intention of DRB-HICOM U towards sustaining competitive advantage on the actual behaviour is found to be significant with statistical results of *t*-value of 5.801 at significance level of 0. In this context, it shows that intention of DRB-HICOM U towards sustaining competitive advantage has an influence on the actual behaviour. This is supported by previous studies related to the TPB.

4.11.6 Change of management impact on DRB-HICOM U staff in sustaining competitive advantage

Based on the focus group interviews with academic and administration staff, there were mixed feelings involved in the change of management process. The feedback received is categorized into the following areas:

4.11.6.1 Top Management Role

The feedback given by the staff is related to the role of top management where the staff found the change of management was hard for the staff due to lack of clear directions, frequent changes of top management, university policy, set-up, bureaucracy in decision-making and absence of change of management processes for the staff. The staff also felt fear due to change of top management, vision and mission, where they were unable to see the bigger picture ahead. With the fast transformation, a lot of things had to be restructured to suit university status. Good things also happened for DRB-HICOM U where transition from College to University, brought in new colleagues and had a good impact on the public. Likewise, there were some staff who felt that no changes happened in DRB-HICOM U because the change process was not properly handled by the management. This is another setback for the top management of DRB-HICOM U. Above all, a strong leadership is required to move DRB-HICOM U forward.

4.11.6.2 Communication

Another area highlighted by the staff is poor communication between top management and lower level management. Without clear objectives and organization chart, it leads to ineffectiveness of daily operations and decision-making. There is a need to discuss among staff in terms of planning, particularly for the change from College to University. Inevitably, the staff will understand their role and responsibility in DRB-HICOM U. At the same time, some of the staff feedback positively highlighted that the change can be managed positively by working independently. The ability to adapt to the new environment is very significant.

4.11.6.3 Process Improved

Even though some of the staff commented on the change management process, others explained that the change process can be improved by improving skills and knowledge of the staff. This can be implemented through empowerment of the staff and leaders in the organization. Improved Standard Operating Procedures must also be provided to the staff as a guide. Many improvements need to be done by DRB-HICOM U. Since DRB-HICOM U is considered as a young University, the change process can be improved by benchmarking with other universities, providing avenues for suggestions and becoming more receptive to criticisms.

4.12 Summary of Qualitative Data Findings

The focus group interview was conducted to determine the attitude, subjective norms and perceived behavioural control of staff towards the intention of DRB-HICOM U

to sustain its competitive advantage. The findings from the focus group interview are presented in Table 4.28.

Table 4.28
Summary of Propositions

No.	Propositions	Key Areas	Findings
1.	DRB-HICOM U staff and student attitude, subjective norms and perceived behavioural control lead to the intention of DRB-HICOM U to sustain its competitive advantage	<p>a. Attitude – Intention to Sustain Competitive Advantage</p> <p>b. Subjective Norms – Intention to Sustain Competitive Advantage</p> <p>c. Perceived Behavioural Control – Intention to Sustain Competitive Advantage</p>	<p>Attitude is positively related to the intention of DRB-HICOM U to sustain its competitive advantage.</p> <p>Subjective Norms is negatively related to the intention of DRB-HICOM U to sustain its competitive advantage.</p> <p>Perceived behavioural control is positively related to the intention of DRB-HICOM U to sustain its competitive advantage.</p>
2.	Technological capability creates a moderating effect in the relationship between attitude, subjective norms and perceived behavioural control in intention of DRB-HICOM U to sustain competitive advantage.	Technological Capability Perception – Intention to Sustain Competitive Advantage	Technological Capability Perception positively moderates the intention of DRB-HICOM U to sustain its competitive advantage.

The network map for this qualitative study is presented in **Appendix M**.

4.13 Summary of Findings

A Private HEI's survival basically depends on the number of students. Other factors include the teaching staff, the teaching and learning facilities and other facilities provided by the institution. Essentially, in order for an institution to sustain its competitive advantage, it needs to create its own niche market (Dickson & Ginter, 1987). In the case of DRB-HICOM U, since it offers programmes related to the automotive industry, it requires specific technological tools to assist in teaching. Therefore, this study examines the perception of technological capability among students and staff to understand the significance of sustaining DRB-HICOM U's competitive advantage. Even though education institutions face many challenges, the study only focuses on the technological capability perception of staff and students. The summary of the findings of both quantitative and qualitative research, are presented in Table 4.29.

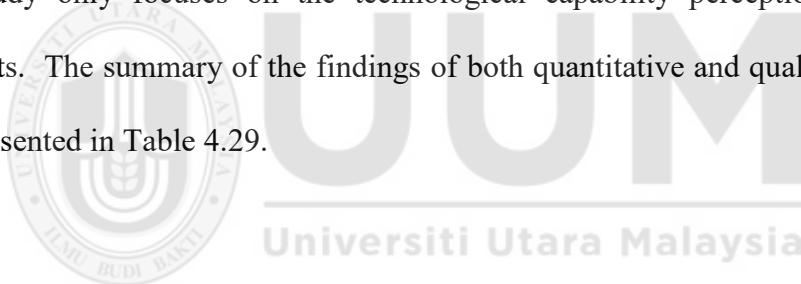


Table 4.29

Summary of Findings

No.	Problem Statement	Research Questions Statement	Research Objectives Statement	Hypotheses Statement	Proposition Statement	Remarks
1.	Student attitude, subjective norms and perceived behavioural control have effects on intention of DRB-HICOM U towards sustaining competitive advantage.	What is the relationship between student attitude, subjective norms and perceived behavioural control and the intention of DRB-HICOM U towards sustaining competitive advantage?	To investigate the relationship of staff and students' Attitude, Subjective Norms and Perceived Behavioural Control and the intention of DRB-HICOM U towards sustaining competitive advantage.	<p>H₁: There is a positive effect of DRB-HICOM U staff and students' ATT, SN and PBC on the intention of DRB-HICOM U towards sustaining competitive advantage.</p> <p>H₂: There is a positive effect of DRB-HICOM U staff and students' SN on the intention of DRB-HICOM U towards sustaining competitive advantage.</p> <p>H₃: There is a positive effect of DRB-HICOM U staff and students' PBC on the intention of DRB-HICOM U towards sustaining competitive advantage.</p>		<p>Supported</p> <p>Supported</p> <p>Not Supported</p>
					P ₁ : DRB-HICOM U staff's ATT, SN	ATT – Supported

No.	Problem Statement	Research Questions Statement	Research Objectives Statement	Hypotheses Statement	Proposition Statement	Remarks
					and PBC lead to the intention of DRB-HICOM U to sustain competitive advantage.	SN – Not Supported PBC – Supported
2.	Technological capability perception may have some effects on DRB-HICOM U in sustaining competitive advantage.	What is the moderating effect of technological capability perception in the relationship among attitude, subjective norms, perceived behavioural control and intention of DRB-HICOM U towards sustaining competitive advantage?	To investigate the moderating effect of technological capability perception in the relationship among attitude, subjective norms and perceived behavioural control and intention of DRB-HICOM U towards sustaining competitive advantage.	H ₄ : There is a moderating effect of technological capability perception on the relationship between attitude, subjective norms and perceived behavioural control on intention of DRB-HICOM U towards sustaining competitive advantage.		Supported
					P ₂ : Technological capability perception creates a moderating effect in the relationship between ATT, SN and PBC and intention of DRB-HICOM U towards	Supported

No.	Problem Statement	Research Questions Statement	Research Objectives Statement	Hypotheses Statement	Proposition Statement	Remarks
					sustaining competitive advantage.	
3.	Attitude, subjective norms and perceived behavioural control mediate actual behaviour and the intention of DRB-HICOM U to sustain its competitive advantage.	Does intention of DRB-HICOM U towards sustaining competitive advantage mediate the relationship of attitude toward behaviour, subjective norms, perceived behavioural control and actual behaviour?	To investigate the mediating effect of intention of DRB-HICOM U towards sustaining competitive advantage on the relationship of attitude, subjective norms and perceived behavioural control and actual behaviour.	H ₅ : There is a mediating effect of intention of DRB-HICOM U towards sustaining competitive advantage in the relationship between attitude, subjective norms, perceived behavioural control and actual behaviour.		Supported
4.	Sustaining competitive advantage may influence the actual behaviour of the staff and students.	Does intention of DRB-HICOM U towards sustaining competitive advantage influence the actual behaviour?	To investigate the influence of intention of DRB-HICOM U towards sustaining competitive advantage and actual behaviour.	H ₆ : There is an influence on intention of DRB-HICOM U towards sustaining competitive advantage and actual behaviour.		Supported

No.	Problem Statement	Research Questions Statement	Research Objectives Statement	Hypotheses Statement	Proposition Statement	Remarks
5.	Change of Management from College to University status may have an impact on the DRB-HICOM U staff	Does the change of management have an impact on DRB-HICOM U staff in sustaining competitive advantage?	To investigate the DRB-HICOM U staff's concern and how to overcome changes that have happened in DRB-HICOM U.			DRB-HICOM U staff have mixed feelings - positive and negative on the change from College to University.

