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# Enhancing comprehension with e-reading materials

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**Abstract**

This paper examines the use of e-reading materials for motivating and enhancing reading comprehension among ESL learners. It is part of an ongoing research which experiments with the use of one-sentence short stories in an animated form for cultivating ESL reading habits. The sample comprises 26 respondents majoring in various diploma-level courses in a Malaysian higher learning institution. A reading comprehension test was administered to identify the learners' reading comprehension level according to the Blooms' taxonomy framework. A survey was then conducted to collect data on their perceptions of the e-reading materials. Data from both instruments was analysed using descriptive statistics. The findings of the study indicate that the ESL learners performed significantly well in both lower and higher order thinking skills as a result of using the animated short stories. They also had positive outlook toward the e-reading materials and the use of group discussions for enhancing their comprehension level.

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**Keywords:** ESL learners, e-reading materials, reading comprehension, Blooms' Taxonomy framework.

## 1. Introduction

Finding good reading materials in bookshops is a task that avid book readers perform, spending time and effort browsing through shelves after shelves of books. With the boom of technology, books are now available in electronic websites like amazon.com. In effect, this has led to books being made available online for reading. E-reading materials are gradually becoming viable as more and more readers access them through their smartphones and computers. This poses an opportunity that should not be missed by educational institutions to enhance learning and learners' comprehension with the immense possibilities provided by digital technology.

In recent times, a lot of emphasis has been given to the use of technology in the ESL reading classroom. In the Malaysia Education Development Plan (PPPM) 2013-2025, one of the 11 shifts for transformation of the education system is the leverage of ICT to scale up quality learning across Malaysia (MEB 2013-2015, September 2012). This shows the government's sensitivity towards global trends in teaching and learning to shape Malaysian students for 21$^{st}$ century education. A lot of research has also been focused on reading and literacy among Malaysian students. In its aspiration to become a developed nation, conscientious efforts have been made to improve literacy so that it can achieve a rate of 100% by the year 2020. The World Education Report (1993, as cited by Inderjit, 2014) rated Malaysia with a literacy rate of 78.4% and this is one of the lowest compared to other Southeast Asian countries (Singapore 100%, Indonesia 81.6%, Thailand 93% and Philippines 89.7%). Improvement of literacy can only be possible if cultivating reading skills, which is closely related to literacy, is taken seriously.

Gough et al. (1996, as cited in Ibrahim et al., 2007) states that learning to read involves both the acquisition of word reading and reading comprehension skills. It is a cognitive process of letter knowledge, phonological awareness, auditory or visual perceptions, working memory and vocabulary recognition. Reading comprehension on the other hand is heavily influenced by reading fluency. Reading comprehension is a skill that is critical in the educational success of learners. Learners will struggle in other subject areas when they are unable to comprehend what they have read (Baier, 2005). This goes to show that reading is fundamental for learners to be able to tap onto knowledge and new information in order for cognitive processes to function hence, promoting better understanding and communication.

Further, it is important to note that while reading and literacy are intricately related, the fact that the world is fast evolving towards a digitally web based environment for learning is undeniable. E-reading is already trending around the globe and is fast becoming a daily necessity for information and research. In keeping with this pace then, it is only reasonable to provide for such necessity by making technology enhanced materials available for the e-reader. Young learners especially those categorized in the generation Y category are among todays avid users of web based technology. Conventional reading materials in print and paper are less appealing

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compared to the ever available wealth of knowledge that these learners find with a click and a swipe of their electronic devices.

In view of this, the present study attempts to identify learners' motivation in the use of technology for reading environments which causes some learners to have low reading comprehension and other learners to have high reading comprehension in reading English texts. The main concerns are whether (1) the use of technology-enhanced materials improves reading comprehension skills and (2) the technique of short texts and activities

provide motivation for reading.

This section has given an overview of the study by presenting its background and purposes. The next section of the paper will consider the review of literature from past research that is related to the present study.

## 2. Review of Literature

### 2.1 The Importance of Reading

Reading is defined as a process or mode of thinking that involves complex real experience skills such as the ability to perceive printed words, to skim for information and to read intensively (Inderjit, 2014). Reading is not a natural innate skill but a cultural activity (Wolf, 2008). Through reading, new ideas and knowledge are acquired, needed information are obtained and command for language and vocabulary are improved. It is an activity that can be used for pleasure to relax the mind. It is also a fundamental activity for education. In education, reading is very important for students to acquire information, general knowledge and for brushing up their writing abilities (Silver-Pacuilla and Ruedel, 2004). Kirsch and Guthrie (1984) found that reading for adults contribute to their job success, career development and ability to respond to change and without it the chances for academic and occupational success are limited (Silver-Pacuilla and Ruedel, 2004). With the amount of online information available on the web, peoples' behaviour towards reading has changed.

While Malaysia has seen a paradigm change in its education system, pushing the boundaries of learning towards a better educated nation with a zero percent illiteracy rate by the year 2020 has yet to become a reality as Malaysia still lag behind other South East Asian countries in terms of literacy (Inderjit, 2014). This is because this country's reading habit has not developed as it should. The repercussions are that Malaysians are said to lag in their reading habits.

### 2.2 The Education System in Malaysia

In Malaysian schools, Bahasa Melayu is the first language, while English is the second or third language learned by school children. Majority of these children find reading English text difficult

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and as a result they are considered literate in Bahasa Melayu while illiterate in English (Ibrahim et. al 2007). Based on the aspirations to become an industrialized nation by the year 2020, Malaysia has made many conscious efforts to improve and develop literacy so that it will achieve 100% literacy. According to Inderjit (2014) reading is an aspect associated with literacy and the reading process is not simple in its nature. Previous research has also proven that Malaysian adults are poor readers while school children only read when they are preparing for their examination.In Malaysia and other parts of the world, internet usage will be part of the bandwagon in increasing the number of virtual readers. As a result, the number of students who read printed materials will decrease significantly (Inderjit, 2014).

### 2.3 The Use of Technology in Teaching and Learning

According to Cardullo et al. (2012), current research is redefining reading comprehension in a digital environment and the comprehension strategies for online reading comprehension are emerging. Combining computer-based technologies with sound principles of literacy instruction in ways that complement each other can help students develop the skills and confidence they need to be successful readers and achieve highest achievement. In addition, computer learning environment can offer learning experiences that motivate students, provides a context for the learner that is challenging and stimulates curiosity, provide highly individualized instruction, promote positive attitudes toward learning, facilitate cooperative, collaborative and positive social behaviour, provide learner-controlled instruction and provide active learning experiences (Silver-Pacuilla and Ruedel, 2004). Digital reading materials were found to have facilitating effects on ESL learners' reading comprehension and concentration (Shahnil & Zaliffah, 2014). Because they are the 'digital natives', they find technology-enhanced reading materials changing and enhancing their reading habits.

In this section, past research related to the present study has been discussed. This would enable the researchers to have a wider view of the studies conducted in this area of research. The following section will focus on the present study and the method used to conduct the research which includes the respondents, instruments and procedure for analysis.

## 3. Method

This study examined the efficacy of using e-reading materials to enhance comprehension skills and motivation for reading among ESL learners. The study was conducted using quantitative method of which the diploma students from various courses at UiTM Cawangan Johor were divided into control and experimental groups. Data collected was then analysed based on descriptive statistics.

## 4. Respondents

There were 30 respondents selected using the convenient non-random sampling method as they were all part of the participants of a workshop. However, only 26 of the responses were deemed viable for the research. The respondents were all registered diploma students from various courses at the university which included Business Studies, Information Management, Investment Studies and Computer Science Studies. They made up of both male and female Malay students who were in the final year of their diploma studies. They were all attendance of the finishing school workshop organised by the counselling unit at the university.

## 5. Instruments

There were three main instruments used in the study. This included the e-reading material, the reading comprehension test and a questionnaire.

### 5.1 The e-reading material (PAVOFS Short Stories)

The e-reading material in this study is known as PAVOFS short stories which consist of five one-sentence long short stories. The purpose of the stories being one sentence long is to encourage learners to use complex sentences. Most learners are able to construct simple short sentences. However, constructing complex sentences can be challenging. Thus, PAVOFS short stories will introduce long complex sentences in a fun and innovative manner to encourage reading comprehension. Since the stories were only one sentence each, there were a total of five carefully selected stories that were selected for the research. The stories were original stories used for the research with the consent of the authors of the stories.

### 5.2 The Reading Comprehension Test

The reading comprehension test was adapted from the basic thinking skills listed in Bloom's Taxonomy. The test consisted of six questions which represented the six levels of comprehension which included the following:

| LEVELS | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| SKILLS | Knowledge | Comprehension | Application | Analysis | Synthesis | Evaluation |
| | Lower Order Thinking Skills (LOTS) | | | Higher Order Thinking Skills (HOTS) | | |

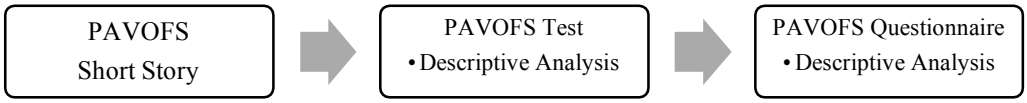
### 5.3 PAVOFS Questionnaire

The respondents were asked to complete the PAVOFs Questionnaire which has two parts;

- Part A - Background information (3 items)
- Part B – Perceptions on the short stories (10 items)

## 6. Procedure

In order to carry out the research, a set of 5 short stories that are made up of one sentence each were given to the respondents in the form of e-reading materials. They were required to read the PAVOFS stories and then to do the PAVOFS test which consisted of 6 questions based on the 6 levels of Blooms Taxonomy. After that, a survey was conducted by means of a set of questionaires. Data was then tabulated and analysed using the descriptive analysis method as shown below.




## 7. Results and Discussion

### 7.1 Profiles of the Respondents

Below in Table 1 is the profile of the respondents concerning their gender, age and their major courses in the university. The 26 respondents consist of 23 females and 3 males. 76.9% of them are aged 18 to 21 years old while the remaining 6 are 21 to 23 years of age. Majority of the respondents are Computer Science (23.1%), Accountancy (19.2%) and Investment Analysis (19.2%) students. The remaining percentages were made up of Information Management (11.5%), Banking (7.7%) and Mathematical Science (3.8%) students.

**Table 1: Profile of the respondents (n=26)**

| Item | Frequency | Percentage (%) |
|---|---|---|
| *Gender* | | |
| Male | 3 | 11.5 |
| Female | 23 | 88.5 |
| *Age* | | |
| 18 – 20 years old | 20 | 76.9 |
| 21 – 23 years old | 6 | 23.1 |
| *Major* | | |
| Accountancy | 5 | 19.2 |
| Business Studies | 4 | 15.4 |
| Banking | 2 | 7.7 |
| Investment Analysis | 5 | 19.2 |
| Computer Science | 6 | 23.1 |
| Mathematical Science | 1 | 3.8 |
| Information Management | 3 | 11.5 |

### 7.2 PAVOFS Test

Table 2 and Table 3 present the data on the respondents' performance in lower (LOTS) and higher order thinking skills (HOTS) based on the 5 short stories assigned to them. In Table 2, it can be seen that respondents performed better at the lower order thinking level (M= .891, SD= .244) compared to the higher order thinking skills (M= .819, SD= .349). Overall, the highest mean score was recorded for the first level of thinking which is Knowledge (M= .904) while the lowest mean score was recorded for one of the higher order thinking skills which is Synthesis (M= .790).

**Table 2: Performance according to level of comprehension (n=26)**

| Level of thinking skills | M | SD |
|---|---|---|
| **LOTS (M= .891, SD= .244)** | | |
| Knowledge | .904 | .164 |
| Comprehension | .894 | .263 |
| Application | .874 | .305 |
| **HOTS (M= .819, SD= .349)** | | |
| Analysis | .848 | .317 |
| Synthesis | .790 | .392 |
| Evaluation | .818 | .337 |

*LOTS: Lower order thinking skills; HOTS: Higher order thinking skills*

Below in Table 2 is the breakdown of each level of thinking skills according to the short stories assigned to the respondents. It can be seen that the students' performance varied from one short story to another, especially for stories 4 and 5. The lower mean scores may be the result of the types of stories given; stories 4 and 5 were set in a different cultural setting that may affect the students' content knowledge.

**Table 3: Performance on comprehension level according to stories**

| Score | Story 1 | | Story 2 | | Story 3 | | Story 4 | | Story 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Level | M | SD | M | SD | M | SD | M | SD | M | SD |
| **LOTS** | | | | | | | | | | |
| Knowledge | 1.00 | .000 | 0.95 | .000 | 1.00 | .000 | 0.86 | .359 | 0.71 | .463 |
| Comprehension | 0.95 | .218 | 0.90 | .301 | 1.00 | .000 | 0.86 | .359 | 0.76 | .436 |
| Application | 0.95 | .218 | 0.95 | .218 | 0.95 | .218 | 0.76 | .436 | 0.76 | .436 |
| **HOTS** | | | | | | | | | | |
| Analysis | 1.00 | .000 | 0.86 | .359 | 0.86 | .359 | 0.71 | .463 | 0.81 | .402 |
| Synthesis | 0.95 | .218 | 0.86 | .359 | 0.76 | .436 | 0.71 | .463 | 0.67 | .483 |
| Evaluation | 1.00 | .000 | 0.86 | .359 | 0.81 | .402 | 0.71 | .463 | 0.71 | .463 |

*LOTS: Lower order thinking skills; HOTS: Higher order thinking skills*

### 7.3 PAVOFS Questionnaire

To examine the learners' perceptions of the e-reading materials, the respondents were asked about their opinions on the short stories used in the PAVOFS activity. Overall, a large majority of the students agree or strongly agree on the use of the stories which they found to be interesting and creative. More than half of the respondents strongly agree that the stories are short (53.8%) and easy to understand (53.8%). Half of the respondents (50%) also strongly favour the stories as they managed to complete all the stories and find that the stories help them to focus. They also found the vocabularies used in the stories easy to understand. At the same time, majority of the respondents agree that reading the stories help them think (53.8%) and improve their

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English (57.7%). Lastly, 57.7% of them strongly agree that they would recommend the stories to others which further indicate their preference towards the stories.

**Table 4: Perceptions on PAVOFS short stories (n=26)**

| No. | Item | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1. | The stories are interesting. | 0.0 | 0.0 | 3.8 | 57.7 | 38.5 |
| 2. | The stories are short. | 0.0 | 0.0 | 3.8 | 42.3 | 53.8 |
| 3. | I understand the story. | 0.0 | 0.0 | 3.8 | 38.5 | 53.8 |
| 4. | Vocabularies are easy to understand. | 0.0 | 0.0 | 3.8 | 46.2 | 50.0 |
| 5. | The stories help me to think. | 0.0 | 0.0 | 3.8 | 53.8 | 42.3 |
| 6. | The stories improve my English. | 0.0 | 0.0 | 0.0 | 57.7 | 42.3 |
| 7. | The stories are creative. | 0.0 | 0.0 | 0.0 | 34.6 | 65.4 |
| 8. | I completed reading all the stories. | 0.0 | 0.0 | 3.8 | 46.2 | 50.0 |
| 9. | The stories help me learn to focus. | 0.0 | 0.0 | 7.7 | 42.3 | 50.0 |
| 10. | I would recommend the stories to others. | 0.0 | 0.0 | 3.8 | 38.5 | 57.7 |

*1-Strongly Disagree 2-Disagree 3-Undecided 4-Agree 5-Strongly Agree*

## 8. Conclusion and recommendations

This study sought to investigate the use of technology-enhanced ESL reading materials to improve and motivate reading comprehension among ESL undergraduates. It is part of an ongoing study that examines the efficacy of using the e-reading material (PAVOFS) among ESL learners. Based on data collected, it was found that the 26 participants in this study performed significantly well in both lower (M= .891, SD= .244**)** and higher-order (M= .819, SD= .349) reading comprehension skills that was measured using Bloom's taxonomy. By only watching videos of the short stories, the students were able to complete the questions given in a reading comprehension test. When asked about the stories, the participants' responses showed their motivation towards reading the short stories that were presented in audio-visual form. Such preference for technology-enhanced reading materials among Malaysian ESL learners has also been documented in Shahnil and Zaliffah (2014). Thus, PAVOFS as a technology-enhanced reading material has a great potential in motivating and improving ESL learners' reading comprehension skills among Malaysian undergraduates.

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# Reexamining Academic Reading Skills of Unemployed Graduates through the English Language E-Training (ELET) Module

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**Abstract**

The study investigates the effects of the English Language E-Training (ELET) Reading Module in Enhancing the academic reading skills among 30 BBA(Bachelor of Business Administration) unemployed graduates. The research consists of a pretest, the application of the module and the post-test. A survey questionnaire was also deployed in order to find out the participants' learning styles and readiness towards the ESP e-training program as well as their perception towards the online module. The findings revealed that the ELET Reading module is able to significantly enhance the participants' academic reading skills. Furthermore, the survey indicates the participants' readiness and positive reception towards ELET reading module.

***Keywords:*** *E-Training, Academic Reading, Online Learning, ESL*

## 1. Background

Graduate unemployability is a serious rising concern for Malaysia. The unemployment rate among Malaysian youths rose 1.2% from an estimated 9.5% to 10.7% in 2015. In comparison, the national unemployment rate went up by 0.2% from 2.9% to 3.1% (Bank Negara Malaysia Annual Report, 2016). The Ministry of Education Graduate Tracer Report 2015 (Ministry of Higher Education, Malaysia) showed that there were 273,373 graduates in 2015 and a large number hold Bachelor's Degree and Diploma, 45% and 43% of all graduates, respectively. Of particular concern, among these graduates, 24% were still unemployed. The rising trend of unemployed graduates in the country has been the focus of several studies (Chiew, 2013; Ismail, Hussin & Darus, 2012a; Ismail, Soo & Ismail, 2015). A few factors contribute to this growing problem. One of the most frequently cited factors is the graduates' poor soft skills. The lack of soft skills in turn

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has been linked to a number of factors, the most fundamental of which is language input (Darmi & Albion, 2013; Md Razak, Mohd Yusof, Syazana, Jaafar & Talib, 2014; The Star, 2015).

To that end, the ELET (English Language E-Training) which is the main feature of this study, was created with the aim to help undergraduates develop the following skills: reading, writing, listening and speaking. ELET is an online program via the use of a Learning Management System (LMS,) which consists of four (4) English language modules that are: reading, writing, listening and speaking. The online modules are developed based on the findings of the ELET needs analysis study conducted prior to the research. The online program also uses the Autonomous Learning Model (Betts & Kercher, 1999), the related ESL communicative learning theories (Krashen 1981, Krashen 1985; Kroonenberg, 1995; Kuhn & Chuo, 2002) as well as the Framework for Supplementary Online English Learning Module (Noriah Ismail, Saadiyah Darus & Supyan Hussin, 2012) as its basis. However, for the purpose of this study only the ELET Reading Module is used to discover whether it is able to enhance the participants' academic reading skills. In addition, the study investigates the participants' readiness and positive reception towards the e-training module. The result of this study can be used for designing an online training program for academic reading skill. Finally, the research will also propose recommendations for a model revision and several possible directions for future research.

## 2. Literature Review

Technology is integral to academic life in the 21st century. It is used primarily in service of language learning and teaching. In the teaching of reading, technology supports a multitude of approaches to help learners of different levels of language ability to master certain aspects of comprehension. Warschauer (2001) writes that digital media has changed reading practices, giving rise to new literacies incorporating synchronous and asynchronous learning. Thus, the computer is no longer an optional tool but rather an essential medium of language use. For the current generation of ESL students, growing up surrounded by technology does not ensure they will be effective readers. They still need assistance in developing ESL reading skills. This is especially so with the ESL vocabulary knowledge which is widely held to be the primary factor in ESL reading comprehension. For example, Abraham (2008) found that computer-mediated vocabulary learning was most effective for intermediate-level learners.

In their study, Chun and Nation (2006) suggested the use of image-based annotations for ESL vocabulary learning. These were seen to be helpful, particularly in combination with text-based annotations. In contrast, Sakar and Ercetin (2005) saw that the students in their reading comprehension study preferred visual representations significantly more than textual or audio representations. Both these studies imply the importance of training students to use online reading materials. It is wrong to assume that students know how to use these resources or that teachers can let them rely on their own resources (Hubbard, 2009). While many studies on learning reading online focused on vocabulary learning and reading comprehension, too few studies have looked into how online programs can be effectively used for academic reading.

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English for academic reading grew out of a broader field of ESP (English for Specific Purpose). It is defined by its focus on teaching English specifically to facilitate learners' study or research through the medium of English (Flowerdew & Peacock, 2001). Mediocre skills and the lack of motivation in academic reading have seen many undergraduates struggling to handle their academic work. Recent statistics show that the Malaysian universities have spent millions of ringgit on training programs yearly particularly on enhancing the ESL communicative skills of students (Shakir, 2009; Wong & Hamali, 2006, Teo, 2008) In Malaysia, youth and graduate unemployment are emerging issues that need to be tackled fast. Unemployment rates among these categories are very much higher than the national average (Malaysian Institute of Economic Research, 2014). What remains a prominent problem for many of these graduates is their poor language communicative ability which has impeded their employability chances (Nor Aslah Adzmi, 2009; Ismail, Hussin & Darus, 2012b). Their problem in communication can be traced to the lack of language input. Even if they have managed to become gainfully employed, many of them struggle to become truly competent in these skills, prompting their employers to send them for adequate training (Noriah Ismail & Intan Safinas Mohd Ariff Albakri, 2012)

Since the present work environment has become more virtual and technology- dependent, the nature of learning and training have also moved from the traditional face- to-face mode to a web-based, autonomous and self-directed training environment (Horton, 2001; Muhamad & Idris, 2004; Ismail, Hussin & Darus, 2012c). ELET offers learners' flexibility to develop academic reading skills in terms of time and learning pace. It offers programs for language input skills that are imperative for academic work in langauge as well as content classes. With well- developed reading skills, graduates, are able to better handle tasks in English and to perform well in both their speaking and writing skills. Graduates who fail to do so will have a difficult time to get hired (Nor Aziah Alias, Haziah Jamaludin & Salemah Ismail. 2001; Wan Zumusni, 2007; Noriah Ismail, Deepak Singh Ratan Singh, Suhaidi Elias & Intan Safinas Mohd Ariff Albakri, 2015).

In a nationwide survey on graduates' skills requirements, in terms of the training program content, Muhamad and Idris (2004) reported that communication or language is below 5% while most courses are on technical skills (30%), motivation and self- improvement (22%) and education information and general knowledge (15%). Therefore, there is a need to develop an e-training program module for academic reading which provides the necessary ESL training for academic reading skills for undergraduates. Thus, it is crucial to investigate the readiness of students to learn academic reading through an online resource and the extent to which online programs such as ELET would be able to enhance the academic reading skills of fresh graduates.

## 3. The Study

The main objective of this research is to evaluate the effectiveness of the English Language E-Training (ELET) Reading Module for Enhancing the reading skills of unemployed graduates via the use of a Learning Management System (LMS). In addition, the study also looks at the participants' readiness and reception towards ELET reading module.

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ELET is an ESP e-training program developed to enhance ESL skills of BBA fresh and unemployed graduates. The online reading module was tested on 30 unemployed BBA students from Universiti Teknologi MARA Johor, Malaysia who have taken ELC 500 course (English for Academic Reading) as ELC500 is the prerequisite for ELET. Of that number, about 90 percent of the 30 participants were females and almost 10 percent, males. All of the participants were 23 years and above. The research consists of a pre- test, the application of the ELET Reading Module and a post-test. In this present study, ELET Reading Module was being used as a supplementary course. Through autonomous learning or self-directed learning skills, the participants applied their previous knowledge and experience in this ELET Reading Module consisting of five units including sections on

1) Skimming and Scanning, 2) Interpreting meaning of words, 3) Identifying main ideas and supporting details, 4) Making inferences and drawing conclusions and 5) Assessing the text by determining its composition of facts and opinions. All units include online learning practices with links as well as web-based resources and materials. The units were created to help students to master academic reading skills that is necessary for the graduates to achieve a language competence at a commendable level.

The tests, which were graded upon 30 marks, consisted of two reading passages and a total of fourteen questions in both close and open-ended forms. The questions tested the students' fundamental academic reading skills taught in the course. A survey questionnaire were administered which are the Pre-Survey before the treatment was deployed to gather data on the students' perception of the online module as well as their readiness towards e-training. Their learning experience were evaluated quantitatively to learn the trend in their learning styles and preferences.

## 4. Findings and Discussion

### 4.1 Findings from the Pre and Post Tests

To find out if there was any significant difference in the students' pre-test and post-test reading scores, a T-test for paired sample was conducted. Firstly, as shown in Table 1, the mean post test score, 5.6. (N=30, SD 1.0372) was higher than the mean pre- test score, 5.167 (N=30, SD 1.1472). The results showed that there was not a significant increase between the pre-test and post-test.

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**Table 1 : RR1 and RR2 mean scores**

| | | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Pair 1 | pretest | 5.167 | 30 | 1.1472 | .2095 |
| | posttest | 5.600 | 30 | 1.0372 | .1894 |

As displayed in Table 2, the estimated correlation coefficient showed that there was a positive linear relationship between the scores of RR1 and RR2 at 40.6%. A further analysis showed a p-value of 0.026, implying a significant relationship between RR1 and RR2 at the 0.05 level.

**Table 2 : Paired Samples Correlation between RR1 and RR2**

| | | N | Correlation | Sig. |
|---|---|---|---|---|
| Pair 1 | pretest & posttest | 30 | .406 | .026 |

Finally, the results of the paired samples test presented in Table 3 showed a p-value of 0.056 (p>0.05) thus indicating the difference in the pre-test and post- test scores was barely significant. However, at the 0.10 level, the difference in the pretest and post test scores was significant.

**Table 3 : Paired Samples Test**

| | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|---|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| Pair 1 | pretest - posttest | -.4333 | 1.1943 | .2181 | -.8793 | .0126 | -1.987 | 29 | .056 |

## 4.2 Findings from the Survey

For this study a survey questionnaires was carried out to determine their reasons and interest for e-training particularly the ELET reading module. Furthermore, the analysis seeks to discover the participants' readiness for e- training program in general and their perception of a good ESL e-training module for BBA graduates. All 30 graduates took part in the survey.

Data from Sections A, B, and C of the questionnaire were analyzed using SPSS (Statistical Package for Social Science) and presented in frequency counts and percentages. Responses to the open-ended questions in Section C were read, interpreted and put into common themes.

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Both data were used together to give a holistic view of the outcome of the analysis.

The qualitative data of the questionnaire were carefully read, analyzed and categorized into common themes. The analysis was done by counting the explicit mentions of a)Participants' learning styles b) reasons why improving English proficiency was crucial to gaining employment c) how learning English especially the academic reading skill online could be beneficial to the respondents and d) what are the other important ESL skills needed by BBA graduates. Salient themes that emerged from the analysis were then used to form a comprehensive description of the respondents' perceptions and expectations towards online language learning. The findings are presented in the following paragraphs with anecdotal evidence.

As this investigation is a part of a larger study, only a selection of the findings are discussed. For the purpose of this paper, only the three top reasons or statements that the respondents gave are presented. Reliability statistics was run to check the reliability of the questionnaire items and it returned a Cronbach's Alpha value of .858 (Table 4).

**Table 4: Reliability**

| Cronbach's Alpha | N of Items |
|---|---|
| .858 | 36 |

Section A reports on the extent of the students' knowledge regarding several computer applications (Table 5). Of all the applications mentioned, the responses with the three highest means were MS Word (mean 4.1220), games (4.0732) and LMS or learning management systems (3.8293).

**Table 5 : Extent of Knowledge of Computer Applications**

| | MSWord | MSExcel | MSAccess | SPSS | Search | LMS | Email | Utility | Games |
|---|---|---|---|---|---|---|---|---|---|
| N | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 |
| Missing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mean | 4.1220 | 3.2927 | 3.0976 | 2.6585 | 3.6098 | 3.8293 | 3.7317 | 3.7561 | 4.0732 |

### 4.3 Learning Styles

In Section B, the respondents were asked to respond to several statements relating to how they learnt online. The three top statements are presented. From figure 1, the findings showed that the majority of them (80%) were exposed to the Internet and some amount of learning using the computer in school. A big majority (75%) felt that they study better when they can discuss with their peers. Finally, close to two thirds (66%) of the respondents like to do autonomous learning with some help from their lecturers.

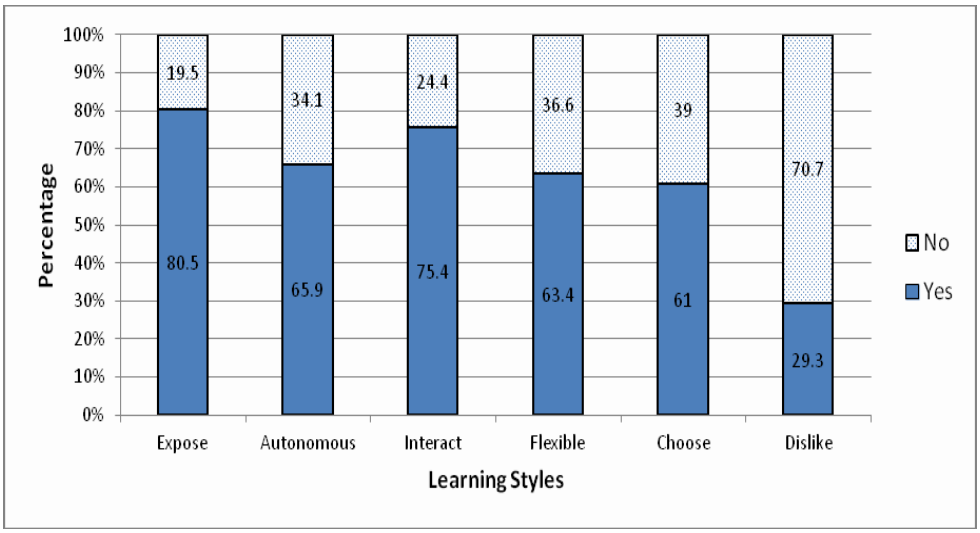


**Figure 1: Learning styles**

### 4.4 Reasons for choosing to join ESL online course

In Section C, the students were asked to respond to several reasons why they would choose to learn ESL online (Figure 2). Here again, the three top reasons are presented. A majority of them (70.7%) agreed that they would do so to be more proficient in the language. The second top reason was that online learning will give them the opportunity to learn something new (66%). Finally, 61% agreed that one strong reason why they would join an online course was that they can become more independent or autonomous.

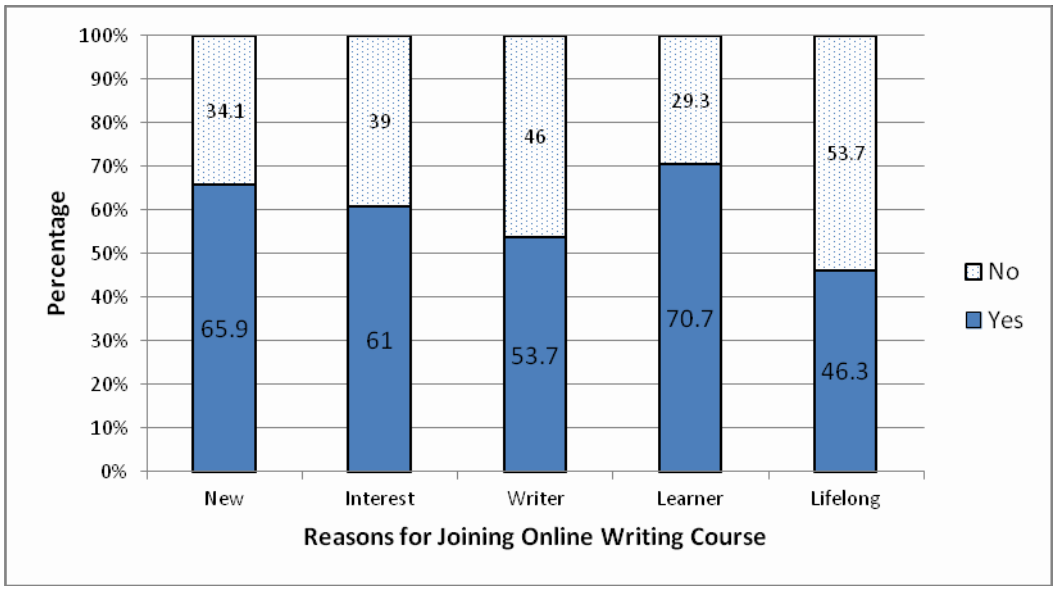


**Figure 2 : Reasons for Interest in joining ESL online Course**

In Question E1, the respondents were asked to explain how improving their Business English is important in getting a job. The responses given by the respondents were mostly related to expectations of 1) the interview 2) the nature of the industry 3) the potential employer. The majority of the respondents agreed that proficiency was a requirement for employment and that they had to show that they were proficient during job interviews. This deduction was made based on some of the following (unedited) excerpts from the respondents:

"…this is the way to increase our chanceto get the job" (respondent #13) "..it is [a]

requirement for any jobs." (respondent #17)

"..this is for the interview" (respondent #22)

In fact, one respondent felt that proficiency would help him gain an edge over other candidates: "..this is a way to make ourselves more valuable than other [candidates]" (respondent #25)

Good knowledge of the English Language is also seen as important especially in the nature of the business industry. The respondents clearly understood that if they were applying for a position in a business company, they needed to be proficient:

"..English is important for international business" (respondent #9)

"..[English] is an important medium of communication business" (respondent #11)

In relation to the third issue, the employer, the respondents felt that having some level of ESL proficiency, particularly Business English is important in securing a job as it is the expectation of their employers. Some of them said:

"..employers usually set [certain] standards" (respondent #15)

"..employers only accept fluent English in writing and presentation" (respondent #13)

"..employers and clients are usually impressed [with good English]" "..it would help in communicating with the staff and customers" (respondent #10)

"...it shows no fear, and more confidence to deal with clients and management" (respondent #25)

Other comments given by the respondents gave insights into how they perceived learning Business English online would help them. In Question E2, the respondents were asked

to explain how they see learning English online or e-training would bring them benefits. Their responses are related to learning independence and can categorized under

1) flexibility 2) confidence 3) technology skills and 4) managing resources. In relation to the first category, flexibility, the respondents felt that e-training will give them some amount of leeway to work on what they like at their own pace. Some of them wrote:

"..I will be free to learn anytime and anywhere" (respondent #17)

"..I can get more opportunity to enhance proficiency" (respondent #21)

Under the next category, the respondents viewed that ESP e-training will give them the opportunity to build better confidence. It can be said that the nature of online learning put respondents in a position where they can make their own decisions regarding their learning. In other words, respondents move to the next task or level only when they have gained some confidence to do so:

"..I am more confident especially when [learning] presentation skills" (respondent #19)

Under the category "technology skills", the respondents support ESP e-training as the accepted way to learn and is suitable with their level of technological prowess:

"..we can learn pronunciation and vocabulary online" (respondent #29) "..we can now read online newspapers and journals" (respondent #18) "..Internet is the best resource for learning" (respondent #16)

Furthermore, the respondents believed that ESP e-training can help them manage their resources better in terms of time and cost:

"..I can save time and money through online learning" (respondent #9)

Finally, the respondents assert that the ESP e-training module feel that ELET is a very good e-training module for Business graduates particularly its academic reading module. The participants also suggest that module include academic writing skills such as report writing, proposal writing and presentation skills. This is because the respondents felt that these are also the important skills that they lack.

"…ESP skills which I need the most include academic writing, report as well as proposal writing as they can help me secure a good job" (respondent #7)

" …I lack certain ESP skills such as presentation and communication skills so I would love to learn and master them via online." (respondent #14)

"…a good e-training course must have modules on how to write a good proposal or report because most graduates are still not good at them including me and also presentation skill." (respondent #23)

The main finding of the study revealed that ELET Reading module is able to significantly enhance BBA fresh graduates' academic reading skill. The study indicates the participants' high interest towards ELET Reading module. In addition, the participants revealed their readiness and positive perception towards e-training program. This finding supports the study conducted by Noriah Ismail, Supyan Hussin and Saadiyah Darus (2012) which indicated favorable view regarding ESL online program for UiTM students' and their need to improve their academic writing skills via online. In addition, the findings also lend support to Fang's (2010) study which investigates 45 EFL learners' perceptions of an English language computer-assisted online program known as *MyAcces,* which revealed the benefits the online writing tool in enhancing the learners' motivation and shows that it is a useful support tool for an ESP online course.

## 5. Conclusion

The study highlights the importance of providing a suitable and effective ESP E-Training program to fresh and unemployed graduates in order to sharpen and enhance their ESL skills. It is interesting to note that fresh graduates' main reason or interest in joining an e- training program points to the module that can cater their learning styles. More importantly, the study is significant as it takes into account the fresh graduates' ESP e-training needs and provides them with the right kind of skills based on their particular need which is academic reading, as very few other studies conducted on ESL graduates have focused on them. The result of this research is useful for designing an online training program especially for academic reading skills.

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# Timeliness of Financial Reporting in the Shariah-compliant Companies: Effects of Audit Committee's and Firms' Characteristics

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**Abstract**

The study examines the determinants of audit report delay among Shariah-compliant companies in Malaysia. Specifically, the study examines the relationship between audit report delay with selected audit committee's and firms' characteristics, namely audit committee independence, audit committee meeting, audit committee expertise, company size and its financial year end. This study also examined whether there is a difference in the period of audit delay after the revised Malaysian Code of Corporate Governance 2007 (MCCG 2007) took place. Multivariate analysis using 507 annual reports of these Shariah-compliant companies between 2006 till 2008 indicated that only audit committee meeting, audit committee expertise and company size showed significant relationships with audit report delay. The finding also showed that there is no significant difference between the period of pre and post implementation of the revised MCCG 2007. Findings of this study could provide new insight on the matters of audit report delay among Shariah-compliant companies in Malaysia.