Note. ATT=Attitude, SN=Subjective Norms, PBC=Perceived Behavioural Control, H=Hypothesis, P=Proposition



According to the first research objective, this study finds that attitude and subjective norms have a relationship with the intention of DRB-HICOM U towards sustaining competitive advantage. However, perceived behavioural control has no relationship with the intention of DRB-HICOM U towards sustaining competitive advantage. The statistical results show that of the three relationships, only two are statistically significant, i.e. Hypothesis 1 and Hypothesis 2. Based on the second research objective, statistical results reveal that technological capability perception has a moderating effect in the relationship among attitude, subjective norms and perceived behavioural control and the intention of DRB-HICOM U towards sustaining competitive advantage. This supports the fourth hypothesis on the moderating effect in this study. With regards to the third research objective, the intention of DRB-HICOM U towards sustaining competitive advantage has an influence on the actual behaviour. This explains the fifth hypotheses. It is found that the intention of DRB-HICOM U towards sustaining competitive advantage influences the actual behaviour of the students. In the next section, the results of the survey and interviews are discussed in-depth to see whether the results of this study support the hypotheses.

4.14 Chapter Summary

The focus group interview session represented the significant of triangulation findings for this study. This enabled an in-depth understanding of the relationships between the variables of this study. The findings from the interview session with DRB-HICOM U staff complements the findings collected from DRB-HICOM U students. Further discussion and conclusion of this study are presented in the following chapter.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter discusses the conclusion and recommendation for this study. Besides that, the implications of this study, both theoretical and practical, are also discussed. The limitations of this study and recommendations for further research are also presented. At the end of this chapter, the conclusion of this study is presented.

5.2 Implications of the Study

The combined findings from this study can add to the existing body of knowledge on the TPB. The impact or contributions of this study can be divided into two: theoretical implications (academic implications) and practical implications (managerial implications). In this context, the theoretical implications cover three areas: empirical, conceptual and methodological implications. From the academic perspective, the implications of this study add value to the current knowledge in the field. Likewise, from the organizational perspective, the intention to sustain competitive advantage as indicated through survey results and interviews is significant for any education institution to improve or achieve higher operational performance.

In this study, the review of previous studies was used to establish the research framework and provide relevant ideas. The TPB has been used by various fields of study, including weight reduction, engagement with recreation exercises, probability

of committing criminal traffic offenses, readiness to vote and give blessings (Abelson et al., 1982; Ajzen & Timko, 1986; A. I. & D. B, 1991; Hrubes et al., 2001). In the setting of education, the areas covered include entrepreneurship, e-commerce education, enrolment into business ethics programme, innovative learning-based IT and ICT-based learning interaction (Afework et al., 2015; Cheng & Chu, 2014; Dodor & Rana, 2009; Feng-Kuang et al., 2009 & Siragusa & Dixon, 2009).

This study was conducted on students and staff with the objective of examining the related variables using the TPB. Besides that, the intention of DRB-HICOM U to sustain competitive advantage was deliberated through studies on quality and standards for global higher education, global market for higher education, organisational culture in higher education, intellectual capital, sources of competitiveness and business model for higher education (Dargenidou, 2013; Kamukama, 2013; Mazzarol, 2012; Tian & Martin, 2014 & Yorke & Yorke, 2006). The moderator, technological capability perception, was established from the following studies: moderating impact of industry technological opportunities, country's technological capabilities, implementation of technology in university, utilizing instructional materials, technological capability for a new venture, incorporating innovation to advantage students future and technology used in education (Anand & Kogut., 1997; Elzarka, 2012; Kajuna, 2009; Kraebber H.W, 2008; Zahra, 1996 & Zou et al., 2010).

Previous studies on the TPB in education, sustaining competitive advantage and technological capability perception were used to develop measurement scales for this study. As a result, this study is able to contribute significant findings to the existing

body of knowledge through its moderator, technological capability perception. The findings from the previous studies strengthened the research framework. Previous studies have been conducted in various environments and situations. In this study, the empirical evidence was collected from the education industry.

Generally, this study is in line with the TPB theory and addresses attitude, subjective norms and perceived behavioural control and intention that lead to actual behaviour. The TPB is applied in the study to understand students' behaviour towards intention that leads to actual behaviour in an educational institution set-up (Afework et al., 2015; Dodor & Rana, 2009; Cheng & Chu, 2014; Feng-Kuang et al., 2009 & Siragusa & Dixon, 2009). As for the private HEIs, sustainability in the market is vital to ensure the continuity of existence in the education industry. Thus, the intention to sustain competitive advantage is important to DRB-HICOM U as a private HEI (Mazzarol & Soutar, 2002; Mazzarol & Soutar, 1999 & Tim Mazzarol, 2012). Since DRB-HICOM U focuses on the needs of the automotive industry and is still new in the education industry, technological capability perception is used to understand the relevance of technology to the institution (Elzarka, 2012; Zou et al., 2010). The ideas generated from the TPB and findings help in the present-day thinking on the relationship between attitude, subjective norms, perceived behavioural control and intention to sustain competitive advantage using technological capability perception as moderator, ultimately leading to the actual behaviour. This has given added value to the existing body of knowledge through the all-inclusive framework.

The instruments used for survey in this study measure six significant elements, namely attitude, subjective norms, perceived behavioural control, intention to sustain competitive advantage and actual behaviour. The instruments used were determined through validity and reliability statistical testing. Even though some elements are not significant, it is quite similar to findings of previous studies conducted in various set-ups. Thus, future researchers interested in conducting studies in similar areas may need to leverage on the measurement instruments used in order to establish an improved theoretical framework. Normally, any study using the TPB is free to choose either quantitative or qualitative method. Both methods can generate findings required to meet the objectives of the study by the researcher. In this study, the quantitative method was used for data collection for DRB-HICOM U students and qualitative method was used for DRB-HICOM U staff. The exploratory method managed to give a triangulation analysis of feedback by both groups of respondents. The triangulation on the research findings contribute to the present body of knowledge through detailed explanation, interpretation and understanding collected from quantitative data analysis (Creswell, 2014). The said method has a different impact in validating the findings related to the TPB. Essentially, future researchers would be able to adapt the same method to have better justification for their studies.

Traditionally, previous studies conducted using TPB have used earlier statistical analytical techniques, for example SPSS or AMOS. Ideally, with the recent trends of statistical data analysis techniques, SmartPLS v3.2.4 was used as the main analytical instrument. It is meant to evaluate the hypothesis relationship between the elements or constructs. The reasons behind using this statistical analysis are it can predict ability, complexity of the model, insignificant sample size, non-normal data

distribution and various types of scales (Hair et al., 2013; Henseler et. al., 2009). Inevitably, the researcher considered PLS-SEM as the right statistical analysis instrument to use in order to conduct the hypothesis testing for this study.

This research study has both theoretical (academic) and practical (managerial) implications. The findings obtained from this study contribute to managerial practices in the following ways: (i) explains DRB-HICOM U staff and students' behaviour and attitude; (ii) provides input to the DRB-HICOM U strategic direction plan; and (iii) prepares DRB-HICOM U for the future. It can also be adopted by any education institution having similar characteristics or moving towards a similar direction. Based on the interviews with academic and administration staff, technological capability is significant for an academic institution. Apart from that, the staff also agreed that technological capability would be able to sustain DRB-HICOM U's competitive advantage. The TPB has been conceptualized according to the level of knowledge of the respondents since most of the respondents lacked understanding of the theoretical framework of the study. The students' relationship among attitude, subjective norms and perceived behavioural control and intention to sustain competitive provide understanding on the students' behaviour. In addition, this study facilitated the staff to understand the importance of technological capability perception to sustain competitive advantage for DRB-HICOM U.