**Keywords:** Audit delay, audit committee, corporate governance, timeliness.

## 1. Introduction

Malaysia, being populated by Muslims in majority, is known in the world as the hub for enabling Islamic capital market businesses. To comply with Islamic values i.e. the Shariah laws, Bursa Malaysia classified companies as either Shariah-compliant and non Shariah-compliant. Shariah-compliant companies perform their activities in accordance to the Islamic principles and values

which are approved and classified by the Shariah Advisory Council (Othman, Thani, & Ghani, 2009). Studies have highlighted that Shariah- compliant companies are expected to have better governance and possess higher quality of financial reporting than other companies (Othman et al., 2009; Wan Ismail, Kamarudin, & Sarman, 2015). This is due to, "Shariah-compliant companies being subjected to greater scrutiny by regulators and institutional investors, have greater demand for high-quality financial reporting because of their Shariah status and have a greater incentive to supply high-quality reported earnings to attract foreign investment" (Wan Ismail et al., 2015, p. 21).

Financial reporting is concerned with the provision of information which poses the characteristics of relevance, adequate, comparable and reliable sources. Another pertinent characteristic of sound financial reporting is that the information that it holds needs to be released in a timely manner (FASB 2010). Prior studies suggest that financial reporting timeliness affects users in making sound economic decisions (Abernathy, Beyer, Masli, & Stefaniak, 2014; Puasa, Md Salleh, & Ahmad, 2014) and may reduce information asymmetry (Afify, 2009). Financial reporting timeliness is proxied by audit report delay. Audit report delay is the number of days between the financial year end to the date of audited report (Lee & Jahng, 2008). FASB 2010 requires financial statements to be issued in a timely manner. The quality and usefulness of information will be jeopardized if financial information is not provided on time. Investors, accounting professionals, board of directors and regulators have considered timeliness of accounting information as an important feature of financial reporting quality (Abernathy et al., 2014; Ahmed & Che-Ahmad, 2016). As such, in 2013 Bursa Malaysia has proposed a new requirement that the time line for releasing audited financial statements be reduced from four to two months, indicating the importance of the need to issue audited report in a timely manner.

The current study extends the work by Puasa et al. (2014) by examining the issue of audit report delay among Malaysian Shariah-compliant companies. Previous study by Puasa et al. (2014) examined companies listed on the Main Market of Bursa Malaysia for the year of 2004 to 2006 and 2009 to 2011. Their study consists of 223 companies for each year, equivalent to 669 firm-years observation for each period. Their sample however, did not specifically examine the effect of Malaysian Shariah-compliant companies in the study of audit report delay. Given the importance of financial reporting timeliness and the governance of Shariah-compliant companies, the study address the gap in the literature by examining the association between audit committee's characteristics (audit committee independence, audit committee meeting and audit committee expertise) and firm's characteristics (company size and its financial year end) on audit report delay.

This paper is organised as follows. The following section discusses literature review. The paper then discusses research method as well as the study results and the discussion of results. Finally, the conclusion of the study is provided.

## 2. Literature Review

Corporate governance attributes are among the contributing factors in the studies of timeliness of financial reporting (Ahmed & Che-Ahmad, 2016; Mohamad-Nor, Shafie, & Wan-Hussin, 2010). Prior studies utilised certain audit committee's attributes and firm's characteristics in determining

the factors for audit report delay. Audit committee play an important role in enhancing financial reporting process (Puasa et al., 2014). They are seen as protectors of investors' interest where audit committee will ensure that all management action is taken on behalf of the principal's interest. As such, audit committee are merely acting as an agent, consistent with the notion of agency theory (Jensen & Meckling, 1976). Thus, the existence of audit committee to monitor the agent's activities will reduce the agency cost and agency problem which in this case is the problem of audit report delay.

### 2.1. Audit committee's characteristics and audit delay

The revised MCCG (2007) recommends the following audit committee attributes as "best practices": (a) comprised of a majority of independent non-executives directors, (b) financially literate members as well as there is an effort to (c) increase the frequency of their meeting. Audit committee with independent directors can be considered as a more reliable group in monitoring the company as compared to board of directors. This is due to the composition of audit committee that may form an unbiased view of financial information and good quality of financial reporting (Mohamad-Nor et al., 2010). Mohamad-Nor et al. (2010) stated that, audit committee independence should be strengthened in order to reduce the audit report delay. Studies by Puasa et al. (2014) and Hashim and Abdul Rahman (2011) have indicated that audit committee independence may shorten audit report delay.

As stated in MCCG (2007), audit committee members should be financially literate. Afify (2009) indicated that, audit committee should have essential skills in understanding the financial information. This is to enable them to monitor and evaluate the quality of financial information. Such skill is essential as audit committee members need to understand the auditing issues, audit procedures, understand the disagreement between the management and the external auditors and evaluate the judgement (Mohamad-Nor et al., 2010). Prior studies have indicated that audit committee expertise can assist the company to release their financial reporting in timely manner (Hashim & Abdul Rahman, 2011; Puasa et al., 2014). Mohamad-Nor et al. (2010) suggested that audit committee expertise should be given more emphasis in order to increase the corporate performance and on time corporate financial reporting.

Prior researchers also indicated that the more frequent number of audit committee meeting, the more likely the company to produce their audit report on time (Mohamad- Nor et al., 2010; Puasa et al., 2014; Shukeri & Islam, 2012). Audit committee meeting is the session where audit committee and directors will discuss the financial reporting issues and where audit committee monitor the management in terms of its financial reporting practices (Mohamad-Nor et al., 2010). As such, by having frequent meetings, audit committee members will be better informed and be knowledgeable with any financial reporting issues and may address any concern in a timely manner (Abbott, Parker, & Peter, 2004). In addition, Bursa Malaysia Corporate Governance Guide states that audit committee meeting is advised to be conducted at least four times a year. Studies by Mohamad-Nor et al. (2010), Puasa et al. (2014) and Shukeri and Islam (2012) proved that audit report lag may be shorten by having frequent audit committee meetings.

### 2.2. Firm's characteristics and audit delay

The timeliness of financial reporting process is also affected by the firm's characteristics. Prior studies found that there are significant associations between firm's characteristics such as company size and its financial year end with audit report delay (see Ahmed & Che-Ahmad, 2016; Che-Ahmad & Abidin, 2008; Eghlaiow, Wickremasinghe, & Sofocleous, 2012; Puasa et al., 2014).

With regards to company size, studies argue that larger companies tend to have lower audit delay compared to the small companies for a variety of reasons. Large companies tend to have strong internal control system thus less time for external auditors to complete their audit work (Che-Ahmad & Abidin, 2008). Furthermore, larger companies also tend to have sufficient resources to hire accounting professionals to manage their financial reporting requirements (Shukeri & Islam, 2012). Larger companies would be likely to own more advanced accounting systems and better internal controls which enables them for timely reporting completion (Afify, 2009). As such, it is said that smaller companies tend to experience audit report delay than their larger counterparts. Hence, prior empirical studies acknowledged that company size are negatively related to audit report delay (Abernathy et al., 2014; Afify, 2009; Che-Ahmad & Abidin, 2008; Shukeri & Islam, 2012).

Another firm's characteristic that will affect the audit delay is the company's financial year end. Financial year end have been used as independent variable in various research on timeliness of financial reporting. A company that has a financial year end similar to the others is expected to experience longer audit delay (Che-Ahmad & Abidin, 2008).This is due to the fact that, it may cause scheduling problems for the auditors in completing their audit assignments due to shortage of audit personnel (Carslaw & Kaplan, 1991). Carslaw and Kaplan (1991) showed that there was a positive association between audit delay and financial year end.

## 3. Research Methodology

Data was collected for three years from 2006 to 2008 from the annual reports of Shariah-compliant companies listed on Bursa Malaysia. The selected period was chosen mainly because of the revision in the Malaysian Code of Corporate Governance on October 2007 which has emphasized on the need for audit committee effectiveness. As stated earlier, the revised MCCG 2007 specifically require audit committee; (1) to solely comprise of non-executives directors, (2) to appoint at least one members who is financially literate or a member of a professional accounting body, and (3) to conduct at least two audit committee meetings in a year. As such, the choice of this period between 2006 to 2008 are deemed to be important in ensuring whether local companies do adapt to such MCCG 2007's new requirements.

Furthermore, in 2004, the Malaysian Accounting Standard Board (the Malaysian accounting standard setting body) has announced that Malaysian companies are required to adopt the International Financial Reporting Standards (IFRS) effective from 1 January 2006 (Wan Ismail, Kamarudin, Zijl, & Dunstan, 2013). Therefore, the adoption of this new set of accounting standards in Malaysia provides an opportunity to study the effect of timeliness in submission of annual reports.

### 3.1. Sample selection

Out of 718 Shariah-compliant companies listed in main market of Bursa Malaysia, only 699 companies were selected (refer Table 1). Shariah-compliant companies from financial industry were excluded due to the differentiation in their nature of business and are governed by different rules and regulation. Four Initial Public Offering companies were also taken out as they were newly listed companies and did not have sufficient information for the purpose of this study. In addition, the sample also excluded 14 companies listed under PN17 Bursa Malaysia listing requirement as these companies were facing financial distress (Bursa Malaysia, 2011). A stratified random sampling method was used for the sample selection. Krejcie and Morgan's (1970) table was used to identify the sample size. Based on the table below, as the population is n = 699, therefore the sample size selected is 169 companies.

**Table 1: Distribution of population and sample of Shariah-compliant companies based on Industries**

| Industry | Population | Sample | % |
|---|---|---|---|
| Consumer products | 125 | 41 | 24.0 |
| Industrial products | 238 | 52 | 30.8 |
| Mining | 1 | 0 | 0.00 |
| Construction | 40 | 10 | 6.00 |
| Trading/ services | 144 | 27 | 16.0 |
| Properties | 77 | 24 | 14.2 |
| Plantation | 38 | 10 | 6.00 |
| Technology | 29 | 4 | 2.40 |
| Infrastructure | 7 | 1 | 0.60 |
| **TOTAL** | **699** | **169** | **100** |

*Source:* List of Shariah-Compliant Securities. Retrieved from www.sc.com.my

### 3.2. Measurement of variables

The dependent variable examined is audit report delay while the independent variables are audit committee characteristics (proxied by audit committee independent, audit committee meetings and audit committee expertise) and firm's characteristics (proxied by company size and financial year end). Table 2 summarizes the variables description and its measurement procedures.

**Table 2: Variables Description and Measurement**

| Variables | | Measurement |
|---|---|---|
| **Dependent variable** | | |
| Audit report delay | ARD | Number of days between financial year end and audit report. |
| **Independent variables** | | |
| Audit committee independent | ACIND | Percentage of non-executives directors to the total number of audit committee members |
| Audit committee meeting | ACMEET | Number of meeting held by audit committee |

| | | |
|---|---|---|
| Audit committee expertise | ACEXP | Percentage of audit committee members that have members in accounting professional bodies to the total of audit committee members. |
| Financial year end | FYE | Dummy variable 1 if the financial year end is 31st December,<br>0 if otherwise. |
| Company size | SIZE | $Log_{10}$ of the Total Assets. |

Multiple linear regression analysis was utilised to test the hypotheses of the study. The regression model is stated below:

$$ARD = B_0 + B_1 YEAR + B_2 ACIND + B_3 ACMEET + B_4 ACEXP + B_5 FYE + B_6 SIZE + \mathcal{E}$$

Where,

| | |
|---|---|
| $B_0$ | *Intercept coefficient, when all other independent variables are zero* |
| *YEAR* | *Year for pre and post MCCG 2007* |
| *ACIND* | *Percentage of non-executives directors to the total number of audit committee members.* |
| *ACMEET* | *Number of meeting held by audit committee* |
| *ACEXP* | *Percentage of audit committee members that have members in accounting professional bodies* |
| *FYE* | *Dummy variable, 1 if the financial year end is 31st December, 0 otherwise* |
| *SIZE* | *$Log_{10}$ of the total assets* |

## 4. Results and Discussion

### 4.1. Descriptive analysis

Table 3 shows the period of audit report delay among the Shariah-compliant companies listed in Bursa Malaysia. The table indicated that no companies completed their audit report within one month which is less than 30 days for the three years. Most companies completed their audit report within 4 month which equal to 120 days. On the other hand, no companies completed their audit report more than 5 months. The result shows that all companies comply with the Bursa Malaysia's Listing Requirements, where all public listed companies must submit their audit report within a period of sixth months (180 days) from the financial year end of the company.

**Table 3: Number of companies and period of audit report delay**

| **Audit report delay** | **No. of companies** | | |
|---|---|---|---|
| | **2006** | **2007** | **2008** |
| 1 month (0 - 30 days) | 0 | 0 | 0 |
| 2 months (31 - 60 days) | 23 | 21 | 16 |
| 3 months (61 - 90 days) | 29 | 30 | 34 |
| 4 months (91 - 120 days) | 112 | 105 | 113 |

| | | | |
|---|---|---|---|
| 5 months (121 - 150 days) | 5 | 13 | 6 |
| 6 months (151 - 180 days) | 0 | 0 | 0 |
| **TOTAL** | **169** | **169** | **169** |

Table 4 below indicates that ACIND consist of 2 companies which have less than 33% non-executives directors in the audit committee members while another 505 companies have more than 33% of the non-executive directors in their audit committee membership. For ACMEET, almost all companies (503 = 99.2%) conduct their audit committee meeting more than 4 times a year. 79% of the companies have less than 50% of total audit committee members having financial expertise such as being members of professional accounting bodies. This shows that the companies have followed the MCCG (2007) requirement of having at least one member of audit committee who is a member professional accounting bodies. 58.6% of the companies have 31st December as their financial year end date. And finally, majority of the companies (57.6%) have total assets in a range of RM 99 million to RM 1 billion.

**Table 4: Frequency distribution of independent variables**

| | | Frequency | Percent |
|---|---|---|---|
| ACIND | Less than 33% | 2 | 0.4% |
| | More than 33% | 505 | 99.6% |
| ACMEET | Less than 4 times | 4 | 0.8% |
| | More than 4 times | 503 | 99.2% |
| ACEXP | Less than 50% | 401 | 79% |
| | More than 50% | 106 | 21% |
| FYE | 31st December | 297 | 58.6% |
| | Otherwise | 210 | 41.4% |
| SIZE | Less than RM99 mill | 172 | 33.9% |
| | RM99 mill – RM1 bill | 292 | 57.6% |
| | More than RM1 bill | 43 | 8.5% |

### 4.2. Paired sample T-test analysis

Paired sample t-test analysis was utilised to identify the difference of audit report delay among the Shariah-compliant companies listed in Bursa Malaysia before and after the revision of MCCG. The mean value of audit delay for year 2006 and average mean value for both year 2007 and 2008 are compared. Table 5 presented the result. The mean value after the revised code is increase as compared to mean before the revised code (pre = 98, post = 99.4). The mean difference is a positive value of 1.4. This indicates that the audit report delay increase minimally after the revision of MCCG. The p-value of 0.138 indicated that there is no significant change in ARD during the pre and post period of revised MCCG. This shows that audit report delays shows an increasing trend in the number of days between the financial year end and the date of the audit report even after the revision of MCCG 2007. The result is consistent with a study by Haron,

Saringat, and Mohd Tahir (2013, p. 145) which argue that "Shariah-compliant companies in Malaysia do not practice timeliness in income recognition."

**Table 5: Paired sample T-Test – pre and post MCCG 2007**

| ARD | 2006 | 2007 – 2008 | Mean difference | p-value |
|---|---|---|---|---|
| | Mean N = 169 | Average Mean N = 169 | 1.400 | .138 |
| | 98.00 | 99.40 | | |

The above finding however contradicts to the study by Puasa et al. (2014). Their study found that the mean value of their ARD was found to decrease after MCCG 2007 as compared to before the revised code. Furthermore, the paired sample t-test showed a significant difference in ARD for the period before and after the revised MCCG 2007 code.

### 4.3. Multiple regression analysis

Table 6 shows the result of multiple linear regression analysis. The overall correlation between dependent and independent variables is significant. The adjusted R square indicated that 16.4% variation in ARD is explained by independent variables namely ACIND, ACMEET, ACEXP, FYE and SIZE.

**Table 6: Multiple Linear Regression Analysis**

| | Coefficient | T-Stat | P-Value |
|---|---|---|---|
| (Constant) | 215.201 | 13.333 | .000 |
| YEAR | 2.108 | 1.040 | .299 |
| ACIND | 0.345 | 0.072 | .943 |
| ACMEET | 4.408 | 5.357 | .000*** |
| ACEXP | -16.862 | -3.014 | .003** |
| FYE | 2.482 | 1.348 | .178 |
| SIZE | -16.309 | -8.612 | .000*** |

| | |
|---|---|
| N | 507 |
| R Square | 0.174 |
| Adjusted R square | 0.164 |
| F-value | 17.55 |
| P-Value | 0.000 |

***significance at 0.01
**significance at 0.05
*significance at 0.10 Dependent Variable: ARD

Based on the result above, only ACMEET, ACEXP and SIZE show significant relationship with ARD. For ACMEET, the results indicated that, the more frequent the audit committee conducted their meetings; the more days shall be the ARD. The result contradicted with earlier study done by Hashim and Abdul Rahman (2011) and Mohamad-Nor, et al., (2010). For ACEXP, the result suggested that the more audit committee members posing certain expertise, the lower will be the audit report delay. This is consistent with Hashim and Abdul Rahman (2011) and Puasa et al.

(2014) study. Having a financial expertise among the audit committee may help the companies in reducing cases of error and fraud and may lead to reduction in cases of audit report delay. Finally, SIZE shows significant relations with ARD as larger companies tend to complete their audit work earlier as compared to small companies. This is because large companies have strong internal control that the external auditors can relied on; therefore, reducing the volume of audit work to be performed (Che-Ahmad & Abidin, 2008).

## 5. Conclusions

Based on the importance of governance monitoring mechanism over the issue of audit report delay, this study extends the work by Puasa et al. (2014) on a different setting by specifically examining Malaysian listed Shariah-compliant companies. This setting was chosen due to the novelty of Shariah elements that emphasize the importance of transparency, trustfulness and timeliness in its financial reporting practices. The first objective of the study is to examine the relationship between audit report delay with selected audit committee's and firms' characteristics, namely audit committee independence, audit committee meeting, audit committee expertise, company size and its financial year end. The results of the study indicate that only audit committee meeting, audit committee expertise and company size show significant relationship with audit report delay. Such results indicated that audit committee characteristics could act as an enforcement tool in ensuring the effectiveness of financial reporting practices.

The second objective is to find out whether the revised MCCG 2007 could be the solution on matters pertaining to problems of audit report delay among these Shariah- compliant companies. The results show that there is an increasing trend in the number of days between the financial year end and the date of the audit report even after the revision of MCCG 2007. The analysis results showed that even though the revised MCCG 2007 strengthens the corporate governance of a firm, it did not however reduce audit report delay. The possible reason for this could be due to the additional requirements that the Malaysian Shariah-compliant companies need to address unlike their non Shariah-compliant companies counterparts. In respect to financial dealings and transactions, Shariah-compliant companies are compelled to ensure that the principles and teachings of Quran are fulfilled in the matters of realization of fairness and justice, preservation of rights as well as the need to pay zakat.

This study contributes to the Malaysian regulators in its financial reporting practices by suggesting that being Shariah-compliant companies might be seen as social responsible requirements in fulfilling our local investors' spiritual as well Islamic needs and requirements. Thus, it can be seen that investors might be concern on the transparency of these Shariah-compliant companies' dealings rather than the issue of audit report delay. In the future, other corporate governance mechanisms could be considered especially by incorporating the recent MCCG 2012 and 2017 requirements on the issues of audit report delay.

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# Assessing the Potential of Knowledge for Retention among Agro Entrepreneurs in Malaysia

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**Abstract**

The purpose of this study is to identify the types of knowledge that are needed to be retained when agro entrepreneurs depart from the organization. It also aims to examine the reasons and strategies for retaining knowledge among Malaysian agro entrepreneurs with various areas of

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expertise. This study used qualitative method through face-to-face interview with three (3) agro entrepreneurs. The data were analyzed by using ATLAS.ti and presented in themes. It is identified there are five types of knowledge that are needed to be retained from the agro entrepreneurs which are marketing skill, analytical thinking, technical skill, managerial skill, and social networking skill. This study also highlights two main reasons for retaining the knowledge which are for long-term business and customers' loyalty as well as presenting preferred strategies to retain the knowledge through Community of Practice (CoP), training and coaching. This study is conducted in order to help entrepreneurs identify critical types of knowledge of entrepreneurs for the purpose of retaining it for future benefits.

**Keywords**: Agro entrepreneur, knowledge, knowledge retention, knowledge loss, knowledge management

## 1. Introduction

It is very important for any organization to manage their knowledge effectively as it is regarded as their intellectual capital that can help them achieve competitive advantage. Knowledge is generally divided into two types: tacit (intangible) and explicit (tangible). Knowledge however, is mostly seen as tacit knowledge which involves ones skills, understanding, and expertise with the accumulation of experiences. It also concerns the "know-how", "know-what" and "know-why" of specific objects, events, and processes (Eucker, 2007).

There is a concern highlighted by Joe et al. (2013) in their study which stated that not all employees are aware of their functionality and knowledge management is not incorporated into the culture of the organization. This leads to losing of valuable knowledge that they have with them. Loss of knowledge in an organization will result in the decreased of capability for effective decision making (Bairi et al., 2011). It will also lead to loss of clients due to low quality of products and other reasons (Joe et al., 2013). Daghfous et al. (2013) in their study found that different organizations are exposed to different factors of knowledge loss. Few research has been conducted to identify the types of knowledge that is in need to be retained among entrepreneurs especially in the Malaysian context. Therefore, this study was conducted to assess to the potential of knowledge to be retained and thus prevent from losing it. This study also focused on the reasons for retaining the knowledge of the Agro Entrepreneurs as well as the preferred strategies to retain it.

Three research questions were developed to answer the issues of this study.

1. What are the types of knowledge owned by the agro entrepreneurs to be retained before they leave the organization?
2. What are the reasons for retaining the knowledge owned by the agro entrepreneurs?
3. What are the preferred strategies to be used to capture and retain the knowledge?

## 2. Agro Entrepreneurs in Malaysia

Agriculture has played a significant role in the development of the Malaysian economy. This is proven when in the Ninth Malaysian Plan (RMK9), where the agriculture sector will be developed as the third driving force that contributes to the country. The Department of Statistic Malaysia is an agency under the Ministry of Agriculture and Agro-Based Industry (MOA) responsible in realizing the farmers to be agro entrepreneurs as well as implementing the government policies related to the agro sector (Muhammad Abi Sofian Abdul Halim et al., 2011). Agro entrepreneur is also known as agropreneur by which it combines two terms, agro (agriculture) and preneur (entrepreneurship). Agro entrepreneur as stated by Muhammad Abi Sofian Abdul Halim et al. (2011) is the entrepreneur who desires to be successful in the farm business. They diversify their business which can expand their farm income and allow them to survive. In 2003, the Ministry of Agriculture and Agro-Based Industry spent RM500 million for the purpose of turning the traditional farmers into visionary agropreneurs (Abdul Halim, Alias, Che Hamid & Zakaria, 2011).

### 2.1 Knowledge Retention in entrepreneurs

Retention of knowledge helps in stabilizing the economy of the organization and it takes less time in training new employees. Walsh and Ungson (1991) stated that there are three main activities involved in the knowledge retention process; knowledge acquisition or capture; storage; and retrieval. Knowledge acquisition concerns with obtaining or capturing knowledge of individuals within the organization for future use. Knowledge acquisition can be done through sharing and transferring of knowledge via best practices such as face-to- face storytelling, mentoring and coaching, and peer assist. Storage includes the process and facilities which are used to hold the valuable knowledge or information until it is needed and retrieved. It includes memory or knowledge of individuals, groups or teams (human capital), structural capital and others (Bairi et al., 2011). Knowledge retention helps in the process of retrieving knowledge and to be used or reused for new situation or environment. It helps in bringing the past or previous knowledge to help in the current situation for decision making and problem solving.

As for entrepreneurs, most of them acquire knowledge or skills through formal education, experience, functional skills, training and self-confidence (Omerzel & Antonc˘ic, 2008). Eucker (2007) also added that if the experience is failed to be contributed to information, then the knowledge especially the tacit one is not effective.

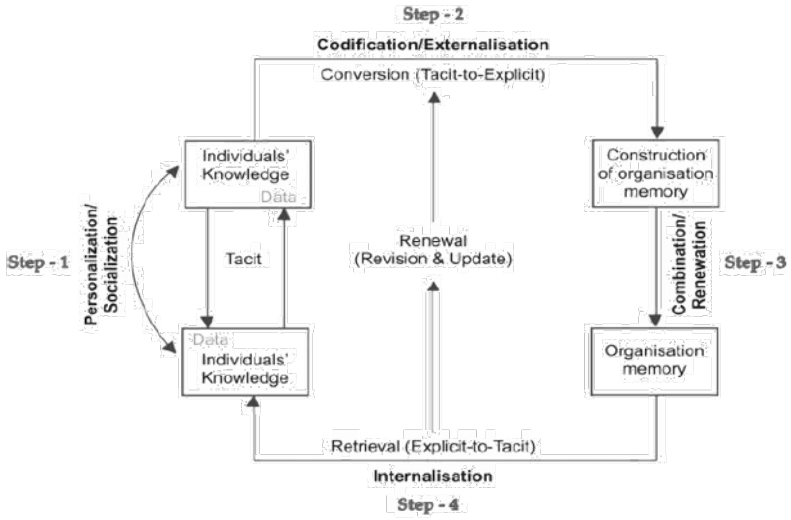


Figure 1: Model of Knowledge Retention Process (Arif et al., 2008)

## 2.2 Types of knowledge for retention

There are types of knowledge owned by employees of an organization that are crucial to be retained. Knowledge of relationships and social network is essential to the organization as it helps to maintain and improve rapports among employees across the organization as well as stakeholders and customers. Losing of employees will cut off the established social relationships (Pennings et al., 1998) which directs to negative impacts on the intellectual capitals. Knowledge of social network involves know-who as guide to build and maintain wide-range of professional network of professional individuals (Leonard et al., 2014). Knowledge of relationships possessed by the employees allows them to be able to place the right contacts and refers to the right source (Joe et al., 2013).

Whenever having problems, one of the primary steps is to look for individual who has solved the same problems previously (Eucker, 2007). This is where knowledge of problem solving is needed. Cross (2006) as cited by Eucker (2007) mentioned that quality and scope of network of an individual provides extensive impact on the ability of the individual to solve problems. Older employees are those who have work for a long time with the possession of vary experiences of projects, routines, processes and others. The experiences gathered provide them valuable knowledge that is crucial especially in handling problems in the organization.

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DeLong (2004) pointed out that losing of knowledge causing the reduction of capacity for effective actions and decision making in a particular environment of the organization. Knowledge of decision making relates to an individual's judgment towards a certain area that he is employee in. Employees judge or decide on something through distinction that cannot be seen by the inexperience employees. A wild-land fire employee explained on how he understand local flora in order to handle burning to control bushes in particular areas. He stated that less new hires are able to make such decisions and it frustrated most of wild- land fire employees (Leonard et al., 2014).

Marketing knowledge is essential as it increase the employees or entrepreneurs' ability to seek for external opportunities by attracting customers to consume their products as well as increasing the growth of economy (Burgers et al., 2008). Researchers are now focus on two specific types of knowledge which are marketing and technical knowledge as they are important in achieving desired outcomes of entrepreneurs and organizations. Shane (2000) stated that technical knowledge focuses on products, technologies, and processes involved in the organization while marketing is acquired by interacting with manufacturer, customers, and suppliers (Zhao & Wang, 2015). Due to increase of competition and complexity in market, entrepreneurs find it is difficult for them to acquire resources and promote their products. Therefore, some of them prefer to develop new routines and competencies in facilitating the accessibility of resources.

### 2.3 Strategies for knowledge retention

Previous researchers have suggested few strategies that can be taken by organizations in retaining their knowledge assets especially related to tacit knowledge of an employee. Argawal and Islam (2015) stated that Hayward-Wright (2009) lists two types of strategies for knowledge retention which are system-based knowledge transfer and people-based knowledge transfer strategies. People-based knowledge transfer strategy concerns in retaining tacit knowledge through social interaction and experiences. The strategies that can be taken to retain knowledge includes mentoring, coaching, shadowing, joint decision making, interviews, storytelling, networking, think tanks, forums or community of practice (Daghfous et al., 2013). Further study conducted by Mustapa and Mustapa (2014) also suggest similar strategies that is through organization's meeting, establishing an open communication environment, instilling mentor protégé relationship, exit interview implementation, establishment of company intranet and also through community of practice.

Mentoring is one of the strategies that are mostly implemented in the entrepreneurship industry by which the talented and experienced one guides the new and young entrepreneur. Coulter (2003) suggested that training can help to keep the employees or entrepreneurs who are well trained. The training can be in three categories which are technical, interpersonal and problem-solving training. Coulter (2003) adds that in retaining the entrepreneur, another strategy that can be taken is through providing compensation and benefits which include merit pay, profit sharing and others. This strategy is done to

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attract and retain the entrepreneurs with talents to help the organization in achieving its goals.

Rothwell (2004) as cited in Argawal and Islam (2015) also suggested strategies that focus on knowledge retention which include process documentation, critical incident interviews or questionnaires, employee systems, job aids, information exchanges and best practices studies. Understanding the importance of knowledge retention helps organizations to be able to access the vital knowledge and expertise owned by their employees as well as acknowledging the role of knowledge management in the organizations which helps in developing their competitive advantage as well as gaining profits.

## 3. Methodology

This paper is an explorative case study that seeks to identify the potential of knowledge that can be retained among three agro entrepreneurs in Malaysia. The data collection was conducted through face-to-face interview. This study focused on the purposive sampling in which the samples were the agro entrepreneurs from entrepreneurship industry. They are the entrepreneurs who have been involved in entrepreneurship sector with ten (10) to thirty (30) years of professional experiences and possessed a broad area of knowledge specifically entrepreneurship and business. There were three (3) agro entrepreneurs interviewed by the researcher. Rather than choosing new entrepreneurs, those who acquired more experiences have more knowledge and expertise in handling business cases or issues. The interview sessions were taken at their working place (farm and office). Semi-structured interview script is prepared as an initial point to lead the conversation between the interviewer and interviewee. The aim is to capture as much as possible the respondent's thoughts about a particular topic or a practical task. The questionnaire constructed for this study is based on the objectives to be achieved. The researcher only conducted the interview, collected data and analyzed them without interfering the routine functioning of the entrepreneurs. This study was conducted in a non-contrived setting called as the field study.

## 4. Findings

Table 1 shows the participants' profile. The participants are the entrepreneurs in the agriculture sector which are also known as agro entrepreneurs that have extensive experiences in this sector.

**Table 1: Respondents' profile**

| Participant | Age | Experiences (years) | Area of Expertise | Past Background |
|---|---|---|---|---|
| AGP1 | 51 | 30 | Poultry | Businessman |
| AGP2 | 59 | 20 | Goat | Chemistry and biology teacher |
| AGP3 | 37 | 10 | Goat, Deer, Cattle and Fish | Technician in DRB Hicom Defence Technologies (Deftech) |

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### 4.1 Types of Knowledge to be retained

Based on the interviews conducted, it was identified that there were five (5) types of knowledge owned by the agro entrepreneurs that are needed to be retained and they are marketing skills, analytical thinking, technical skills, managerial skills, and social skills.

#### 4.1.1 Marketing Skills

The agro entrepreneurs stated that their knowledge was derived from their interests in agro sector and from their experiences in the business area. They shared the same concept and stated that marketing skill is needed for a successful entrepreneur especially in agro sector. They used various channels and platforms to market their products such as social media, printed magazines and newspapers as well as through agents from various places. In entrepreneurship field, creativity and innovation are critically needed as a way of boosting up the profits of the business, generate demands and holding the customers' loyalty. The most important thing is that they need to invest on effective strategies or techniques to promote the products. This includes vary the livestock into multiple products.

#### 4.1.2 Analytical thinking

They stated that the problem solving is made based on their intuitions, experiences and from studies or readings. Often, they always encounter problems in many aspects including management, employees' commitment, demands issue, and external threats such as implementation of GST, drop of sales and diseases such as bird flu, as well as foot and mouth disease. To handle the issue, the agro entrepreneurs need to find and decide on appropriate ways or strategies to be used. The strategies include changing fodder system from releasing livestock in the field to feedlot system (providing grains in the fence), maintaining price of products, as well as seeking helps from other parties such as veterinary. According to Omerzel and Antonc̆ic̆ (2008) stated that the failure of an entrepreneur to solve problems often become the main barrier for the entrepreneur to be successful. Not everyone can solve problems and not everyone has knowledge to deal with it. Those who have the ability to tackle the problems and decide on the best thing to do are people who acquire rich knowledge. Thus, that is the reason why it need to be retained.

#### 4.1.3 Technical skill

Based on the findings, the agro entrepreneurs have the knowledge of building fences as well as handling machines and equipment's to process livestock and grains. The skill usually cannot be obtained through readings or story but through training and practical on field. AGP1, AGP2, and AGP3 always make sure to understand and be familiar with appropriate technologies and processes involved in the business especially dealing with their livestock. The ability to turn one product to another is something practical as it also involves calculations and measurements. They also have the knowledge in producing urea fertilizer which is acquired from the waste products. Technical skill is necessary to produce good products and services which includes operations, design, research and development, and environmental observation. Acquisition of technical skills differs one to another in which those who have the skill can survive in any condition by taking

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risks. (Kutzhanova et al., 2009, Cooney, 2012).

#### 4.1.4 Managerial skill

The agro entrepreneurs must know and understand diseases that are normally faced by the livestock such as bird flu, puru, pneumonia, and others. They need to periodically check on the livestock as well as learning to heal them. Involvement of a team in work is necessary in a business. They also always check and monitor their businesses' cash flows. In managing a team or employees, the agro entrepreneurs always

make sure that their employees are well trained and coached to conduct tasks in the right manner. Agro entrepreneurs should gain managerial skills in planning, organizing, leading and controlling the business. In fact, they have to know and understand things pertaining to finance, marketing, market development and competitions (Papulová &Mokroš, 2007).

#### 4.1.5. Social skills

According to the findings gathered, the agro entrepreneurs always make sure to show good attitude and respond to customers' needs and demands. Providing feedbacks and good services can attract the customers to purchase the products and trust them. Joe et al. (2013) stated that knowledge of relationships and social networks enables them to locate right contacts as well as referring to the right source. This means that the entrepreneurs will be able to know and contact the sources such as customers, agents, and supplier pertaining to their business. Joe et al. added, knowledge of social network relates to knowing how a society interact which will help in business product and problem solving. Part of the strategies to build and maintain relationship with the customers is by joining and conducting promotional activities.

### 5. Reasons for retaining the knowledge owned by the agro entrepreneurs

It is found that there are two main reasons of why the knowledge owned by the agro entrepreneurs need to be retained

#### 5.1 Long-term Business

One of the reasons of retaining the knowledge of the agro entrepreneurs is for long-term business. Knowledge owned by the agro entrepreneurs is valuable because it is acquired through broad experiences in business field. For the participants, the most important thing is interest. Their interests in agro-based business have led them to open their own business. Therefore, they do not have any plan to retire or leave the business because that is what they love to do. The entrepreneurs especially the first generation are those who work hard to establish and expand their business from the start. They know all corners in business industry and how they struggled to make their business success. The entrepreneurs found the opportunity of entering markets and promote their products. Previously, there are entrepreneurs who have to close down their business because they did not maximize the benefits of their knowledge. Knowledge such as marketing, analytical thinking, technical, managerial, and knowledge in social networking are among knowledge that is needed to be retained for benefits of the business' future development. An added value of an entrepreneur is that he must be able to create, look for opportunities, and

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to have enthusiastic in business.

### 5.2 Customers' Loyalty

Another reason for retaining the knowledge that is found in this study is for holding the customers' loyalty. Maintaining the customers' loyalty and trust helps the business to run for a long period of time. This is because the customers own the purchasing and bargaining power towards the products. Based on the findings, the agro entrepreneurs agreed that retaining their knowledge will also hold and maintain their customers' loyalty. This is because they know their customers well including their demands and needs.

According to the agro entrepreneurs, one way to keep their customers' loyalty is through marketing strategy in which they maintain the price and ensuring the quality of the livestock. Currently, numbers of entrepreneurs keep growing and the agro industry has becoming more competitive. In order to hold our customers, they have to meet each of the customer's needs and expectations (Mascareigne, 2009). When the customers satisfy and trust with their products and services, they will return.

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## 6 Strategies for knowledge retention

Based on the interviews conducted, it is found that there are few strategies that are preferred by the respondent to capture and retain their knowledge and they are through community of practice, training and coaching.

### 6.1 Community of Practice (CoP)

Ardichvili (2006) stated that CoPs allows the dissemination of tacit knowledge which is difficult to be communicated (Nonaka, 1994; Polany, 1957) because it is mostly cited in a specific context. Based on the findings gathered, the agro entrepreneurs agreed that they gain their knowledge by interacting with a group of entrepreneurs in agro sector as well as breeders. The agro entrepreneurs also join societies such as Persatuan Penternak dan Pengusaha Ayam Kedah/Perlis and Persatuan Penternak Lembu dan Kambing Malaysia. The entrepreneurs always held meetings to discuss matters pertaining to agro sector as well as management of livestock. Other than that, social media also plays important role in gathering and creating CoP because they can share information among each other without face-to-face interactions. This is because people nowadays prefer to use technology or computerized applications to share and transfer their knowledge.

### 6.2 Training

The participants also conduct and attend trainings for the purpose of gaining and transferring knowledge with other entrepreneurs. Trainings are given to those who are interested in learning about managing of business and livestock. Most people will invite the participants to give talk and trainings. In fact, they also do the training on field in which the participants will learn through

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practical activities such as slaughtering livestock and processing grains. Competencies such as honesty and punctuality are very important and should be acquired by entrepreneurs. Therefore, the employees and students of the agro entrepreneurs also are trained to have that competency.

### 6.3 Coaching

The participants also prefer coaching as the strategy to share and transfer their knowledge. By teaching and providing guides to their employees and students, the knowledge is transferred. The participants stated that they always make sure their employees know all processes and work flow of the business as well as their roles and responsibilities. They are coached on handling the livestock, managing customers, and healing the livestock. Retention of knowledge is needed for the purpose of ensuring the productivity of the SMEs while coaching is the driver for a quality business environment (Herman, 2009).