In relation to technological capability, it also showed potential links between academia - industry. Both could cooperate in various ways, such as in consultation, acquiring additional funding for research and teaching programmes and infrastructure (Mazzarol, 2012). DRB-HICOM U must be persistent with technology

so that it ensures that DRB-HICOM U is always ahead in delivering the best quality education. Technical expertise or subject matter experts are needed to advise on latest technology used in the industry. This may bring DRB-HICOM U to a different level in offering academic programmes.

5.3 Limitations of the Study

This study faced some limitations that need to be addressed. The limitations are typically related to the methodology as well as to generalizability of the study. Primarily, the limitations were caused by time and financial constraints. In this study, the methodology limitations somehow affected the findings of this research. In the earlier chapters, there was no solid evidence on similar research conducted by previous scholars. No appropriate and suitable measurement was available. As a result, lack of prior research studies led to some limitations for this study which opted to use the TPB. However, the limitations were acknowledged by the researcher and she decided to continue with the research to contribute to the body of knowledge for academicians as well as industry practitioners.

The next methodological limitation was the time frame or duration. This is related to the time of students and staff of DRB-HICOM U. The students' time was very tight and very limited time was available to distribute the questionnaire. Sometimes, class cancellation without prior notice also led to time wasted without obtaining any data. There was also lack of cooperation and feedback from the class lecturers. It was also difficult to gather and schedule the DRB-HICOM U academic and administration staff for the focus group interview. Even though an email invitation was sent two

weeks prior to the session, only few staff were willing to cooperate and turned up for the session. In order to overcome this limitation, a reminder through telephone call and emails was done prior to the interview session. However, some of the staff still failed to turn up due to job priority. Inevitably, collecting both quantitative and qualitative data led to time constraints for the researcher. Apart from that, the other methodological limitation is the sample size. The sample size may affect the study where if the sample size is small, it might be difficult to discover significant relationships from the data obtained. The statistical tests basically require bigger sample size in order to make sure of a representative distribution of the population to be generalized. In this study, the sample size of the students and the number of staff who participated in the study is small. Only students from three programmes were selected for this study and majority of the students are male students. In overcoming this limitation, PLS-SEM was used to analyse the quantitative data since it is recognized as being able to yield reliable results using small sample sizes (Hair et al., 2014; Henseler et al., 2009).

As described in the scope of this study, this study was conducted in only DRB-HICOM U. Hence, the generalization on any other industry is not relevant and the findings cannot be applied to other countries as well. In addition, the findings were only from the respondents of one organization on attitude, subjective norms, perceived behavioural control, actual behaviour, technological capability perception and intention towards sustaining competitive advantage in the context of that organization. Thus, it is difficult to make generalizations.

5.4 Recommendations for Future Research

Based on the results of the findings obtained through triangulations of this study, technological capability perception is very important for sustaining competitive advantage for education institutions. As for recommendations for future studies, technological capability perception can be used as a variable between attitude, subjective norms, perceived behaviour control, actual behaviour and intention to sustain competitive advantage in other industries as well. With regards to the semi-structured interview results, it is found that technological capability perception is a probable moderating variable which can be used to measure relationships between attitude, subjective norms, perceived behavioural control and intention to sustain competitive advantage. The triangulation results also reveal the significance of the mixed method in the research design of any research. Researchers may adopt the mixed method research design in the future to investigate attitude, subjective norms, perceived behavioural control and intention to sustain competitive advantage using the moderator of technological capability perception. This is because very few studies have been conducted in Malaysia using the TPB in higher education institution. The mixed method research design can give greater understanding on the related problems by using other methods to complement weaknesses found.

Also, future researchers can conduct research on other stakeholders of DRB-HICOM U. Currently, this study was only conducted on students and staff of DRB-HICOM U. The other DRB-HICOM U stakeholders include: parents, DRB-HICOM subsidiaries related to DRB-HICOM U, media, etc. By obtaining ideas and views from the other stakeholders, it may improve the DRB-HICOM U's strategic and

operational levels. As a result, the ability of DRB-HICOM U to attract students can be improved, which in turn, can lead to enhanced financial performance of the organization. Furthermore, to enable generalizability, this study also can be conducted in other industries and countries. The conceptualization, measurement instruments used and generalizability can be increased through the findings.

5.5 Recommendation for DRB-HICOM U

In relation to the practical implications, some recommendations are made for DRB-HICOM U based on the problem statement presented in chapter one. These recommendations might motivate top management of DRB-HICOM U to take proactive action.

In the earlier set up of DRB-HICOM U formerly known as ICAM, it had been communicated that the establishment of ICAM was to meet the human capital needs, by producing automotive experts to address related industry problems. In this case, DRB-HICOM U needs to be established with a good value proposition as part of the marketing strategy. The value proposition is a clear statement of how a company is relevant to its customers, its ability to deliver specific benefits and why the potential customers should engage with the company's products and not the competitors. Each product of DRB-HICOM U must come up with a good value proposition that can be remembered by its customers.

Based on the findings revealed by DRB-HICOM U staff, the transition from College to University status impacted the staff physically and emotionally. Proper change of management was apparently not conducted in the organization. As such, a mix of

feelings was discovered through the focus group interview session, including communication, planning and leadership. Strategic alignment needs to be done to bridge the gap between the high level vision and operational strategies.

Furthermore, in sustaining competitive advantage as an education institution, long-term sustainability is vital. Long-term sustainability can help to ensure the survival of DRB-HICOM U. It must not only depend on the revenue from the existing academic programmes but also from other programmes, for example short courses and public training courses. Besides, cost savings activities need to be done accordingly where some of the operational costs can be reduced based on the existing needs.

Looking at the DRB-HICOM subsidiaries which surround DRB-HICOM U, industry alliances could be the key to DRB-HICOM U's success. DRB-HICOM U can forge ties between the academics and industry because it will benefit the University in terms of funding to the University, particularly on research, academic programmes and infrastructure. As such, leveraging knowledge between academic and industry would open greater opportunities for both parties. DRB-HICOM U, students, staff and industry as the stakeholders can all benefit from industrial linkages.

5.6 Conclusion

In the challenging and volatile education industry, organizations are facing uncertainty to embrace all the challenges. What matters is how good the organization is in managing the stakeholders' interests. Like any other

organizational establishment, the bottom line is profit. This has triggered the importance of sustaining competitive advantage of the organization. In this context, DRB-HICOM U, which offers automotive-related programmes, must use current technologies in the market. This study further investigated students' and staff attitude, subjective norms, perceived behavioural control and intention towards sustaining competitive advantage through the moderating role of technological capability perception.

This study was conducted using mixed method: quantitative and qualitative, to collect data from DRB-HICOM U students and staff. Out of five hypotheses presented, three hypotheses are supported, one is partially supported and one not supported. Previous studies have highlighted the importance of possessing technological capability to sustain competitive advantage. Only students' attitude and subjective norms have relationship with DRB-HICOM U's intention towards sustaining its competitive advantage. In contrast, the students' perceived behavioural control does not have any relationship with the intention of DRB-HICOM U towards sustaining its competitive advantage. The intention of DRB-HICOM U towards sustaining its competitive advantage influences the actual behaviour of the students to embed with DRB-HICOM U. This is in contrast to the findings on the DRB-HICOM U staff, where it is found that subjective norms does not have any relationship with the intention of DRB-HICOM U towards sustaining its competitive advantage. The moderating role of technological capability perception makes a small significant impact. The limitations of this study centre on the lack of prior research, time constraints and small sample size.

Conclusively, this study has contributed to the literature on the TPB and the intention to sustain competitive advantage through the moderating role of technological capability perception. It is hoped that the findings from this study would benefit DRB-HICOM U, specifically, and the education industry, as a whole. The recommendations for the future studies give some ideas to improvise this study. The recommendations to DRB-HICOM U give insightful thoughts for management to undertake some measures to bring DRB-HICOM U to greater heights of excellence.