## 7. Conclusion

It is concluded that in retaining knowledge of the agro entrepreneurs, it is crucial for the organization to identify types of knowledge owned by the agro entrepreneurs that should be retained. The findings of this study suggested five types of knowledge that need to be retained from the agro entrepreneurs are; marketing skills, analytical thinking skills, managerial skills, technical skills, and social networking skills. Identifying the knowledge helps the organization to plan to capture, preserve, and share with other employees or entrepreneurs before they leave. This study also highlights the reasons for retaining the knowledge for the benefits of the organization and preferred strategies to be used in capturing and transferring the knowledge. The findings gathered are limited due to fewer numbers of participants because it only covers three participants to represent other agro entrepreneurs. However, it is believed that the findings of this study are sufficient to represent the population of agro entrepreneurs in Malaysia because they have the same nature in the business area.

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# An Investigation on Multiple Intelligence of Students from the Faculty of Business Management (FPP) and Faculty of Computer and Mathematical Sciences (FSKM), Universiti Teknologi MARA (UiTM)

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**Abstract**

The purpose of this study is to identify the multiple intelligence of students at Universiti Teknologi MARA (UiTM), Perak and Melaka Campuses. Two faculties are involved in this study which are Business Management (FPP) and Computer & Mathematical Sciences (FSKM). 81 FPP students and 43 FSKM students were respondents of this study which employed the multiple intelligences test identified by Howard Gardner. The survey consisted of nine intelligence areas which are linguistic, musical, logical-mathematical, spatial, bodily-kinesthetic, interpersonal, intrapersonal, naturalistic and existential. The surveys were conducted online throughout the semester. Descriptive analysis via frequency was performed using horizontal bar-chart to describe the data collected. Statistical Package for Social Sciences (SPSS) was used in the data analysis process to test the differences on multiple intelligences between the two faculties. Overall, FPP scores were higher than FSKM in all multiple intelligences. This research is supported by previous research done by Salehi and Germai (2012). Traditionally, Social Science students would typically be perceived to have more Linguistics Intelligence while Science Technology students would be

perceived to have more Mathematical Intelligence. The findings can be used by educators to translate it into approaches in learning strategies and to incorporate it into the curriculum.

**Keywords:** multiple intelligence, Howard Gardner model, student's preferences, student's personal potential, learning strategies.

## 1. Introduction

Howard Gardner proposed the Multiple Intelligence (MI) theory in 1983 with his published book, *Frames of Mind*. To date, his theory became a reference for the education, teaching and training communities to understand and teach many aspects of human intelligence, learning style, personality and behavior both in education and industry.

Based on this theory, Gardner indicates that human intelligence capacities consist of nine intelligence areas which are linguistic, musical, logical-mathematical, spatial, bodily- kinesthetic, interpersonal, intrapersonal, naturalistic and existential (Gardner, 1983). He suggests that different intelligence areas may be independent of each other; a person can be low in one domain area but high in another. All of us possess the intelligence areas but in varying degrees of strength and skills. Thus, he defines intelligence as "an ability or set of abilities that allow a person to solve a problem or fashion a product that is valued in one or more cultures".

In education, this means that individuals who have different intelligence types may also have different learning styles. Therefore, individuals can learn when the instructional activities are catered according to their intelligent types (Armstrong, 2008 as cited in Sadeghi 2013) as cited in Armstrong, 2008). According to the multiple intelligences theory, not only do all individuals possess numerous mental representations and intellectual languages, but individuals also differ from one another in the forms of these representations, their relative strengths, and the ways in which these representaions can be changed.

This research examines the type of multiple intelligence among students at Universiti Teknologi MARA (UiTM), Perak and Melaka Campuses. Two faculties were involved which are Business Management (FPP) and Computer & Mathematical Sciences (FSKM).

## 2. Research Methodology

### 2.1 Data Collection

Data were collected by using a structured questionnaire. The instrument was chosen as it is one of the fastest ways to collect information. The questionnaire consists of a formalized set of questions. The respondents of the study were 81 students from FPP and 43 students from FSKM. The surveys were conducted online throughout the semester. Descriptive analysis via frequency count was performed using horizontal bar- chart to describe the data collected. Then cross-tab analyses using the Statistical Package for Social Sciences (SPSS) were run to test the differences on multiple intelligences between the two faculties.

### 2.2 Sampling Method

According to Sekaran (2009), sampling is a process of choosing an adequate number of elements from the population. Hence, sampling design and sample size are the two most important elements to establish the representativeness of the sample generalizability. The study used probability sampling which is a simple random sampling when distributing questionnaires to the respondents since this method can highly represent the population (Black, 1999).

## 3. Data Analysis and Findings

### 3.1 Descriptive Analysis

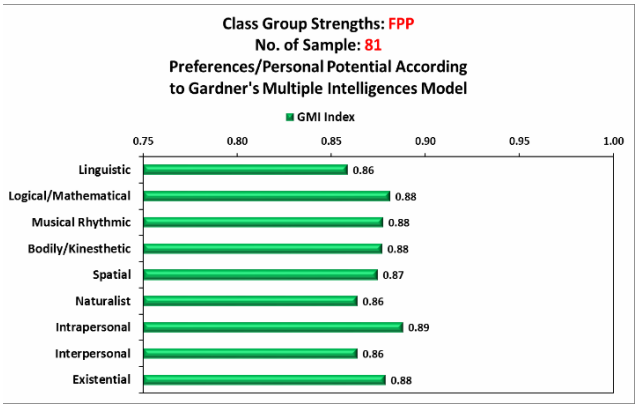


Fig.1 Preferences/personal potential of FPP

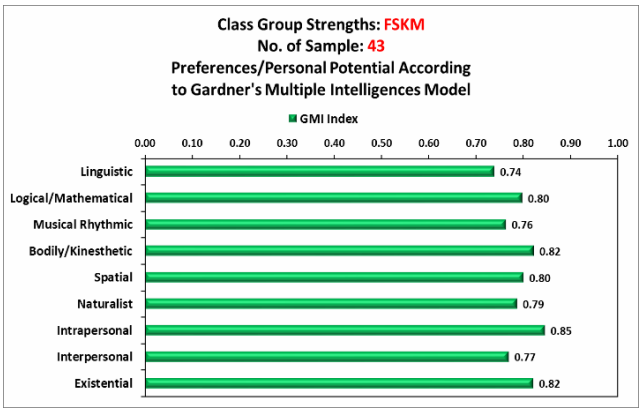


Fig.2 Preferences/personal potential of FSKM

Those who possess linguistic intelligence have a very good command of vocabulary, the function of language and grammar. Activities that involve hearing, listening, impromptu or formal speaking, tongue twisters, humor, oral or silent reading, documentation, creative writing, spelling, journal and poetry will highly benefit these types of students. Based on the linguistic intelligence findings, it is shown that overall, FSKM students' MI score (0.74) is lower than FPP (0.86). This may be the nature of the course and the subjects that are offered. For FSKM students, the courses are heavy on calculations and are theory based which do not allow these students to interact and use their linguistic capabilities to the fullest as compared to FPP students.

Logical-mathematical intelligence involves students who think in logical patterns and organize information systematically. Activities that involve abstract symbols/formulas, outlining, graphic organizers, numeric sequences, calculation, deciphering codes, problem solving will ignite the potential of such students. The findings show that FPP students' score (0.88) is higher than FSKM students (0.80); this might be due to the difficulty level of the subjects, such as basic Mathematics for FPP and a more difficult level for FSKM.

Learners who are sensitive to pitch, melody, rhythm, and tone as in a composer possess musical intelligence. Musical intelligence uses activities that involve audio tape, music recitals, singing on key, whistling, humming, environmental sounds, percussion vibrations, rhythmic patterns, music composition, and tonal patterns. Based on the findings, the MI score for FPP students (0.88) is higher than FSKM students (0.76). This might be that business students are more musically-inclined, imaginative and creative while computer students think better using logic, reasoning, analysis and numbers.

Spatial intelligence students enjoy highly visual experiences. They perceive the world accurately and try to re-create or transform aspects of that world as in a sculptor or airplane pilot. Spatial learners often want to see the connection between what they visualize and what they read. Use activities that involve art, pictures, sculpture, drawings, doodling, mind mapping, patterns/designs, color schemes, active imagination, imagery, block building. For this type of intelligence, FPP students recorded a higher score which is at (0.87) than FSKM students with (0.80) as Business students easily relate with visuals or pictures to fulfill a learning task. FSKM students prefer numbers and mathematical calculations to solve problems and learn.

Students with bodily kinesthetic intelligence on the other hand are able to use the body skillfully and handle objects adroitly, as in an athlete or dancer. Activities such as role playing, physical gestures, drama, inventing, ball passing, sports games, physical exercise, body language and dancing are highly recommended for these types of students. FPP students' bodily kinesthetic intelligence (0.88) is higher than FSKM students (0.82) whereby students with this form of intelligence prefer to engage in hands-on activities which assist them to learn better.

Interpersonal intelligence consists of students/learners who understand people and relationship and prefer to work in groups. Learners think by bouncing ideas off of each other and need to work either in groups or with a partner to generate ideas. It is suggested that activities which involve group projects, division of labor, sensing others' motives, receiving/giving feedback, collaboration skills should be used. The findings show that FPP students score higher (0.86) than FSKM students (0.77).

Intrapersonal intelligence possesses access to one's emotional life as a means to understand one self and others exhibited by individuals with accurate views of themselves. Use activities that involve emotional processing, silent reflection methods, thinking strategies, concentration skills, higher order reasoning, "centering" practices, and meta- cognitive techniques. The findings show that FPP students' score (0.89) is higher than FSKM students (0.85).

Naturalist intelligence is more connected to the outside world, enjoys nature and is good with animals. This form of intelligence deals with sensing patterns in and making connections to

elements in nature. Use activities that involve bringing the outdoors into the class, relating to the natural world, charting, mapping changes, observing wildlife, keeping journals or logs for effective learning. The findings show that the score for students from FPP (0.86) is higher than FSKM (0.79).

Existential intelligence is the latest addition to Gardner's theory of multiple intelligences. For this type of intelligence, the findings show that FPP (0.88) scores higher than FSKM (0.82). Consecutively, existential intelligence inclines towards spiritual sensitivity to tackle questions like meaning about human existence and life.

Overall, FPP scores are higher than FSKM in all MI. This research is supported by previous research done by Salehi and Germai (2012). Traditionally, Social Science students would typically be perceived to having more Linguistics Intelligence while Science and Technology students would be perceived to have more Mathematical Intelligence (Salehi & Germai, 2012). However, in this study, FPP/ Social Sciences students seem to attain a higher mean based on the multiple intelligence indexes in all intellectual composites including the Logical /Mathematical intelligence index as compared to FSKM/Science and Technology students.

### 3.2 Cross-tabs analysis

**Table 1 Summary of Test Differences**

| Types of Intelligence | Pearson Chi-Square | Df | P-value |
|---|---|---|---|
| Linguistic | 242.341 | 238 | 0.41 |
| Logical/ Mathematical | 107.295 | 120 | 0.79 |
| Musical Rhythmic | 175.525 | 168 | 0.33 |
| Bodily/ Kinesthetic | 108.284 | 108 | 0.474 |
| Spatial | 149.869 | 156 | 0.623 |
| Naturalist | 123.105 | 120 | 0.405 |
| Intrapersonal | 94.317 | 110 | 0.857 |
| Interpersonal | 155.338 | 169 | 0.767 |
| Existential | 123.875 | 143 | 0.874 |

A cross-tabulation is done to determine if there is a significant difference between the two faculties. The analysis is based on results at 1% significance level of the Pearson Chi- Square. Table 1 shows all types of intelligence are greater than 1% of significance value (p- value). This indicates that at 99% confidence, there is no significant difference on the types of intelligence between FSKM and FPP.

## 4. Discussion

**Table 2 The number of students based on faculty and gender**

| Faculty | Gender | |
|---|---|---|
| | MALE | FEMALE |
| FPP | 30 | 51 |
| FSKM | 14 | 29 |
| Total | 44 | 80 |

The high MI index for FPP students indicates that their multiple intelligences are at par with their FSKM counterparts. It is also noted that the higher MI index for FSKM students could very much be contributed by the female students. Female students are said to be more focused in achieving their personal goals while male students are generally more mathematically inclined than female students (Saban, 2009). This can be seen from the small margin of index differences of both female students in FPP and FSKM groups. The small number of male FPP students and female FSKM students could also contribute to the lopsided MI index.

Profiling MI index could be used to establish the intelligence strength of a particular class and thus is able to help educators to maximize learning by considering the students' preferences. For example, the approach that could be considered for FSKM students that show high intrapersonal intelligence is to get the students to focus on what personal goals they can achieve from the learning instructions, what strength they anticipate to use to solve problems and what course of action that they would undertake to solve that problem. It is worth to note that intrapersonal intelligences subscale is closely related to spatial and logical mathematical intelligences (McNamee et. al., 2009).

Another interesting finding that needs further exploration is the existential intelligence area which is ranked high in both groups. Various literature reviews do not cover this component. It seems that this component focuses on personal spirituality which is privileged to the privacy of the human mind and is not visible (Banalan, 2013). However, the approach for existential intelligence actually could be applied in numerous ways. The spiritual conscience that God exist and Allah brought us to existence and guided us to our purpose of living that is to worship Him :-

*"And I did not create the jinn and mankind except to worship Me*".
*- Al Quran (51:56)*

This would ultimately get the students to focus on learning and acquiring knowledge besides, applying them to solve problems with a high sense of right and wrong for the betterment of mankind and its surrounding nature. It is suggested that students who possess existential intelligence tend to prefer group thinking, preaching and worshiping learning styles. Thus, the lecturer or instructor should understand and execute the best teaching method to suit with the existential styles. Some theorists suggested that existential students prefer individual freedom and instructors should create opportunities for the students to make choices that would shape

what they learn.

The MI index between FPP and FSKM female students in this study did not differ very much as compared to the index gap between FPP and FSKM male students. However, further studies need to be done and more faculties should be included. Based on the three top highest MI mean, lecturers could consider varying the approach that is associated with real life situations environment (Bodily/Kinesthetic), or connecting moral values (Existential), or achieving high professional status (Intrapersonal).

## 5. Conclusion

The multiple intelligence profiling from the MI test is able to give some insights about students' strengths, weaknesses and potentials which could help educators to translate it into approaches in learning strategies and to incorporate it into the curriculum. MI has its potential usage for students too, as it could help students identify their own learning preferences. In this study, the MI test revealed that conventional perceptions on FPP and FSKM intelligence traits may be incorrect after all.

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# Students' Academic Achievement for Taxation Courses – A Comparative Study

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**Abstract**

Accounting education is a discipline, profession and platform for academicians as educators and researchers to conduct various studies on students' academic achievement. Various courses offered in the field of accounting, such as financial reporting, management accounting, auditing and taxation. The taxation course is specifically evolving in response to changes in economy, budgets, environment and the needs of the stakeholders. In line with these changes, accounting educators continue to refine the content of the taxation course through curriculum review to reflect the most current and relevant needs of the stakeholders. Taxation courses at under graduate levels basically involve two major streams: individual taxation and corporate taxation. The content delivery of these taxation courses are merely in the form of lectures, tutorials and other means of conveyances such as presentations and assignments. Various ways of teaching delivery methods enable rewarding and exciting teaching and learning environment of the taxation courses, which results in an improvement of the students' academic achievement. As such, this study asserts to determine if there is any difference in the students' academic achievement for taxation courses with the two different streams of an individual taxation and corporate taxation for two groups of students. The students' academic achievement of their final semester of grade point average and the taxation courses grades were extracted from their academic records for data analysis. The independent t-test results found that there is a no significant difference between the two groups of students for an individual taxation course, whilst there is a significant difference for corporate taxation course for the two groups of students.

**Keywords:** Academic achievement, Accounting education, Comparative study, Taxation.

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## 1. Introduction

Tax scholars such as Sommerfeld (1966) and Barjoyai (1992) had long called for tax education to be incorporated in all disciplines in all higher learning institutions. Tax education is important for all individuals as it is regarded as a universal knowledge that every responsible citizen need to be knowledgeable at (Palil, Md Akir and Wan Ahmad, 2013). By equipping individuals with sufficient taxation knowledge allows them to become educated taxpayers in the aspect of tax planning, tax laws, tax consultation and the likes.

This is also among the program outcomes that the Diploma in Accountancy (DIA) program in Universiti Teknologi MARA (UiTM) would like to achieve. The two and a half-year DIA program require their accounting students to sit for their *Taxation 1 - Individual Taxation* and *Taxation 2 - Corporate Taxation* courses during their fourth and fifth semester of study. The program outcomes for these two courses stipulate that the accounting students should possess various technical knowledge and skills on matters pertaining to individual and corporate tax.

Taxation 1 and Taxation 2 courses are core accounting courses for DIA program which would require a passing grade of a minimum of C grade (or a 2.00 out of 4.00 grade point). Students who fail to achieve this minimum grade will have to repeat the courses up to a maximum of three times each or else they would have to be withdrawn from the DIA program. It has been observed that some DIA students prefer to defer their enrollment in these taxation courses when they are struggling to pass other core accounting courses such as financial accounting and reporting. As such, the objective of the present study is to examine whether there is any difference in DIA students' academic achievement who have sat for their Taxation 1 and Taxation 2 courses.

Thus far, this paper has described the current state of enrollment in taxation courses at the university by DIA students. In the next section, a deeper understanding of the issue in relations to the objective of the study will be considered by means of reviewing previous literatures on the said subject matter.

## 2. Review of Literature

The process of learning cannot be taken lightly as it involves a number of attributes including passion, interest and the gravity of importance in acquiring the knowledge for individual's development and advancement. Honey and Mumford (1992) suggested that learning exists when someone can do something that he could not do before. In order to examine aspects of students' learning approaches, some argues that students are able to learn effectively through the use of effective learning techniques that could help students achieve their learning goals (Dunlosky, Rawson, Marsh, Nathan, & Willingham, 2013). Several studies have then been conducted to address various aspects of learning. These include examination on the teaching approaches, the use of computers as well as the effect of visual aids and instructional media on students' academic achievement (see Ogilby, 2000; Abraham, 1987; Nouri & Shahid, 2008). The results of these studies were often mixed. Beets and Lobingier (2001) found no differences in students' academic

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achievement using computerized instructional media, while Nouri and Shahid (2008) indicated that students have significant understanding when a lecturer uses visual aids such as a PowerPoint Presentation in their lectures. In a more recent study, Chiang, Nouri and Samatha (2014) revealed that differences in the teaching approaches (traditional versus user) in introductory financial accounting did not affect students' academic achievement in finance course. However, they also found that the students' past achievement in macroeconomics, statistics and GPA prior taking the finance course affect the students' academic achievement in a finance course. In supporting the use of GPA, Lyons and Bandura (2017) argue that GPA is useful in predicting skill performance and success on a job.

As far as final examinations are the main concern, on-going assessments (such as assignments, quizzes, and tests) also affect students' academic achievement. Elikai and

Baker (1988) stated that quizzes are worth a significant part of a particular course grade, because it can enhance students' academic achievement in accounting. Likewise, Almer, Jones and Moeckel (1998) showed that a student's score in introductory accounting based on essay quizzes was higher than one-minute paper quizzes. Similarly, Brink (2013) showed that utilizing both pre and post lecture quizzes can lead to sufficient time of students' preparation which in return leads to significant achievement in their academic grades. The increased of students' preparation time can be enhanced through students' participation during class discussions. This may then resulted in more efficient and effective use of lecture time which resulted in a significant enhancement in students' academic achievements on their accounting courses and subsequent examinations.

In addition, there are some other factors such as the length of a semester which also plays an important role in students' academic achievement. There are traditional length of semester for fourteen-week of study and an intensive course of five weeks of study. Austin and Gustafson (2006) using a database of 45,000 observations found that students who took intensive courses of four weeks had higher grades than those who took traditional sixteen-week semester courses. Students taking intensive courses may perform better since intensive courses are in condensed and compressed format. They will be more focus because they can concentrate more on the courses taken during intensive due to only maximum two courses registered (maximum only two courses are allowed for intensive course registration).

Apart from instructional media used by the instructors during teaching and learning process, together with the effect of on-going assessment and the length of semesters on the students' academic achievement, other factors of students' attributes, students' efforts, abilities and traits also impacted on the students' academic achievement (Tailab, 2013). Weinstein (1999) who examined students' attitudes toward accounting found that the students' positive perception of introductory accounting improved their performance in accounting (Weinstein, 1999). In contrast, Atieh (1997) showed that students from Saudi Arabian had a negative attitude toward accounting because they consider accounting as a difficult subject. In a different study, Fallan (2006) discovered that students who majors in accounting and taxation, auditing, economics and finance are associated with the personality type of sensing and judging, and preferred traditional lectures compared to problem based learning (PBL). The above review of literature indicates that there

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are various factors may have some degree of association with the students' academic achievement.

As such, the DIA program has been structured carefully and purposefully to fulfill the requirements of potential employers in the field of accountancy for the workforce of this country. As such, accounting students should fulfill the required course requirements to help them further in their accounting careers.

## 3. Methodology and Results

The objective of this study is to examine differences in the DIA students' academic achievement in *Taxation 1- Individual Taxation* and *Taxation 2 – Corporate Taxation* courses. To evaluate such differences, this study uses secondary data of students' examination result in *Taxation 1* and *Taxation 2* courses for DIA program at UiTM Johor. This data was based on a population of a final year undergraduate students who had enrolled in both *Taxation 1* course (in fourth semester) and *Taxation 2* course (in fifth semester) for October 2016 and March 2017 examination, respectively. Of the 57 students, three students were excluded from this study because they had not taken the *Taxation 2* course for March 2017 examination, resulted in 54 students as the final sample in this study.

The data was in the form of grades from A+ to F in the respective taxation course. Therefore, a content analysis method was employed to extract the data. Content analysis is a method of analyzing written, verbal or visual data (Cole, 1988). The data was for taxation grades are as follows: A+ and A for 4.00; A- for 3.67; B+ for 3.33; B for 3.00; B- for 2.67; C+ for 2.33; C for 2.00; C- for 1.67; D+ for 1.33; D for 1.00; E for 0.67 and finally F for 0.00. For example, the grade of 'A-' represents 3.67. The Grade Point Average (GPA) is in the range of 0.00 to 4.00. Students who earn the GPA of 2.00 and above indicates that they have passed the respective course, while a GPA below than 2.00 represents students who have failed the respective course. It means a higher GPA indicates a student with better academic performance in a course.

The data was analyzed using descriptive and *t-test* statistics. *T-test* was used to cater for the analysis of differences of students' achievement in Taxation 1 and Taxation 2. For this reason, the students were divided into two groups, that is Group A and Group B, because they were registered in different class that had different timetable, different classroom environment and were taught by different lecturers during each taxation course. To conclude whether there is a statistical significant difference in the mean of students' achievement between both groups, this study uses the significance level of 0.05 ($p<0.05$).

### 3.1 Respondents' Profile

Table 1 shows the frequency distribution of the students in this study. The students are in the range of age between 19 to 20 years old. In panel A, of the 54 students, six students are male (11%), whereas 89% are female students. As indicated in panel B, 46% of these students (25) are from Group A, while the remaining 42% (29) are from Group B. Meanwhile, panel C and panel D show that the passing rate for Taxation 1 is 98% and Taxation 2 is 100% during the respective

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semester.

**Table 1 Students' Distribution**

| **Panel A: Distribution by gender** | | |
|---|---|---|
| **Gender** | **Numbers** | **Percentage (%)** |
| Male | 6 | 11 |
| Female | 48 | 89 |
| **Total** | **54** | **100** |
| **Panel B: Distribution by group** | | |
| **Group** | **Numbers** | **Percentage (%)** |
| A | 25 | 46 |
| B | 29 | 54 |
| **Total** | **54** | **100** |
| **Panel C: Distribution by passing rate in Taxation 1** | | |
| Pass | 53 | 98.1 |
| Fail | 1 | 1.9 |
| **Total** | **54** | **100** |
| **Panel C: Distribution by passing rate in Taxation 2** | | |
| Pass | 54 | 100 |
| Fail | 0 | 0 |
| **Total** | **54** | **100** |

### 3.2 Analysis of Findings

Table 2 reports an analysis on the GPA of the sample students for each Taxation 1 and Taxation 2 course.

**Table 2 Analysis of GPA**

| | **Taxation 1** | | **Taxation 2** | |
|---|---|---|---|---|
| **Range of GPA** | **Numbers** | **Percentage (%)** | **Numbers** | **Percentage (%)** |
| Above 3.50 | 3 | 5.6 | 4 | 7.4 |
| 3.00 – 3.49 | 28 | 51.9 | 31 | 57.4 |
| 2.50 – 2.99 | 11 | 20.4 | 14 | 25.9 |
| 2.00 – 2.49 | 11 | 20.4 | 5 | 9.3 |
| 1.50 – 1.99 | 0 | 0 | 0 | 0 |
| 1.00 – 1.49 | 1 | 1.7 | 0 | 0 |
| **Total** | **54** | **100** | **54** | **100** |

The results indicate that the students' achievement in Taxation 2 is better than Taxation 1 because given the same sample of students, there is a higher percentage of student scored a

GPA of 3.00 and above in Taxation 2 (64.8%), as opposed to Taxation 1 (57.5%).

When the same sample students enrolled for Taxation 2 course, all of them passed the course. The majority of them obtained a GPA of 3.00 and above (64.8%), with four students had a GPA of above 3.50. The lowest GPA was in the range of 2.00 to 2.49 earned by five students. For Taxation 1 course, of the 54 students, the majority of students scored a range of GPA between 3.00 to 3.49 (51.9%). Only three students (5.6%) managed to obtain a GPA of 3.50 above for this program, while one student obtained the lowest GPA of 1.00.

**Table 3 Results of t-tests for Taxation 1 by Group**

| | Group A | | | Group B | | | 95% CI for Mean Difference | | |
|---|---|---|---|---|---|---|---|---|---|
| | M | SD | n | M | SD | n | | t | df |
| Taxation 1 | 2.4404 | .50682 | 25 | 2.3559 | .45473 | 29 | .13086 | .646 | 52 |

* p < .05 (Sig. 2-tailed)

**Table 4 Results of t-tests for Taxation 2 by Group**

| | Group A | | | Group B | | | 95% CI for Mean Difference | | |
|---|---|---|---|---|---|---|---|---|---|
| | M | SD | n | M | SD | n | | t | df |
| Taxation 2 | 2.8792 | .51711 | 25 | 2.9200 | .47706 | 29 | .13535 | .301* | 52 |

* p < .05 (Sig. 2-tailed)

Table 3 and Table 4 present further analysis on whether the GPA for each course is different between two groups of students using the independent sample *t-test*. In Table 3, the result shows the mean GPA of Taxation 1 course. The mean GPA for Group A is 2.44, while the mean GPA for Group B is 2.35. However, the difference in the mean GPA of both groups for Taxation 1 course is statistically NOT significant ($p>0.05$).

The mean GPA of Taxation 2 course in Table 4 depicts that the mean for Group A is 2.88 and Group B is 2.92. When the mean GPA of both groups are compared, the results show that the difference in the mean is statistically significant ($p<0.05$).

The above findings indicate that while there is no significant difference in the mean of students' achievement between Group A and Group B during enrolling Taxation 1 course, the mean achievement for both groups in Taxation 2 course are significantly different. Some explanation for no difference during Taxation 1 could be due to this course was the first taxation course undertaken by the students during their DIA program. At this stage, since all students have no basic knowledge in taxation, it is possible that they may employ a similar learning style to grasp the fundamental of taxation. Over time, some of them may have familiarized themselves with the fundamental of taxation. At this stage, they may have some level of confident about their level of knowledge in taxation. Thus, they are able to plan their fourteen-week studies properly. Given this, together with differences in the timetable, class environment, and lecturers may explain why there is a significant difference between groups when enrolling for Taxation 2. However, this is

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only a possible explanation for such difference since the purpose of this study is not to explain how differences between groups occur, but merely to examine whether differences between groups exist.

## 4. Conclusions

Among all the courses in accounting field, taxation courses have been one of the most rewarding. First, students who take the course usually have a higher interest level in this course because of its current information towards budgetary policy in Malaysia. The hands- on materials and hand-outs related to the course also make it interesting and help the students relate better to the course materials. It is also a fun course for the lecturers because there are so many ways in which the courses can be taught. At the end of the basic course in Taxation 1 for individuals, students should be able to prepare taxes for themselves, friends, and family members. Of course, the skill is valuable as an entry-level point in many public accounting firms. For example, students can obtain an internship with a public accounting firm attached to tax system. In turn, this real experience gives them a better platform in securing a full-time job with their future employers or improves their opportunities with another employer. Taxation 2 requires advanced thinking skills from the students as the course covers the aspects of Malaysia corporate taxation. With the basic knowledge that the students have gained in Taxation 1, the students should grasp the concepts and principles under the corporate tax easily. In addition of the students' hard effort and good attitude, their performance can be improved (Weinstein, 1999).

It is expected that the findings of this study would provide insights on studies related to taxation in accounting education. The findings of this study also contribute towards enhancing both the practical and theoretical aspects of taxation. It also provides inputs to the universities in developing and updating their curriculum review so as to be relevant in fulfilling the job market and other relevant stakeholders.

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# Working capital management and its effect on profitability: Empirical evidence from Malaysian capital market

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**Abstract**

This study examines the effect of working capital management on profitability among 803 companies listed on Bursa Malaysia. The data collected from DataStream for the year 2010 to 2014 was analyzed using panel data analysis. It was found that number of sales inventory days and number of account receivable days determine profitability of Malaysian public listed companies. Additionally, the debt to equity ratio, current ratio and firm size also has significant effects on the firm's profitability.

**Keywords:** Working capital management, Performance, ROA, Tobin Q

## 1. Introduction

Working capital refers to the amount of capital that is promptly accessible to the company. The way firms manage its working capital will give impact on their liquidity and profitability. In fact, many companies have invested large amounts of resources in the account receivable and inventory, besides regularly depended on short term payables as a source of refinancing the company operations (Deloof, 2003). In addition to that, large size inventory and the facilities of trade credit policy may lead to high volume of sales. Sufficient inventories may reduce the risk of a stock-out; and by allowing the customers to enjoy product before paying for it also can attract them to buy from the company.

Working capital can be seen statically as the harmony between current assets and current liabilities. Alternatively, it can be seen as the harmonization between profit generating and material purchasing actions of a company. Cash conversion cycle (CCC), one of the working capital management (WCM) measures, is the timeframe between cash outflow on purchasing materials until the money is received from sales of the products. Simply put, CCC is a number of days of operation either account receivables, inventory and payable. The higher the number of CCC in days, the costly

investment is required in working capital. The length number of days of the CCC depends on the length of the number of sales inventory days (DSI), the number of account receivable days (DSO) and the number of account payable days (DPO).

The number of DSI is the average time taken to use the raw material in the company, change the raw materials into finished goods, and finally sell the finished goods to customers. The number of DSI may take monthly for a few sectors such as manufacturing company, or a few hours for some other sectors such as service sector. The number of DSO is the average time taken by credit customers to settle their accounts, while the number of DPO is the average time taken by a company to pay its trade payables.

According to Knauer and Wöhrmann (2013) enhancement of working capital balance means that the company should minimize the requirement of working capital and at the same time achieve optimum target of profit. Furthermore, effective WCM expands the firms' free cash flow, and builds the companies' development opportunities to give return to the shareholders. Along these lines, the firms are trying their best to achieve optimal level of working capital that help boosts their value (Aktas, Croci, & Petmezas, 2015). An effective WCM can promote better performance where disregard can be very dangerous to any firm (Christopher & Kamalavalli, 2009). The importance of working capital is widely discussed in the literature such as in Mohamad and Saad (2010). They portrayed efficient WCM as dealing in planning and controlling current assets and liabilities in a manner that it eliminates the risk of failure to meet short-term commitments in hands with the evasion of over investments in these assets. Siddique, Moniruzzaman, Khan and Mahmud (2009) show that the wasteful management of working capital does diminish gains as well as cause a concern to financial crisis. As a result, every company, regardless of its size and nature of business, needs essential measure of working capital. Consequently, effective WCM is the most critical component in looking after survival, solvency, liquidity and profitability of the concerned business organization. Along these lines, it can be stated that the approach in overseeing working capital has tremendous impact to the company performance.

Numerous empirical studies on WCM has been done around the world in relevant to its effect on the company' performance (for instance: Shin & Soenen, 1998); Padachi, 2006; Nazir & Afza, 2009; Pandey & Jaiswal, 2011; Singhania, Sharma, & Rohit, 2014). Despite to the existing evidence, findings from Malaysian's point of view may be different due to dissimilarity in business environment between different nations. Malaysia study in this area is sparse, so this study was led to add more literature. The purpose of this study is to identify the effect of DSI, DSO, DPO and CCC on the financial performance of Malaysian listed companies. These findings will facilitate companies to draw up a proper WCM to ensure that the company can achieve high profit without

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having liquidity problem.

## 2. Literature review

### 2.1 Working capital management concept

Working capital approaches varies according to business types. A manufacturing company put intensely in extra parts and components and has high amount of account receivables. A food retailer however, may have large inventories of products for resale but with only small amount of receivables. The manufacturing companies obviously need carefully thought on its receivables policy, while the food retailer may not grant any credit at all. WCM is dealing with the current assets and liabilities and how these two components correlate with each other. If companies do not have capacity to keep up an optimal level of working capital, they will have difficulty to run its daily operation. The current assets of a company should be sufficient to cover its current liabilities to ensure a reasonable margin of safety. Each of the current assets must be managed effectively to ensure that company able to pay its short-term obligation.

According to Dixon (1991), working capital policy is a function of two types of decisions: the appropriate level of investment in, and mix of currents assets for, a set level of activities and the chosen methods of financing this investment. He also explained further that the level of company's current assets and working capital, in respect of the company's total capital structure and flow of funds, is a tradeoff between profitability and risk. So, if there is little risk, an aggressive working capital requires minimum levels of cash, securities, debtors and inventories. However, if there is little stability, a more conservative policy will be called for, requiring high cash balances and high inventory reserves. The WCM is essential to the financial strength of all organizations. The amount invested in working capital is usually high so it is important to ensure their effective utilization (Padachi, Howorth, & Narasimhan, 2012). The net working capital refers to the differences between current assets and current liability (Knauer & Wöhrmann, 2013). Padachi et al. (2012) stated that working capital structure refers to the components of working capital and it indicates which components, account receivables, inventory or payable are needed for investment. Working capital can be regarded as the backbone of a company as inefficient WCM may lead to company downfall.

Due to the importance of WCM, an organization should identify clear approaches concerning different components of working capital. Rao (1989) stated that poor WCM could be due to misuse of company's cash for self-interest and delay payment to supplier. The failure of WCM may also due to mismatch between current and long term asset or liability. Evidence shows that WCM directly affect firm liquidity (Knauer & Wöhrmann, 2013) and influences the firm value (Kieschnick, Laplante, & Moussawi, 2013). Therefore, it shows that WCM is linked to the company profitability. To increase revenue, a company may decide to adopt loose trade credit policy, or hold huge amount of inventories to avoid stock out (García, Martínez, & Pedro, 2007;Garcia, Martins, & Brandão, 2011). However, these measures will lead to higher capital employed and increase the company cost of capital. Firms may also delay payment made to accounts payable to maintain their cash, as it is an inexpensive source of funding. The firms however, could loss financial benefits when missing the trade discounts that can help in cutting off the cost or face the risk of tarnishing their relationship with the suppliers. Aktas et al., (2015) provides a comprehensive

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evidence of a relationship between WCM and firm performance using an exhaustive US sample over a 30-year period between 1982 and 2011. They found that firms that converge to that optimal level of WCM, either by increasing or decreasing their investment in working capital, would improve their stock and operating performance over the subsequent period. They also reported that corporate investment is a channel through which efficient WCM transforms into superior firm performance. The results emphasizes that firms adopt aggressive working capital policy so that they can use the cash to more efficient use such as funding growth investment.

Firms must enhance their current liquidity position to stay stable at the season of disparities or economic problem. If they attempt to create higher returns back from its assets, an ideal harmony between liquidity and profitability for proficient utilization of its working capital is necessary. In a nutshell, firms should always monitor their working capital policy for better profitability, stability, reliability, growth and consistency of the companies (Khatik & Varghese, 2015).

**2.2 Number of sales inventory days**

The number of sales inventory days (DSI) refers to the number of days taken to hold stock before it is sold. Filbeck and Krueger (2005) stated that company success is partly depending on how effective the management manages their inventory. Huge inventory base and trade credit facilities may result to higher sales volume; and large amount of inventory in hand reduces the risk of a stock out (Bagchi, Chakrabarti, & Roy, 2012). However, huge inventory level may lead to wastage if they cannot be sold. Empirical evidence showed that companies that have high number of DSI obtained lower rates of return (Shin and Soenen (1998) Deloof 2003). The negative association between DSI and firms' profit had been widely reported in the literature (see: Mohamad and Saad (2010) Afeef (2011) Bieniasz and Gołaś (2011) Raheman, Qayyum and Afza (2011) which means that prolonging these cycles translated into a decrement in the profitability. The results confirm that industries, which are success in terms of WCM, are mainly due to proper inventory management. In fact, Mansoori and Muhammad (2012) who examined Singapore firms found that all components of cash conversion cycle have a negative association with profitability. Napompech (2012) examined companies listed on the Thailand Stock Exchange identified that gross operating profit was inversely related to number of sales inventory days and the number of receivables days. Ahmadpour, Zare and Rostami (2012) who reported negative relationship between inventories cycle and financial performance demonstrates that reducing cycle inventories at reasonable levels in optimal level of inventories held is one of the ways that managers can do to boost the profit of the companies.