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APPENDICES

Appendix A: Board of Ethic DRB-HICOM U Approval

12 January 2015

Dr. Richard Jan Pech
Head of Graduate School
DRB-HICOM University of Automotive Malaysia
Lot 1449, PT 2204, Peramu Jaya Industrial Area
26607 Pekan
Pahang Darul Makmur

Dear Associate Professor Dr. Richard,

RE: Permission to Conduct Research Study

I am writing to request permission to conduct a research study in DRB-HICOM University of Automotive Malaysia (DRB-HICOM UAM). I am currently enrolled in the Doctor of Management programme at Universiti Utara Malaysia in Kedah, Malaysia and am in the process of writing my PhD. The study is entitled “Technological Capability Perception Towards Sustaining Competitive Advantage & Change Management: A Case Study of DRB-HICOM University of Automotive Malaysia (DRB-HICOM U).”


I hope that the management will allow the academic and administration department to be interviewed through the focus group interview session. The academic and administration staffs who are serving a minimum 1 year will be selected randomly from the Human Resource database. The focus group interview questions as attached in Appendix A.

As for the students, it will be selected from School of Engineering & Technology due to the exposure to the technology in their studies. The students (semester 3 and above) from Diploma in Automotive Service Technology (DST), Diploma in Vehicle Assembly Management (DVA) and Diploma in Vehicle Inspection (DVI) will be selected randomly. The students will be anonymously complete a 4-pages questionnaire as per Appendix B. Both survey and interview session will be conducted concurrently starting from end of February 2016.

If approval is granted, the focus group session will be conducted during the working hours which will be no longer than 1 hour. As for the student participants, they will complete the survey in a classroom at the end of their class. The survey process should take no longer than 15 minutes. The survey results will be pooled for the thesis project and individual results of this study will remain absolutely confidential and anonymous. Should this study be published, only pooled results will be documented. No costs will be incurred by either your school/department or the individual participants.

Your approval to conduct this study will be greatly appreciated. I will follow up with a telephone call next week and would be happy to answer any questions or concerns that you may have at that time. You may contact me at my email address suhaidah@dhu.edu.my.

If you agree, kindly sign below and return the signed copy. Alternatively, kindly submit a signed letter of permission on your institution's letterhead acknowledging your consent and permission for me to conduct this survey/study in DRB-HICOM U.

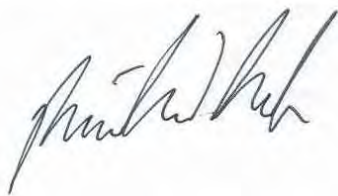

Suhaidah Hussain
Candidate
Doctor of Management



Enclosures

cc: Dr. Halim Mad Lazim, Universiti Utara Malaysia

Approved by:



Associate Professor Dr. Richard Jan Pech

Date: 15 Jan 2016

Appendix B: Questionnaire for Students



Othman Yeop Abdullah
Graduate School of Business
Universiti Utara Malaysia

Dear Sir/Madam,

Subject: TECHNOLOGICAL CAPABILITY PERCEPTION TOWARDS SUSTAINING COMPETITIVE ADVANTAGE & CHANGE MANAGEMENT: A CASE STUDY OF DRB-HICOM UNIVERSITY OF AUTOMOTIVE MALAYSIA (DRB-HICOM U)”

Congratulations! You have been selected to participate in a continuous improvement study. The purpose of this survey is to investigate the students and staff perception of technological capability towards sustaining competitive advantage and change management of DRB-HICOM University of Automotive Malaysia (DRB-HICOM U).

The questionnaire contains approximately 33 questions and can be completed in less than 25 minutes. It is not a test to examine your intelligence. Kindly provide genuine answers. Your participation is on a voluntary basis and you may withdraw at any time without consequence. All responses remain strictly confidential and no names will be linked with the final data.

If you have any question, please contact me at 012-5774114 or through email at suhaidah@dhu.edu.edu.my.

Thank you for your participation and cooperation.

Tuan/Puan,

Subjek: PERSEPSI KEUPAYAAN TEKNOLOGI KE ARAH MENGEKALKAN KELEBIHAN DAYA SAING & PERUBAHAN PENGURUSAN: SATU KAJIAN KES DRB-HICOM UNIVERSITI AUTOMOTIF MALAYSIA (DRB-HICOM U) "

Tahniah! Anda telah dipilih untuk menyertai kajian penambahbaikan berterusan. Tujuan kajian ini adalah untuk menyiasat pelajar dan kakitangan persepsi keupayaan teknologi ke arah mengekalkan kelebihan kompetitif dan perubahan pengurusan DRB-HICOM Universiti Automotif Malaysia (DRB-HICOM U).

Soal selidik ini mengandungi kira-kira 33 soalan dan boleh disiapkan dalam masa kurang dari 25 minit. Sila beri jawapan yang sebenar. Penyertaan anda adalah secara sukarela dan anda boleh menarik diri pada bila-bila masa tanpa akibat. Semua maklumat kekal sulit dan tidak ada nama-nama yang akan dikaitkan dengan data muktamad.

Jika anda mempunyai sebarang pertanyaan, sila hubungi saya di 012-577 4114 atau melalui e-mel di suhaidah@dhu.edu.edu.my.

Terima kasih atas penyertaan dan kerjasama anda.

Technological capability is the resources needed to generate and manage technical change. These resources include skills, knowledge, experience as well as particular kinds of institutional structure and linkages necessary to produce inputs for technical change (Bell & Pavit, 1993).

Keupayaan teknologi adalah sumber yang diperlukan untuk menjana dan pengurusan perubahan teknikal. Sumber-sumber ini termasuk kemahiran, pengetahuan, pengalaman dan juga jenis tertentu struktur institusi dan hubungan yang diperlu untuk menghasilkan input untuk perubahan teknikal (Bell & Pavit, 1993).

**Please tick and circle to represent your answer/
Sila tandakan atau bulatkan untuk mewakili jawapan anda.**

A. DEMOGRAPHIC PROFILE

Gender Jantina	<input type="checkbox"/> Male Lelaki	<input type="checkbox"/> Female Perempuan		
Age Umur	<input type="checkbox"/> 18-24	<input type="checkbox"/> 25-34	<input type="checkbox"/> 35-44	
Race Bangsa	<input type="checkbox"/> Melayu Malay	<input type="checkbox"/> Chinese Cina	<input type="checkbox"/> Indian India	<input type="checkbox"/> Others Lain-lain
Programme Program	<input type="checkbox"/> DST	<input type="checkbox"/> DMS	<input type="checkbox"/> DVA	_____

B. RESEARCH AREA/KAJISELIDIK

INTENTION/NIAT

1. I intend to engage in academic programme that possess technological capability as its competitive advantage.
Saya bercadang untuk melibatkan diri dalam program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing.

Extremely Unlikely/: 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Likely/
Sangat Tidak Mungkin Sangat Mungkin

2. I will try to engage in academic programme that possess technological capability as its competitive advantage.
Saya akan cuba untuk melibatkan diri dalam program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing.

Extremely Unlikely/: 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Likely/
Sangat Tidak Mungkin Sangat Mungkin

3. I very much would like to take academic programme that possess technological capability as its competitive advantage.
Saya sangat ingin mengambil program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing.

Extremely Unlikely/: 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Likely/
Sangat Tidak Mungkin Sangat Mungkin

4. How likely is it that you will take the academic programme that possess technological capability as its competitive advantage?
Bagaimana mungkin anda akan mengambil program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing?

Extremely Unlikely/: 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Likely/
Sangat Tidak Mungkin Sangat Mungkin

ATTITUDE/SIKAP

5. Do you believe that taking academic programme that possesses technological capability would be...
Adakah anda percaya bahawa mengambil program akademik yang memiliki keupayaan teknologi akan menjadi ...

Bad : 1 : 2 : 3 : 4 : 5 : 6 : 7 : Good
Buruk Baik

Foolish : 1 : 2 : 3 : 4 : 5 : 6 : 7 : Wise
Tidak Bijak Bijak

Worthless : 1 : 2 : 3 : 4 : 5 : 6 : 7 : Worthwhile
Tidak bernilai Berbaloi

Irrelevant : 1 : 2 : 3 : 4 : 5 : 6 : 7 : Relevant
Tidak berkaitan Berkaitan

Dull : 1 : 2 : 3 : 4 : 5 : 6 : 7 : Interesting
Membosankan Menarik

SUBJECTIVE NORMS/NORMA SUBJEKTIF

6. Most people who are important to me think that I should engage in academic programme that possess technological capability as its competitive advantage.
Kebanyakan orang yang penting kepada saya berfikir bahawa saya perlu melibatkan diri dalam program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing.

Strongly Disagree/: 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju Sangat Bersetuju

7. It is expected of me that I should engage in academic programme that possess technological capability as its competitive advantage.
Adalah diharapkan daripada saya bahawa saya perlu melibatkan diri dalam program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing.

Strongly Disagree/: 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

8. The people in my life whose opinions I value would approve of my engagement in academic programme that possess technological capability as its competitive advantage.
Orang dalam hidup saya yang pendapat saya akan bersetuju dengan saya terlibat dalam program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing.

Strongly Disagree/: 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

9. Many people like me engage in academic programme that possess technological capability as its competitive advantage.
Ramai orang seperti saya melibatkan diri dalam program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing.

Strongly Disagree/: 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

10. Generally speaking, I want to do what most people who are important to me think I should do.
Secara umumnya, saya mahu melakukan apa yang kebanyakan orang-orang yang penting kepada saya fikir perlu saya lakukan.

Strongly Disagree/: 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

PERCEIVED BEHAVIORAL CONTROL/KAWALAN TINGKAH LAKU YANG DILIHAT

11. How much personal control do you feel you have over whether or not you engage in academic programme that possess technological capability as its competitive advantage?

Berapa banyak kawalan peribadi anda rasa anda punyai sama ada atau tidak anda terlibat dalam program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing?

Complete Control/: 1 : 2 : 3 : 4 : 5 : 6 : 7 : No Control/
Kawalan Sepenuhnya *Tiada kawalan*

12. If I wanted to, I could take the academic programme that possesses technological capability as its competitive advantage.

Jika saya mahu, saya boleh melibatkan diri dengan program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing.

Strongly Disagree/: 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

13. It would be mostly up to me whether or not to engage in academic programme that possesses technological capability as its competitive advantage.

Ia akan menjadi kebanyakannya bergantung kepada saya sama ada atau tidak melibatkan diri dalam program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing.

Strongly Disagree/: 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

14. Daily involvement in the academic programme that possesses technological capability as its competitive advantage could be improving my knowledge.

Penglibatan dalam program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing mampu meningkatkan pengetahuan saya.

Strongly Disagree/: 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

15. Daily involvement in the academic programme that possesses technological capability as its competitive advantage would give me extra knowledge

Penglibatan harian dalam program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing memberikan saya pengetahuan tambahan.

Strongly Disagree/: 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

16. Daily involvement in the academic programme that possesses technological capability as its competitive advantage would help me feel better and improve my knowledge
Penglibatan dalam program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing akan membantu saya berasa lebih baik dan meningkatkan pengetahuan saya.

Strongly Disagree/ : 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

TECHNOLOGY CAPABILITY PERCEPTION/PERSEPSI KEUPAYAAN TEKNOLOGI

17. I believe that DRB-HICOM U has a large number of financial investment in R&D and programme development
Saya percaya DRB-HICOM U mempunyai sejumlah besar pelaburan kewangan dalam R&D dan pembangunan produk.

Strongly Disagree/ : 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

18. I believe that DRB-HICOM U has high-profile technological background personnel in their management team.
Saya percaya bahawa DRB-HICOM U mempunyai kakitangan berprofil tinggi yang berlatar belakang teknologi dalam pengurusan mereka.

Strongly Disagree/ : 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

19. I know that DRB-HICOM U has its own product or process patents.
Saya tahu DRB-HICOM U mempunyai produk atau proses yang dipaten sendiri.

Strongly Disagree/ : 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

20. I know that DRB-HICOM U management team encourage innovative ideas and their implementation
Saya tahu pengurusan syarikat DRB-HICOM U menggalakkan idea-idea inovatif dan pelaksanaannya.

Strongly Disagree/ : 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

21. I believe that internal research and development is greatly emphasized in DRB-HICOM U.
Saya percaya penyelidikan dan pembangunan dalaman sangat ditekankan di DRB-HICOM U.

Strongly Disagree/ : 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

ACTUAL BEHAVIOUR/TINGKAHLAKU SEBENAR

22. I will try to use the academic programmes that possess technological capability as its competitive advantage in daily life.
Saya akan cuba menggunakan program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing dalam kehidupan seharian.

Strongly Disagree/ : 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

23. I will make an effort to attend the academic programmes that possess technological capability as its competitive advantage on regular basis.
Saya akan membuat satu usaha untuk menghadiri program-program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing secara berkala.

Strongly Disagree/ : 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

24. In general, I enjoyed involved in the academic programmes that possess technological capability as its competitive advantage.
Secara umum, saya menikmati terlibat dalam program-program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing.

Strongly Disagree/ : 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

25. It causes a lot of pleasure and fun for the students if they are found to involve in the academic programmes that possess technological capability as its competitive advantage.
Ia menyebabkan banyak keseronokan dan menyeronokkan untuk pelajar jika mereka didapati terlibat dalam program akademik yang memiliki keupayaan teknologi sebagai satu kelebihan daya saing.

Strongly Disagree/ : 1 : 2 : 3 : 4 : 5 : 6 : 7 : Extremely Agree/
Sangat Tidak Bersetuju *Sangat Bersetuju*

**THANK YOU FOR YOUR PARTICIPATION!
TERIMA KASIH ATAS PENYERTAAN ANDA!**

Appendix C: Script to Lecturers/Instructors

SCRIPT TO LECTURERS/INSTRUCTOR

You have been selected to participate in a continuous improvement study. The purpose of this survey is to investigate the students and staff perception of technological capability towards sustaining competitive advantage and change management of DRB-HICOM University of Automotive Malaysia (DRB-HICOM U). You may refer to the definition of technology capability on the 2nd page of the questionnaire.

The questionnaire contains approximately 29 questions and can be completed in less than 25 minutes. It is not a test to examine your intelligence. Kindly provide genuine answers. Your participation is on a voluntary basis and you may withdraw at any time without consequence. All responses remain strictly confidential and no names will be linked with the final data.

Anda telah dipilih untuk menyertai kajian penambahbaikan berterusan. Tujuan kajian ini adalah untuk menyiasat pelajar dan kakitangan persepsi keupayaan teknologi ke arah mengekalkan kelebihan kompetitif dan perubahan pengurusan DRB-HICOM Universiti Automotif Malaysia (DRB-HICOM U). Anda boleh merujuk definisi keupayaan teknologi di muka surat kedua didalam borang soal selidik ini.

Soal selidik ini mengandungi kira-kira 22 soalan dan boleh disiapkan dalam masa kurang dari 20 minit. Sila beri jawapan yang sebenar. Penyertaan anda adalah secara sukarela dan anda boleh menarik diri pada bila-bila masa tanpa akibat. Semua maklumat kekal sulit dan tidak ada nama-nama yang akan dikaitkan dengan data muktamad.