Existing evidence documented that the lower the number of DSI, the higher the financial performance of the firm. This is proven from the findings on manufacturing companies of Pakistani firms (Majeed, Makki, Saleem, & Aziz, 2013), Bombay Stock Exchange companies (Singhania et al., 2014), tea firms from Kenya (Yegon, Kiprono, & Willy, 2014), Saudi Arabia cement firms (Almazari, 2014) and Iran listed companies (Rezaei & Pourali, 2015). In contrast, studies also reported positive association between DSI and profitability for Kenya, Pakistan and Bangladesh listed firms (see: (Makori & Jagongo, 2013; Onodje, 2014; Asaduzzaman & Chowdhury, 2014; Agha, 2014). Due to overwhelmed evidence supporting the negative association of the variables, it is hypothesized that,

H1: The number of sales inventory days is inversely related to the profitability of firms. Number of account receivable days

The number of account receivable days (DSO) refers to the time taken to collect cash from the customers. A firm success is partly depending on how effective it manages the receivables. If the company makes fast collection of receivables, it may not have cash problem to maintain the operational costs. Longer credit term however, will attract customers to purchase from the company as compared to the competitor.

Most empirical studies have shown that shorter DSO leads to higher profit. For instance, those studies were carried out in various countries such as in America (Shin & Soenen, 1998), Belgium (Deloof, 2003), US (Filbeck & Krueger, 2005), Vietnam (Dong & Su, 2010), Japan (Nobanee, Abdullatif, & AlHajjar, 2011), Poland (Bieniasz & Gołaś, 2011), India (Bagchi et al., 2012), Singapore (Mansoori & Muhammad, 2012), Karachi, (Afeef, 2011; Gakure, Cheluget, Onyango, & Keraro, 2012), Ghana (Ahmadpour et al., 2012; Akoto, Awunyo, & Angmor, 2013), Kenya (Makori & Jagongo, 2013), Pakistan (Majeed et al., 2013), Bombay (Singhania et al., 2014), Portuguese (Pais & Gama, 2015) and Iran (Ahmadpour et al., 2012; Rezaei & Pourali, 2015). Positive association between DSO and profit are also documented by previous studies (Agha, 2014; Asaduzzaman & Chowdhury, 2014; Onodje, 2014), but it was argued that sample size could have influence the results. Therefore, it is hypothesized that,

H2: The number of account receivable days is inversely related to the profitability of firms.

### 2.3 Number of account payable days

Deloof (2003) generally stated that, payment period is the time taken to settle accounts payments. Quick payment allows the company to enjoy cash discount and maintain good reputation with supplier. Delaying payment to the accounts payable however, enable company to use the cash for generating returns but it may jeopardize relationship with supplier and lost the cash discount. Both approaches may have impact on the company's financial performance. Existing evidence shows negative association between number of accounts payable days (DPO) and profit (see: Ahmadpour et al., 2012; Asaduzzaman & Chowdhury, 2014; Bieniasz & Gołaś, 2011; Deloof, 2003; Filbeck & Krueger, 2005; Mansoori & Muhammad, 2012; Mohamad & Saad, 2010; Rezaei & Pourali, 2015; Sabri, 2012; Shin & Soenen, 1998; Singhania et al., 2014; Zakaria & Amin, 2013). It suggests that firm's profit will increase if firms are fast in paying its account payable. Makori and Jagongo (2013) and Agha (2014) found positive association between DPO and profit. Their results suggest that if firms use the extra cash for other effective purpose while at the same time manage to maintain good reputation with the supplier, it will have positive effect on the profit. Insignificant result reported by Afeef (2011) indicates that regardless whether firm is quick or delay payment, it did not have impact on the firms' profit. It is hypothesized that,

H3: The number of account payable days is positively related to the profitability of firms.

### 2.4 Cash conversion cycle

The cash conversion cycle (CCC) is the prominent measurement of working capital management, that is, the time different between the cash outflow to purchase material, and cash inflow on sales.

The longer the cash conversion cycle, the higher the profitability is because it leads to higher sales. This is because there is need on the large inventory (DSI), shorter collection period (DSO) and more time taken to pay its payable (DPO) as the formula of cash conversion cycle was summation of DSI and DSO minus DPO. Richards and Laughlin (1980) stated that cash conversion cycle as a standard measure of the firm's operations and efficiency. Cash conversion cycle is also defined as the amount of time taken between purchases of raw material to the time taken cash is collected while doing the sales of the product. Good understanding on the role and drivers for working capital management to reach the right levels of working capital enable company to minimize risk, prepare for uncertainty and increase performance and profitability. Evidence supports negative association between CCC and profitability (see: Ahmadpour et al., 2012; Deloof, 2003; Dong & Su, 2010; Filbeck & Krueger, 2005; Jose, Lancaster, & Stevens, 1996; Majeed et al., 2013; Makori & Jagongo, 2013; Raheman et al., 2011; Rezaei & Pourali, 2015; Zakaria & Amin, 2013) suggest that the combination of the three working capital components (short DSI and DSO and long DPO) will result in higher financial performance. Nevertheless, results are mixed as some studied reported positive relationship between CCC and profitability (Abuzayed, 2012; Agha, 2014; Akoto et al., 2013; Asaduzzaman & Chowdhury, 2014; Mousavi & Jari, 2012) and insignificant finding (Jacob, 2014). The following hypothesis is developed:

H4: The cash conversion cycle is inversely related to the profitability of firms.

Figure 1 is the conceptual framework used in this study. Four independent variables measuring working capital are DSI, DSO, DPO and CCC is regressed to the company's profit measured by ROA and Tobin Q. The expected effect on the dependent variable is shown in the diagram.

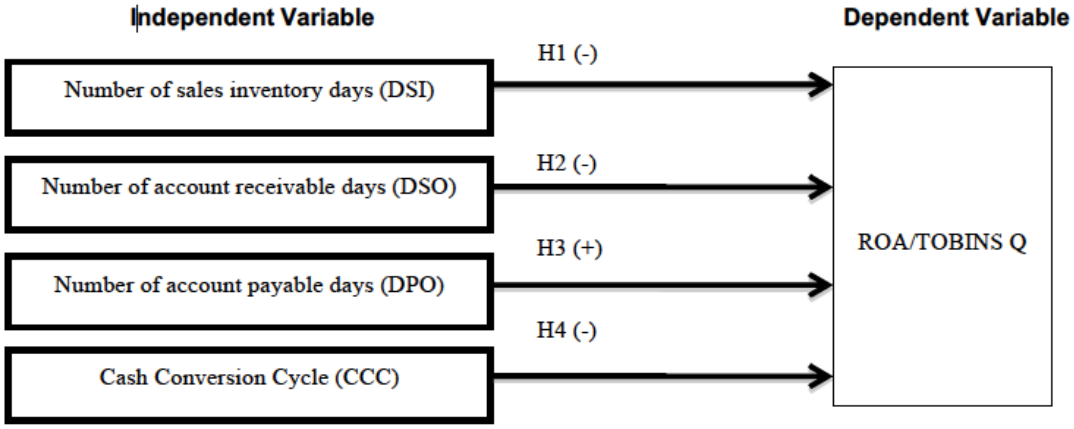


***Figure 1: Conceptual Framework***

## 3. Research methodology

### 3.1 Sample

This study examines Malaysian public listed companies in the main market of Bursa Malaysia from 2010 to 2014. All financial and unit trust companies were omitted from the study because of differences in regulatory requirements. In addition, the study excluded companies, which failed to comply with any obligations under Practice Note such as Practice Note 4 (PN4) and Practice Note 17 (PN17), and also companies with incomplete data. As a result, 4,015 observations for 803 companies across the five years were selected. Data was extracted from the annual reports and financial databases, DataStream.

### 3.2 Variables measurements

This study employs two dependent variables namely; ROA and Tobin Q to measure profitability. Independent variables included in the regression model are DSI, DSO, DPO and CCC. The control variables are firm size, current ratio and debt to equity ratio.

#### 3.2.1 Dependent variable: Profitability

This study uses two proxies for profitability namely (1) Tobin' Q calculated as market value of equity added by total leverage and divided by total asset, and (2) Return on asset (ROA) is calculated by net profit divided by total assets. Previous studies (e.g: Mohamad & Saad, 2010; Nazir & Afza, 2009) have adopted similar measure of profitability. Tobin Q reflects the company value given by financial markets with the value of a company's assets. A low Tobin Q that is between 0 and 1 means that the cost to replace the firm's assets is greater than the value of its share. This implies that the share is undervalued. Tobin Q greater than 1 means that a firm's share is more expensive than the replacement cost of its assets, which implies that the share is overvalued. ROA is a better measure since it measures efficiency of consuming assets to generate net income. Higher values of ROA show that business is more profitable. Table 3.1 presents the summary of the variable measurements.

**Table 3.1: Variable Measurement**

| Variables | Abbreviation | Measurements |
|---|---|---|
| **Dependent variable** | | |
| Tobin Q | TQ | (Market value of equity + total leverage) / total asset |
| Return on Assets | ROA | Net profit/Total Assets. |
| **Independent variable** | | |
| Number of sales inventory days | DSI | Inventory*365/Cost of Sales |
| Number of account receivable days | DSO | Accounts receivables*365/Sales |
| Number of account payable days | DPO | Accounts Payables*365/Cost of Sales |
| Cash Conversion Cycle | CCC | CCC=DSI + DSO - DPO |

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| **Control Variable** | | |
|---|---|---|
| Current ratio | CR | Current assets/Current liability |
| Debt to equity ratio | DTE | Total debt/Total equity |
| Size of the company | SIZE | Natural of logarithm of sales |

### 3.2.1 Independent variable: Working capital management

The CCC is used as a comprehensive measure of working capital as it shows the time lag between the cash outflow for the purchases of raw materials and the cash inflow for collection of sales of finished goods. The CCC is calculated as number of sales inventory days (DSI) plus number of account receivable days (DSO) minus number of account payable days (DPO). This measure therefore, reflects the difference between operating cycle time (DSI plus DSO) and DPO. Formally, CCC is computed as, DSI + DSO – DPO.

DSI is a measure for company inventory management. It may different significantly from industry to industry. A high ratio defines fast moving inventories and a low ratio defines slow moving or obsolete inventories in hand. A low ratio can also be the result of maintaining excessive amount of inventory needlessly. Maintaining excessive inventories means tidying up the capital that could be used in other profitable operations. The formula for calculating DSI is inventory multiplied by 365 days and divided by cost of goods sold. DSO shows how many times a company collects its account receivable. High ratio increases the liquidity of the company. It is calculated as accounts receivables multiplied by 365 days and divided by sales. DPO indicates the company's credit worthy. A high ratio implies fast or prompt payment to suppliers for the items acquired using a loan and a low ratio may be an indication of delayed payment. It is computed as accounts payable multiplied by 365 days and divided by the costs of goods sold. In addition to the CCC, each component of the working capital, DSI, DSO and DPO is also included in the regression model to identify their individual effect on profitability. Knauer and Wöhrmann (2013) stated that examining the effect of CCC alone on profitability might give misleading conclusion as tighter accounts receivable and inventory have positive effect on a firm performance.

### 3.3 Regression model

The effect of WCM on profitability was examined by applying panel data regression model using STATA software. In the multicollinearity test, CCC and DPO are highly correlated; and hence they are not included in the same regression model. The following regression models were run to test the hypotheses.

$$\text{Profitability} = \beta_0 + \beta_1 DSI_{it} + \beta_2 Size_{it} + \beta_3 CR_{it} + \beta_4 DTE_{it} + \varepsilon_{it} \quad (1)$$

$$\text{Profitability} = \beta_0 + \beta_1 DSO_{it} + \beta_2 Size_{it} + \beta_3 CR_{it} + \beta_4 DTE_{it} + \varepsilon_{it} \quad (2)$$

$$\text{Profitability} = \beta_0 + \beta_1 DPO_{it} + \beta_2 Size_{it} + \beta_3 CR_{it} + \beta_4 DTE_{it} + \varepsilon_{it} \quad (3)$$

$$\text{Profitability} = \beta_0 + \beta_1 CCC_{it} + \beta_2 Size_{it} + \beta_3 CR_{it} + \beta_4 DTE_{it} + \varepsilon_{it} \quad (4)$$

$$\text{Profitability} = \beta_0 + \beta_1 DSI_{it} + \beta_2 DSO_{it} + \beta_3 DPO_{it} + \beta_4 Size_{it} + \beta_5 CR_{it} + \beta_6 DTE_{it} + \varepsilon_{it} \quad (5)$$

$$\text{Profitability} = \beta_0 + \beta_1 DSI_{it} + \beta_2 DSO_{it} + \beta_3 CCC_{it} + \beta_4 Size_{it} + \beta_5 CR_{it} + \beta_6 DTE_{it} + \varepsilon_{it} \quad (6)$$

where,
Profitability = 1. Tobin Q (Market value of equity added by total leverage and divided by total asset)
= 2. ROA (Net Profit to total assets)
DSI = Inventory to cost of goods sold multiply by 365 days
DSO = Accounts receivable to sales multiplied by 365 days
DPO = Accounts payable to cost of goods sold multiplied by 365 days CCC = A sum of DSO and DSI minus DPO
Size = Natural logarithm of sales
CR = Current assets to current liability
DTE = Total debt to total equity
β = Beta coefficient
ε = error term

## 4. Findings and Discussion

### 4.1 Descriptive statistics

Table 4.1 indicates the sample companies by industries listed in Bursa Malaysia from 2010-2014. The largest sample for the sector is trading and services sectors with a total of 201 firms or 1,005 firm year observation which contributes 25.03% of the total sample percentage. Consumer products followed, with a total of 192 firms or 960 firm-year observations that represents 23.91% out of 803 firms' sample. The lowest sample for the industry is construction sectors with a total of 108 firms and 540 firm-year observations that contributes 13.45% out of 803 firm and 4015 firm-year observations sample.

**Table 4.1: Distribution of Sample Based on Sectors**

| Sectors | Total | Observation | Percentage (%) |
|---|---|---|---|
| Trading/ Services | 201 | 1005 | 25.03% |
| Consumer products | 192 | 960 | 23.91% |
| Industrial Products | 180 | 900 | 22.42% |
| Technology | 122 | 610 | 15.19% |
| Construction | 108 | 540 | 13.45% |
| TOTAL | 803 | 4015 | 100% |

Table 4.2 presents descriptive statistics. The average Tobin Q and ROA is 74% and 77% respectively. The sample of Malaysian public listed firms collected from their account receivable after an average of 126 days and took 115 days to sell their inventory. It took an average of 89 days to pay the account payable. The sample of Malaysian public listed firms took a longer period to collect from their account receivable (DSO) because most of the samples gave a generous trade credit facility that may result to higher volume of sales. Trade credit may boost sales in light of the fact that it permits customers to evaluate product quality before they pay for the item. Thus, they are dealt with slow type of account receivable turnover. As indicated by the CCC, the sample of Malaysian public listed firms took an average of 146 days to convert their inventory into cash. It can be seen that Malaysian public listed firms are quite fast in selling their inventory as compared to other countries such as in Jordan, where Sabri (2012), found that an average day

taken to sell their inventory was 262 days compared to Malaysia that is faster where it only takes 115 days to sell the inventories. Malaysia is closely similar to Singapore as shown by Mansoori and Muhammad (2012) as they took 110 days' average to sell its inventory. Malaysians are slow as compared to Jordan and Singapore in collecting the debt where Malaysian firms took 126 days versus Jordan and Singapore with only 112 days and 103 days respectively. In payment of the debt, Malaysian firms took an average of 89 days (Singapore took 79 days) while; Jordan takes longer days i.e. 156 days to pay the suppliers.

**Table 4.2: Descriptive Statistics**

| Label | Description | Mean | Std. Dev. | Obs. |
|---|---|---|---|---|
| TQ | Tobin Q | 0.74 | 1.19 | 4015 |
| ROA | Return on Assets | 0.77 | 0.60 | 4015 |
| DSI | Number of sales inventory days | 115.11 | 318.34 | 4015 |
| DSO | Number of account receivable days | 126.43 | 390.77 | 4015 |
| DPO | Number of account payable days | 89.05 | 1601.78 | 4015 |
| CCC | Cash Conversion Cycle | 146.65 | 1617.09 | 4015 |
| CR | Current ratio | 3.45 | 8.67 | 4015 |
| DTE | Debt to equity ratio | 0.49 | 1.79 | 4015 |
| SIZE | Size of the company | 11.72 | 2.69 | 4015 |

Table 4.3 presents Pearson correlation coefficients for all variables examined in this study. There is a negative correlation between Tobin Q and DSI, DSO and CCC and positive correlation between Tobin Q and DPO. Negative association is reported between ROA and all variables in this study that are DSI, DSO, DPO and CCC. According to Hair et al., (2006) a multicollinearity problem occurs if the correlation among independent variables exceeds than 0.90. The CCC and DPO are highly correlated with coefficient of -0.97, which will cause multicollinearity problems if both are included in the same regression model. Based on the simple correlation, when DSI, DSO and CCC have shorter number of days but DPO has longer number of days, Tobin Q will have a high value. Meanwhile, ROA is higher when the number of DSI, DSO, DPO and CCC is shorter. It implies that when the inventory is selling fast, the receivable can be collected fast, and result in lower value of cash conversion cycle, which causing ROA and Tobin Q to increase. However, delay payment to supplier is associated with higher Tobin Q but lower the ROA.

**Table 4.3: Correlation Matrix**

| | *TQ* | *ROA* | *DSI* | *DSO* | *DPO* | *CCC* | *CR* | *SIZE* | *DTE* |
|---|---|---|---|---|---|---|---|---|---|
| **TQ** | 1 | | | | | | | | |
| **ROA** | 0.1438 | 1 | | | | | | | |
| **DSI** | -0.0168 | -0.1263 | 1 | | | | | | |
| **DSO** | -0.0148 | -0.1145 | 0.0645 | 1 | | | | | |
| **DPO** | 0.0015 | -0.0201 | 0.0177 | 0.0803 | 1 | | | | |
| **CCC** | -0.0074 | -0.0283 | 0.0505 | 0.1341 | -0.9702 | 1 | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **CR** | 0.0753 | -0.0993 | -0.0071 | 0.0323 | -0.0093 | 0.0150 | 1 | | |
| **SIZE** | 0.0396 | 0.3796 | -0.0687 | -0.0359 | -0.0188 | 0.0020 | -0.1261 | 1 | |
| **DTE** | -0.0580 | -0.0164 | 0.0017 | -0.0110 | -0.0156 | 0.0131 | -0.0511 | 0.0995 | 1 |

*TQ= Market value of equity + total leverage/total asset; ROA= Net profit/Total Assets; DSI= Inventory*365/Cost of Sales; DSO= Accounts receivables*365/Sales; DPO= Accounts Payables*365/Cost of Sales; CCC= DSI+DSO-DPO; CR= Current assets/Current liability; DTE= Total debt/Total equity; SIZE= Natural of logarithm of sales*

### 4.2 Regression results

Regression results in Table 4.4 and 4.5 are estimated with Fixed Effect Model (FEM). Six panel regressions were run in correspond to equation (1) to (6). The working capital measurements are alternately included in the regression model as shown in column (1) to (4). Column (5) and (6) are full models inclusive of all working capital measures, but CCC was omitted from column (5) and DPO was omitted from column (6). The CCC and DPO cannot be included in the same model as they have multicollinearity problem. According to Tabachnick and Fidell (2005) and Hair et al., (2006), a multicollinearity problem existed if the correlation between independent variables exceeds 0.9. Moreover, other than the correlation values, the test on the variance inflation factor (VIF) is performed since multicollinearity cannot necessarily be ruled out or detected by examining the matrix of the correlations between variables (Hamilton, 2009). Variance inflation factor is an indicator of the effect that the other independent variables have on the standard error of a regression coefficient. VIF that exceeds 10 suggests collinearity problems. The VIF test ran on the independent variables showed that the highest VIF was 96.33 for CCC and 95.07 for DPO. The above correlation and VIF values suggest that there is a multicollinearity problem between the independent variables; hence those variables cannot be fitted into single regression model. The results in Table 4.4 show that none of the working capital variables significantly influence the Tobin Q of the firm.