Appendix D: Pilot Test Result

Reliability Statistics

Cronbach's Alpha	N of Items
.905	30

Correlations

		ITTN	ATT	SN	PBC	TCP	ACTB
ITTN	Pearson Correlation	1	-.029	.865**	.974**	.880**	.335*
	Sig. (2-tailed)		.869	.000	.000	.000	.049
	N	35	35	35	35	35	35
ATT	Pearson Correlation	-.029	1	.453**	.167	.122	.165
	Sig. (2-tailed)	.869		.006	.336	.486	.345
	N	35	35	35	35	35	35
SN	Pearson Correlation	.865**	.453**	1	.953**	.762**	.514**
	Sig. (2-tailed)	.000	.006		.000	.000	.002
	N	35	35	35	35	35	35
PBC	Pearson Correlation	.974**	.167	.953**	1	.836**	.463**
	Sig. (2-tailed)	.000	.336	.000		.000	.005
	N	35	35	35	35	35	35
TCP	Pearson Correlation	.880**	.122	.762**	.836**	1	-.099
	Sig. (2-tailed)	.000	.486	.000	.000		.571
	N	35	35	35	35	35	35
ACTB	Pearson Correlation	.335*	.165	.514**	.463**	-.099	1
	Sig. (2-tailed)	.049	.345	.002	.005	.571	
	N	35	35	35	35	35	35

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Appendix E: Summary of Timetable

No.	Date	Day	Prog.	Semester	Class	Venue	Time	Number of Students
1	09/03/16	Wednesday	DMS	3A (June)	DEC1802/ Azalan	Wira 3/FOE	9:00 - 11:00 am	26
2	09/03/16	Wednesday	DMS	3A	DEC2343/ Harlina	Wira 5/FOE	9:00 am - 12:00 pm	8
3	10/03/16	Thursday	DMS	3B (June)	DEC1693/ Aishah	Wira 7/FOE	11:00 am - 1:00 pm	24
4	11/03/16	Friday	DMS	4A	DEC2333/ Zuriadi	Wira 3/FOE	9:00 am - 12:00 pm	9
5	14/03/16	Monday	DMS	5A (24), 6A (June) (21) & 6B (June) (23)	DEC3593/ Safiza	Elise	10:00 - 1:00 pm	68
6	14/03/16	Monday	DVA	5A (11), 6A (8) & 6A June (15)	DEC3593/ Safiza	Elise	10:00 - 1:00 pm	34
7	16/03/16	Wednesday	DMS	6A	DBC2083/ Tehsapan	Juara 1/FOB	8:00 am - 10:00 am	24
								<u>193</u>

No.	Date	Day	Prog.	Semester	Class	Venue	Time	Number of Students
1	17/03/16	Thursday	DST	3A (June)	DEC1263/ Fithrey	Waja 2/FOE	10:00 am -1:00 pm	28
2	17/03/16	Thursday	DST	3B (June)	DEC1273/ Yusrin	Waja 2/FOE	10:00 - 1:00 pm	34
3	23/03/16	Wednesday	DST	3A	DEC2303/ Yusrin	Waja 2/FOE	10:00 - 12:00 pm	25
4	24/03/16	Thursday	DST	3C (June)	DEG1612/ Syukriah	Wira 10/FOE	10:00 am - 11:00 pm	29
5	24/03/16	Thursday	DST	4A	DEC2293/ Zharfan	Waja 2/FOE	9:00 am - 12:00 pm	10
6	25/03/16	Friday	DST	5A (23) & 5B (20)	MPU2412/ Ros Laila	Elise/SAC	10:00 am -12:00 pm	43
7	30/03/16	Wednesday	DST	6A (18) & 6B (10)	DEG1073/Tuan Mustaza	Wira 9/FOE	9:00 am - 11:00 pm	28
8	30/03/16	Wednesday	DST	6A (25), 6B (27) & 6C (28) June	MPU2412/ Ros Laila	Exige/SAC	11:00 am - 1:00 pm	80
								<u>277</u>

No.	Date	Day	Prog.	Semester	Class	Venue	Time	Number of Students
1	29/03/2016	Tuesday	DVA	3A (3) & 4A (2)	DEC2243/ Zaidi Azir	Satria 6/FOB	8:00 am - 12:00 pm	5
2	29/03/2016	Tuesday	DVA	3A (June)	DEC1673/ Dr Siva	Wira 1/FOE	9:00 - 11:00 am	9

14

Grand total = 484

Appendix F: Questionnaire for Staff



Othman Yeop Abdullah
Graduate School of Business
Universiti Utara Malaysia

Focus Group Script

“Good afternoon, my name is Suhaidah Hussain. I am currently a Doctor of Management candidate at Universiti Utara Malaysia (UUM) and I would really appreciate your help today in a doctoral research project entitled: **TECHNOLOGICAL CAPABILITY PERCEPTION TOWARDS SUSTAINING COMPETITIVE ADVANTAGE AND CHANGE MANAGEMENT: A CASE STUDY DRB-HICOM UNIVERSITY OF AUTOMOTIVE MALAYSIA (DRB-HICOM U).**

I would really appreciate your help today in sharing attitude and beliefs of staff perception on the technological capability towards sustaining competitive advantage and change management in DRB-HICOM U. Any feedback is welcome and any information you can give will be very helpful to me and this study”.

[ATTITUDE]

“To get us started, I want you to take a look of the newspaper cutting in front of you. Please take some time to write down any feelings, thoughts, or draw any pictures that come to mind when you look at the newspaper cutting.”

[ATTITUDE]: “I would like to start with introductions, so we’re going to go around the table and if you can say your name and tell us about your feelings of DRB-HICOM U’s achievement of University status?”

[ATTITUDE]: “How do you feel to work with others after the achievement of University status? pleasant/neutral/unpleasant?”

[ATTITUDE]: “How do you feel University status is helpful/neutral/unhelpful to in completing your daily tasks?”

[ATTITUDE]: “Can you share some of the positive/good things working in DRB-HICOM U?”

[ATTITUDE]: “Can you share some of the negative things working in DRB-HICOM U?”

[SUBJECTIVE NORMS]

[SUBJECTIVE NORMS]: “How you think that people who are important to you said that you should work in DRB-HICOM U?”

[SUBJECTIVE NORMS]: “Do most of people who are important to you believe that working in DRB-HICOM U is important?”

[PERCEIVED BEHAVIOUR CONTROL]

[PERCEIVED BEHAVIOUR CONTROL]: “Do you think it is extremely easy/difficult to work in DRB-HICOM U?”

[PERCEIVED BEHAVIOUR CONTROL]: “Do you have anything that influence you to work in DRB-HICOM U?”

[TECHNOLOGY CAPABILITY PERCEPTION]

[TECHNOLOGY CAPABILITY PERCEPTION]: “Do you use technology in completing your daily tasks?”

[TECHNOLOGY CAPABILITY PERCEPTION]: “Do you think that technological capability has effect on DRB-HICOM UAM to sustain its competitive advantage?”

[INTENTION]

[INTENTION]: “Do you intent to continue working in DRB-HICOM U having the technological capability as its competitive advantage?”

[INTENTION]: “In your daily work, do you intend to embed technological capability to assist you in your task?”

[INTENTION]: “Do you perceive technological capability is important to DRB-HICOM U to sustain its competitive advantage?”

[CHANGE MANAGEMENT]

[CHANGE MANAGEMENT] “How do you find your greatest concern or fear about the change process?”

[CHANGE MANAGEMENT] “How do you manage your concern or fear?”

[CHANGE MANAGEMENT] “How this change process can be improved?”

[SCENARIO]

“Looking at the current situation, do you think DRB-HICOM U needs to have programmes that encourage the usage of technology for staff? Can you give me an example?”

“Do you think that if DRB-HICOM U to sustain its competitive advantage the staff needs to have knowledge in terms of technology?”

“OK, now that we’re done, I want to open it up for any other ideas and comments. This can be something you just thought of or anything that has been on you mind throughout the focus group.



Appendix G: Research Consent Form



Othman Yeop Abdullah
Graduate School of Business
Universiti Utara Malaysia

Study Title:

Technological Capability Perception Towards Sustaining Competitive Advantage & Change Management: A Case Study DRB-HICOM University of Automotive Malaysia (DRB-HICOM U)

Investigator: Suhaidah Hussain

I. Purpose

The purpose of this study is to understand the attitude and beliefs of staff perception on the technological capability towards sustaining competitive advantage and change management. By conducting this study it is hoped to assist DRB-HICOM U in mid to long term development plan.

II. Procedures

Your participation requires you to attend a focus group setting. You may choose whether or not to participate in this study. Your participation will require you to verbally answer questions about your attitudes and opinions toward technology capability and sustaining competitive advantage challenge. The entire study will take approximately 1 hour to complete. Discussion among other members in the group is encouraged. The Board of Ethics DRB-HICOM U has approved this study.

III. Risks

There is no foreseeable risk of adverse effects. The only foreseeable risk is the possible inconvenience associated with answering the focus group questions. You do not have to answer any questions that make you feel uncomfortable and you may stop participating at any time.

IV. Benefits

You will have the opportunity to experience and understand the process involved in focus group study. The findings from this research may be used to assist DRB-HICOM U in mid to long term development plan. It is important to mention that no promise or guarantee of benefits have been made to encourage you to participate.

V. Extent of Confidentiality

We will audio record the focus group session. The recordings will be converted to computer audio format (MP3) and be downloaded to a password protected external drive. A trained research assistant will transcribe the information and compile a report. The study is confidential. We will collect your names but will not disclose your information to other people.

We will audio record your responses to the questions without identifying the answers with the person in the final report. Only the research team will know that you participated in this study. The data will be stored for three years or until the research is published, then destroyed.

VI. Freedom to Withdraw

If you decide not to participate, please inform the researcher. If you start to participate and then change your mind, you may stop at any time and notify the researcher. If you choose to withdraw, you will not be penalized.

VII. Subject's Permission

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent:

_____ Date _____

_____ Subject signature _____

Should I have any pertinent questions about this research or its conduct, and research subjects' rights, and whom to contact in the event of a research-related injury to the subject, I may contact:

Suhaidah Hussain
Lecturer
DRB-HICOM U

Contact Information of Board of Ethics DRB-HICOM U:

If I should have any questions about the protection of human research participants regarding this study, I may contact:

Associate Professor Dr. Richard Jan Pech
Chairman Board of Ethics
School of Graduate School
DRB-HICOM University of Automotive Malaysia
richard@dhu.edu.my

ICAM diberi status universiti

SHAH ALAM - Kolej Automotif Antarabangsa (ICAM), ahli Kumpulan DRB-HICOM telah diberikan status universiti oleh Kementerian Pengajian Tinggi dan kini dikenali sebagai DRB-HICOM University of Automotive Malaysia.

Pengarah Urusan Kumpulan DRB-HICOM, Tan Sri Mohd. Khamil Jarfil berkata, melalui pengiktirafan tersebut, DRB-HICOM University of Automotive Malaysia merupakan antara yang pertama di Asia yang menawarkan ijazah tempat untuk sarjana muda, sarjana dan program kedoktoran yang berkaitan dengan ekosistem automotif termasuklah bidang mekanikal, perniagaan dan kajian pengurusan seperti kursus kewangan dan perakaunan.

"Ia merupakan satu peristiwa penting bagi universiti yang semakin berkembang dan sebagai



PENGIKTIRAFAN ICAM sebagai universiti akan melonjakkan nama insituti pengajian tinggi yang mampu melahirkan graduan berkemahiran dalam bidang automotif.

sebuah institusi pengajian tinggi terkemuka di rantau ini.

"Universiti ini juga akan memainkan peranan yang penting

ke arah memastikan negara mempunyai bekalan tenaga kerja industri sedia berkhidmat yang mencukupi demi me-

enuhi hasrat kerajaan untuk mewujudkan masyarakat yang pengetahuan," katanya dalam kenyataan yang dikeluarkan di sini semalam.

Khamil menjelaskan, yang membezakan universiti ini daripada institusi pengajian tinggi yang lain ialah ia dapat menerapkan pendekatan seimbang dengan kehendak pendidikan sama seperti konsep latihan berganda yang diamalkan secara meluas di Jerman.

Di negara berkenaan, hampir 60 peratus daripada pekerjaannya dilatih sebagai perintis.

"Gabungan teori dan praktikal ini menjadikan pelajar kami sentiasa bersedia dalam kerjaya mereka ekoran gabungan pengetahuan teknikal bersama pengalaman latihan amali yang diperolehi mereka," jelasnya.

Beroperasi di kampus yang seluas 16.8 hektar di Pekan, Pahang itu, universiti tersebut

memiliki kelebihan daripada aspek lokasi yang strategik berhampiran dengan hab serantau automotif DRB-HICOM.

Tambah beliau, suasana persekitaran universiti yang agak tenang di Pekan yang mana ia jauh daripada kesibukan serta keadaan persekitaran yang tenteram, menjadikan kawasan itu sesuai untuk pelajar memberi tumpuan sepenuhnya terhadap pengajian.

"Kami telah membawa bersama sebuah pasukan fakulti yang mantap dan diketuai profesional yang berpengalaman luas dalam bidang pendidikan.

"Ia turut disokong oleh ahli-ahli akademik dari dalam dan luar negara yang mempunyai pengalaman kerja di institusi akademik di seluruh dunia.

"Gabungan yang sempurna ini bakal memacu universiti ke tahap yang lebih gemilang" jelasnya.

Appendix I: Descriptive Statistics and Skewness Test Result

Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
ATT	273	1.80	7.00	3.2586	1.05263	.968	.147	.361	.294
SN	273	2.20	7.00	5.1663	.94186	-.298	.147	.007	.294
PBC	273	4.00	7.00	5.5390	.50209	-.056	.147	.042	.294
TCP	273	1.00	7.00	5.1465	1.21119	-.787	.147	.832	.294
ITTN	273	2.00	7.00	5.3123	1.09426	-.364	.147	-.236	.294
ACTB	273	5.00	7.00	5.7711	.53573	.127	.147	-.263	.294
Valid N (listwise)	273								



Appendix J: Test of Normality Result

Case Processing Summary						
Cases						
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
ITTN	273	100.0%	0	0.0%	273	100.0%
ATT	273	100.0%	0	0.0%	273	100.0%
SN	273	100.0%	0	0.0%	273	100.0%
PBC	273	100.0%	0	0.0%	273	100.0%
TCP	273	100.0%	0	0.0%	273	100.0%
ACTB	273	100.0%	0	0.0%	273	100.0%

Descriptives		
	Statistic	Std. Error
ITTN	Mean	5.3123
	95% Confidence Interval Lower Bound	5.1819
	for Mean Upper Bound	5.4427
	5% Trimmed Mean	5.3565
	Median	5.2500
	Variance	1.197
	Std. Deviation	1.09426
	Minimum	2.00
	Maximum	7.00
	Range	5.00
	Interquartile Range	1.50
	Skewness	-.364
	Kurtosis	-.236
ATT	Mean	3.2586
	95% Confidence Interval Lower Bound	3.1332
	for Mean Upper Bound	3.3840
	5% Trimmed Mean	3.1846
	Median	3.0000
	Variance	1.108
	Std. Deviation	1.05263
	Minimum	1.80
	Maximum	7.00
	Range	5.20
	Interquartile Range	1.50
	Skewness	.968
	Kurtosis	.361
SN	Mean	5.1663
	95% Confidence Interval Lower Bound	5.0541

	for Mean	Upper Bound	5.2785	
	5% Trimmed Mean		5.1851	
	Median		5.2000	
	Variance		.887	
	Std. Deviation		.94186	
	Minimum		2.20	
	Maximum		7.00	
	Range		4.80	
	Interquartile Range		1.20	
	Skewness		-.298	.147
	Kurtosis		.007	.294
	Mean		5.5390	.03039
	95% Confidence Interval	Lower Bound	5.4792	
	for Mean	Upper Bound	5.5988	
	5% Trimmed Mean		5.5404	
	Median		5.5714	
	Variance		.252	
PBC	Std. Deviation		.50209	
	Minimum		4.00	
	Maximum		7.00	
	Range		3.00	
	Interquartile Range		.71	
	Skewness		-.056	.147
	Kurtosis		.042	.294
	Mean		5.1465	.07330
	95% Confidence Interval	Lower Bound	5.0022	
	for Mean	Upper Bound	5.2908	
	5% Trimmed Mean		5.2173	
	Median		5.2000	
	Variance		1.467	
TCP	Std. Deviation		1.21119	
	Minimum		1.00	
	Maximum		7.00	
	Range		6.00	
	Interquartile Range		1.40	
	Skewness		-.787	.147
	Kurtosis		.832	.294
	Mean		5.7711	.03242
	95% Confidence Interval	Lower Bound	5.7072	
	for Mean	Upper Bound	5.8349	
	5% Trimmed Mean		5.7456	
	Median		5.7500	
ACTB	Variance		.287	
	Std. Deviation		.53573	
	Minimum		5.00	
	Maximum		7.00	
	Range		2.00	

Interquartile Range	.50	
Skewness	.127	.147
Kurtosis	-.263	.294

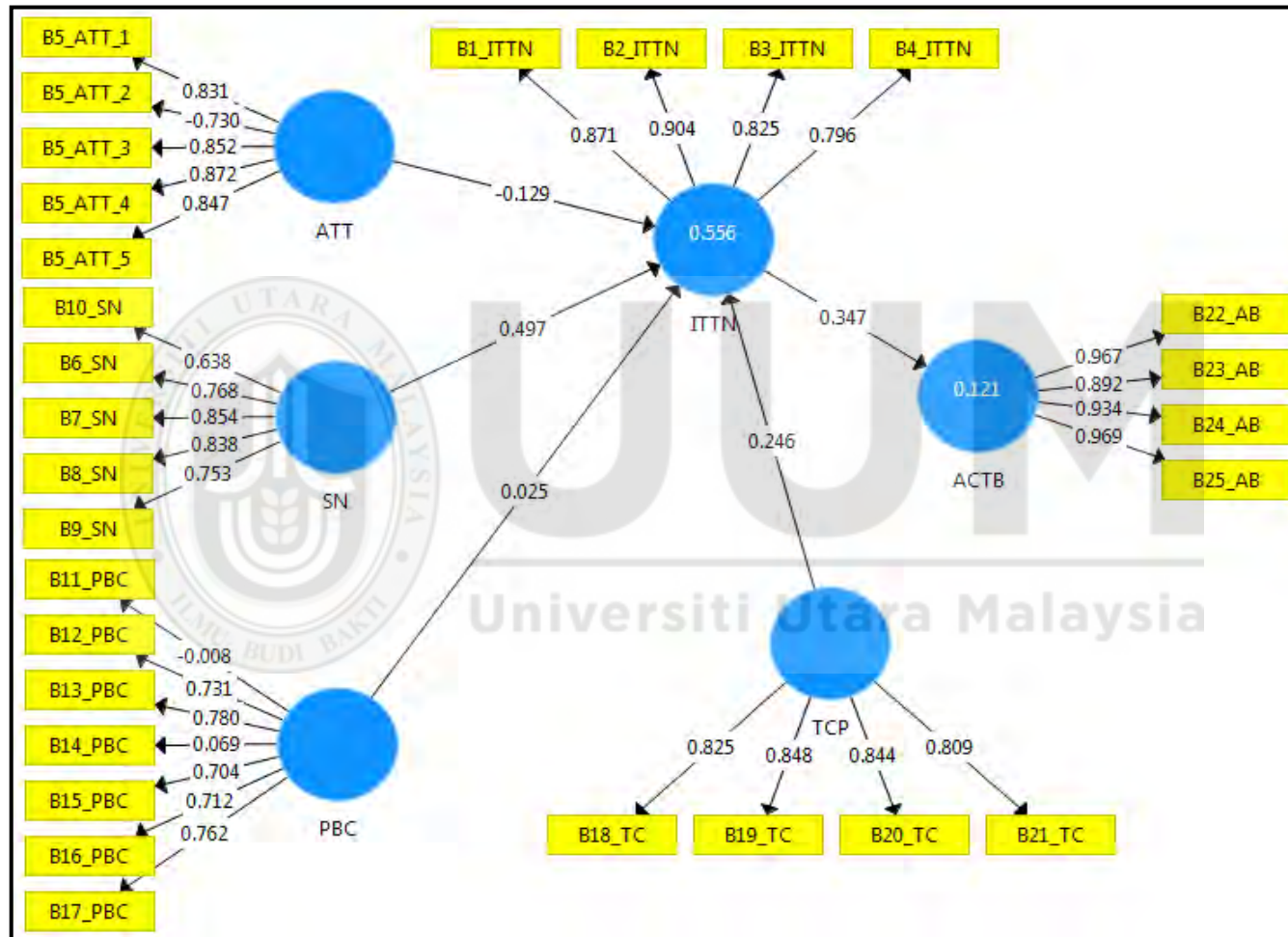
Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ITTN	.076	273	.001	.969	273	.000
ATT	.141	273	.000	.907	273	.000
SN	.066	273	.006	.984	273	.004
PBC	.083	273	.000	.988	273	.021
TCP	.084	273	.000	.954	273	.000
ACTB	.195	273	.000	.898	273	.000

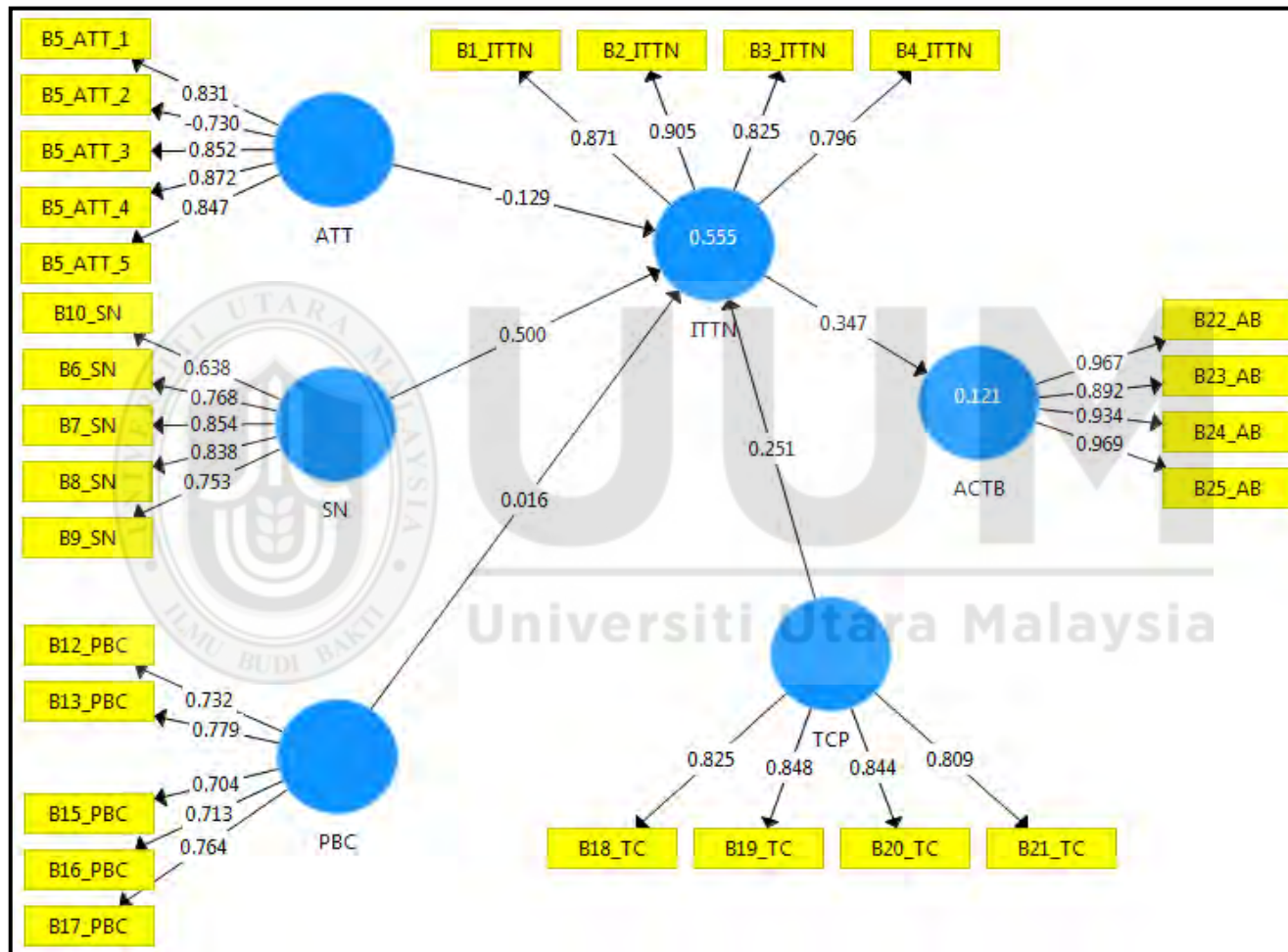
a. Lilliefors Significance Correction



Appendix K: Outer Loadings Before



Appendix L: Outer Loadings After Removing B11_PBC and B14_PBC



Appendix M: Network Map for the Triangulation Findings