**Table 4.4: Panel Data Regression Model on Tobin Q**

| ***Column*** | ***1*** | ***2*** | ***3*** | ***4*** | ***5*** | ***6*** |
|---|---|---|---|---|---|---|
| ***WCM Included*** | ***DSI*** | ***DSO*** | ***DPO*** | ***CCC*** | ***Full model (CCC omitted)*** | ***Full model (DPO omitted)*** |
| Explanatory Variables: | | | | | | |
| Constant | 0.8169*** | 0.8162*** | 0.8175*** | 0.8174*** | 0.8156*** | 0.8155*** |
| | (7.97) | (7.96) | (7.98) | (7.98) | (7.95) | (7.95) |
| DSI | 0.0000 | | | | 0.0000 | 0.0000 |
| | (0.14) | | | | (0.15) | (0.14) |
| DSO | | 0.000 | | | 0.0000 | 0.0000 |
| | | (0.29) | | | (0.29) | (0.29) |
| DPO | | | -0.0000 | | -0.0000 | *omitted* |
| | | | (-0.04) | | (-0.05) | |
| CCC | | | | 0.0000 | *omitted* | 0.0000 |
| | | | | (0.09) | | (0.07) |

| | | | | | | |
|---|---|---|---|---|---|---|
| SIZE | -0.0063 | -0.0063 | -0.0063 | -0.0063 | -0.0063 | -0.0063 |
| | (-0.73) | (-0.73) | (-0.72) | (-0.73) | (-0.73) | (-0.73) |
| CR | 0.0001 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 |
| | (0.32) | (0.32) | (0.32) | (0.32) | (0.32) | (0.32) |
| DTE | -0.0080 | -0.0080 | -0080 | -0.0080 | -0.0080 | -0.0080 |
| | (-0.88) | (-0.87) | (-0.88) | (-0.88) | (-0.87) | (-0.87) |
| Panel estimation | | | | FEM | | |
| R-Squared within | 0.0005 | 0.0005 | 0.0005 | 0.0005 | 0.0005 | 0.0005 |
| N | 4015 | 4015 | 4015 | 4015 | 4015 | 4015 |

*TQ= Market value of equity + total leverage/total asset; ROA= Net profit/Total Assets; DSI= Inventory*365/Cost of Sales; DSO= Accounts receivables*365/Sales; DPO= Accounts Payables*365/Cost of Sales; CCC= DSI+DSO- DPO; CR= Current assets/Current liability; DTE= Total debt/Total equity; SIZE= Natural of logarithm of sales*

***p<0.01; **p<0.05; * p<0.10

Results in Table 4.5 show that DPO and CCC have no significant effect on Return on Assets (ROA). The DSI in column (1), (5) and (6) however, has a significant negative association with ROA at 1% significant level. Also, DSO in column (2), (5) and (6) also has a significant negative association with ROA at 1% significant level. The finding implies that a reduced number of sales inventory days and account receivable are associated with higher ROA. This study supports hypothesis H1 and H2 for ROA regression model. The findings on DSI are consistent with those of Deloof (2003), Mohamad and Saad (2010), Afeef (2011), Almazari (2014) and Rezaei and Pourali (2015) that stated when lower time taken to convert the inventory, the profitability increases. The findings on DSO are consistent with those of Deloof (2003), Raheman et al., (2011), Ahmadpour et al., (2012), Akoto et al., (2013) and Rezaei and Pourali (2015) which believed that a reduction in the number of accounts receivable days increases the profitability. The findings further show that among the three control variables of size, current ratio (CR) and debt to equity ratio (DTE), size has a strong positive correlation on ROA at 1% significant level. Meanwhile, CR has a strong negative correlation on firms' profit at 1% significant level. On the other hand, DTE has negative correlations on firms' profit at 5% significant level.

**Table 4.5 :Panel Data Regression Model on Return on Assets (ROA)**

| ***Column*** | ***1*** | ***2*** | ***3*** | ***4*** | ***5*** | ***6*** |
|---|---|---|---|---|---|---|
| **WCM Included** | **DSI** | **DSO** | **DPO** | **CCC** | ***Full model (CCC omitted)*** | ***Full model (DPO omitted)*** |
| Explanatory Variables: | | | | | | |
| Constant | -0.0426 | -0.0425 | -0.0463 | -0.0461 | -0.0385 | -0.0384 |
| | (-1.49) | (-1.49) | (-1.62) | (-1.61) | (-1.35) | (-1.35) |
| DSI | **-0.0001*** ** | | | | **-0.0001*** ** | **-0.0001*** ** |
| | (-3.38) | | | | (-3.48) | (-3.37) |
| DSO | | **-0.0000*** ** | | | **-0.0000*** ** | **-0.0000*** ** |
| | | (-3.05) | | | (-3.15) | (-3.12) |
| DPO | | | -0.0000 | | 0.0000 | *Omitted* |
| | | | (-0.03) | | (0.28) | |
| CCC | | | | -0.0000 | *omitted* | -0.0000 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | (-1.36) | | (-0.98) |
| SIZE | 0.0704*** | 0.0703*** | 0.0702*** | 0.0703*** | 0.0705*** | 0.0705*** |
| | (29.10) | (29.04) | (28.98) | (29) | (29.16) | (29.17) |
| CR | -0.0015*** | -0.0016*** | -0.0016*** | -0.0016*** | -0.0015*** | -0.0015*** |
| | (-2.62) | (-2.71) | (-2.71) | (-2.70) | (-2.62) | (-2.62) |
| DTE | -0.0066** | -0.0067*** | -0.0066** | -0.0066** | -0.0067*** | -0.0067*** |
| | (-2.59) | (-2.63) | (-2.59) | (-2.59) | (-2.63) | (-2.63) |
| Panel estimation | | | FEM | | | |
| R-Squared within | 0.2108 | 0.2103 | 0.2080 | 0.2085 | 0.2133 | 0.2135 |
| N | 4015 | 4015 | 4015 | 4015 | 4015 | 4015 |

*TQ= Market value of equity + total leverage/total asset; ROA= Net profit/Total Assets; DSI= Inventory*365/Cost of Sales; DSO= Accounts receivables*365/Sales; DPO= Accounts Payables*365/Cost of Sales; CCC= DSI+DSO-DPO; CR= Current assets/Current liability; DTE= Total debt/Total equity; SIZE= Natural of logarithm of sales*

***p<0.01; **p<0.05; * p<0.10

The overall result suggests that WCM has no significant effect on the market valuation of the companies. Plausibly internal factors are not as strong as external factor to affect the company's market value have led to this finding. The results of ROA however, show that the faster the company sell its inventory and collect debt from its customers, the higher is its ROA. The findings of this study also indicate that the speed of payment made to supplier does not matter to company's profitability. As long as company pays within reasonable time that do not adversely affect customer-supplier relationship and the suppliers are willing to continue to do business with the company, it may have no impact on its financial performance. Companies should focus more on its sales part to drive better financial performance.

## 4. Conclusion

Planning and controlling the current assets and current liabilities is necessary for effective cash management in many companies. When companies prefer to stay liquid, they can miss the profitable investment chances. When focus on investment and profitability is placed at the forefront, it may confront with liquidity crisis. Thus, companies need to strategize to ensure they will not neglect both liquidity and profitability. The purpose of this study is to identify whether WCM has influence on the Malaysian firm's profitability, measured by Tobin Q and ROA. The result indicates that none of the working capital measure has impact on Tobin Q. Nevertheless, lower DSI and DSO are associated with higher ROA and how fast companies pay to its supplier does not matter to their profitability. The results from this study suggests that if firms need to increase its ROA, they should be efficient and sell fast its inventory and speed up collection of debt from the customers. However, caution is needed to generalized the findings from this study due to shorter period under study and limited sample.

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# Accountants' Involvement in Corporate Environmental Governance in Malaysia: Case Evidence Within the Automotive Industry

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**Abstract**

This study investigates the involvement of corporate accountants in corporate environmental governance (CEG) of car manufacturers and assemblers within the Malaysian automotive industry. On the basis of System Thinking, proponents of CEG suggest that a firm and its sub-system which includes the people such as the corporate accountants should act as a system to successfully address the environmental issues. However, to date, only few studies have investigated on corporate accountants' involvement in CEG particularly within the Malaysian automotive industry context. This paper thus contributes to fill this gap in the literature by examining corporate accountants' involvement in CEG within the automotive industry in Malaysia. Adopting a single case study method, this exploratory study collects data through semi-structured interviews and document reviews from an automotive case firm operating in Malaysia. Consistent with the literature, the findings indicate limited active involvement of corporate accountants in the case firm's CEG. Nevertheless, a broad-based study involving manufacturing companies across industries in Malaysia may provide a better picture of the involvement of corporate accountants in CEG within the local scenario.

**Keywords:** Corporate environmental governance, Accountants' involvement, Environmental accounting, Automotive industry.

**Paper type:** Case study

## 1. Introduction

Globalization and industrial development have caused worldwide concern over increasing environmental deterioration issues. Pollution, scarcity of renewable energy, and depletion of natural resources are among the issues which have been put to the fore in addressing the concepts of environmental sustainability and sustainable development (Khairani, Rajamanoharan, & Thirumanickam, 2014; Severo, deGuimaraes, Dorion, & Nodari, 2015; Masukujjaman, Siwar, Mahmud, & Shah Alam, 2016). The manufacturing industry which is perceived as the prime contributor to environmental deterioration, face the challenge to integrate environmental factor within their business operations to protect the environment by minimizing their adverse environmental impacts (Qureshi , Md. Rasli, Jusoh , & Kowang, 2015).

This development is particularly experienced by firms within the environmental sensitive industries such as the automotive industry (Orsato & Wells, 2007; Zhu, Sarkis, & Lai, 2008), which is the focus of this study. The nature of the automotive industry is such that the product and the production processes posed significant threats to the natural environment thoughout the product's life cycle (GRI, 2004; Koplin, Seuring, & Mesterharm, 2007).Shukla, Deshmukh and Kanda (2009) highlighted that the long and complex process of the automotive industry's supply chain poses potential threats to the environment. This is due to the excessive usage of materials and large generation of waste, heat as well as emission involved along the process (Shukla et al., 2009).

Proponents of sustainable manufacturing (e.g., Environment Agency, 2004; Chaves, 2010; Qureshi et al., 2015) thus suggest for manufacturing firms including those within the automotive industry to respond to the environmental calls by adopting corporate environmental governance (CEG). CEG is about how organizations manage and minimize the negative environmental impacts of its entire business operations (Rao, 2008). By adopting a holistic perspective, proponents of CEG (Hart, 1995; 1997; Sangle, 2002; White & Kiernan, 2004; Currin, 2012; Litt, Sharma, & Sharma, 2013) highlighted the need for firms to adopt CEG which incorporates environmental considerations into various aspects of business operations to achieve both competitive advantage and environmental sustainability. Sangle (2002) for instance, suggests the need to handle environment as a firm's technical, operational as well as strategic issues. On a similar note, Khairani et al. (2014) suggested that as a reaction of firms towards various environmental-related pressures, CEG has evolved from a passive and non-committed approach to a holistic, innovative-oriented approach which is not only internally focused, but has extended to cover the supply chain. An earlier work by the Environment Agency (2004) have suggested that effective environmental governance requires five key business considerations: 1) environmental value; 2) environmental policy; 3) people/oversight; 4) process; and, 5) performance measurement system. As suggested by Nunes & Bennet (2010), a firm and its sub-system including the people and the technology should act as a system to address the environmental issues successfully.

From the accounting perspective, the Institute of Management Accountants (IMA) Statement on Management Accounting: Tools & techniques of Environmental Accounting for business decisions (1996) highlighted that competitive advantage may be gained by creating and capitalizing on environmental cost. This is because environmental cost is the business information not commonly considered by competitors (Emery, 2004). The tools and techniques of environmental accounting are claimed as having the potential to aid the management in uncovering any hidden and misallocated environmental cost for better business decisions (IMA, 1996). Along this line of discussion, Jasch (2006) and Sulaiman and Nik Ahmad (2006) perceived environmental accounting as accountants' contribution towards environmental sensitivity in organizations. As put to the fore by IMA (1996), environmental accounting among other things, aims to support the development as well as the operation of the company's CEG. In addition, management accountants have an important role in the corporate environmental team. As pointed out by IMA (1996), proactive firms recognize the need to incorporate environmental

considerations into decisions made throughout the organization. This thus entails combined skills of people from various disciplines such as the environmental managers, economists, engineers, operation managers, planners, lawyers, scientists, as well as Management Accountants (MA). The potential contribution of environmental accounting and corporate accountants in firms' CEG are thus being realized.

However, the actual involvement of corporate accountants is still lagging and poorly understood. For instance, Lodhia (2003) suggested that even though environmental issues are perceived as essential for organizations, environmental accounting is not applied by firms. In addition, corporate accountants play a minimal role in the firm's CEG where their skills are not utilized in the environmental management strategies. In turn, the environmental management personnel are unaware of the potential contribution of corporate accountants by means of environmental management accounting as well as environmental reporting.

To date, a review of the Malaysian literature reveals that there is a lack of extant research from an internal perspective, particularly in the automotive industry on the involvement of corporate accountants in the deployment of CEG. Therefore, as an exploratory study that adopts a single case study approach, this study seeks to fill the current gap in the literature by examining the involvement of corporate accountants towards the greening practices adopted by the case firm.

The remaining sections of this paper are structured into three parts. The first part describes to some extent the relevant literature on the Malaysian automotive industry, CEG and accountants' involvement in CEG in general. The second part lays out the research methodology. The final part of the paper presents the findings and conclusion.

## 2. Relevant Literature

### 2.1 The Malaysian automotive industry

Located at the center of the high community ASEAN region, Malaysia is an ideal hub for the global automotive and component manufacturers (MIDA, 2010). This advantage thus turns the Malaysian automotive industry as a key contributor to the nation's economic growth (MIDA, 2010). However, it has been observed that factors such as the full implementation of the ASEAN Free Trade Area (AFTA) have adversely affected the performance of the automotive industry (Rosli, 2006). The local automotive parts and components suppliers - being mostly small and medium size business entities are experiencing the same pressure. Among others, this is due to the increasing manufacturing costs as well as lack of research and development capabilities. It is thus crucial for firms within the Malaysian automotive industry to adopt strategies in maintaining and even improving their competitive position. Recent development within the local scenario shows that the Malaysian government had revised the National Automotive Policy in 2014 to promote sustainable manufacturing processes which, is in harmony with preservation of the natural environment. Along this line of discussion, CEG is viewed by many (Von Ahsen, 2006; Zhu, Sarkis & Lai, 2007; Shukla et al., 2009; ElTayeb, Zailani, & Ramayah, 2011) as a potential means to

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gain competitive advantage particularly for the automotive industry. In addition, proponents of corporate environmental governance (e.g, Nunes & Bennett, 2010; Khairani, Kasim, Rajamanoharan, & Misman, 2017) suggest that firms use a systemic (holistic) approach to implement CEG to ensure environmental sustainability.

### 2.2 Corporate environmental governance (CEG)

Realizing the significant impacts of businesses and industries towards the natural environment, proponents of corporate social responsibility [CSR] have commented that the traditional definition of corporate governance failed to emphasize on the environmental obligations of businesses. Clarke (2007, p.267) for instance, argues that "the narrow focus of corporate governance exclusively upon the internal control of the firm and simply complying with regulation is no longer tenable". Clarke (2007) stressed the importance of CEG and highlighted that "corporate governance essentially will involve a sustained and responsible monitoring of not just the financial health of a company, but the social and environmental impact of the company". Hence, his argument suggests the need for a more specific CEG system. The controversial theory "Porter Hypothesis" introduced by Professor Michael Porter in 1991 is regarded as a good foundation for environmental governance practice among corporations (EnvironGrade, 2009; Chaves, 2010). The theory suggested that environmental compliance and economic competitiveness are complementary rather than inconsistent. The "Porter Hypothesis" has in recent years drawn much interest on CEG among scholars as well as practitioners (EnvironGrade, 2009; Chaves, 2010).

From an academic perspective, scholars have extended their governance and CSR interest to CEG whilst from a practitioner perspective, firms are increasing their attempts to practice and promote good environmental governance. Their aim is to ensure better environmental and business performance while demonstrating corporate environmental responsibility (Rao, 2001, 2007). At the same time, institutional investors are increasingly diversifying their portfolios by investing in sustainable companies - companies that are creating value by managing risks associated to upcoming economic, environmental and social factors (Chaves, 2010). CEG which is also commonly referred to as "environmental management" (e.g., Sroufe, Montabon, Narasimhan, & Wang, 2002; Valentine, 2009), "environmental management practices" (Rao, 2008; Menguc, Auh, & Ozanne, 2010), and "corporate environmental management" (Schaltegger, Burritt, & Petersen, 2017) is about how organizations address and mitigate the adverse impacts of its entire business operations on the natural environment (Rao, 2008). Sangle (2002) and Environment Agency (2004) suggest that CEG is essential for both the firm's economic competitiveness and environmental sustainability. Prabakaran (2010) adds that in a business sense, environmental governance is an ethical effort by a company to protect the environment in which it operates. Along this line of discussion, Strandberg (2005) had earlier argued that a huge loss in reputation and trust is suffered by firms that failed to conform to corporate governance and corporate social responsibility [CSR]. Strandberg (2005) further claims that this is because firms do not properly address CSR issues such as the natural environment in their corporate governance. Furthermore, Sangle (2002) suggested that in the current millennium, a non-comprehensive CEG may lead to failure of firms to meet their primary goal of maximizing stakeholder value.

Adopting System Thinking as the underlying theory, proponents of CEG (Environment Agency, 2004; Nunes & Bennett, 2010; Khairani et al., 2017) highlighted on the use of a holistic approach to implement CEG. Khairani et al. (2017) for instance, suggested that a comprehensive CEG should include environmental principle, policy, process, performance measurement system, and involvement of the people including the corporate accountants.

### 2.3 Corporate environmental governance (CEG)

In the current study, corporate accountants' involvement in CEG refers to: 1) the practice of environmental accounting (EA) which concerns both environmental management accounting (EMA) and environmental reporting; and, 2) involvement of corporate accountants in the corporate environmental team. Meanwhile "corporate accountants" are the accountants and the accounts executives who work in industries such as the automotive industry, where the operations have an impact on the environment.

As an accounting technology, environmental accounting is recognised as an important component of a successful business strategy (IMA, 1996; Yakhou and Dorweiler, 2004; IFAC, 2005; Jasch, 2006; Sulaiman & Nik Ahmad, 2006). Despite this recognition, there is minimal evidence on the adoption of environmental accounting and involvement of corporate accountants in the CEG of firms (Wycherley, 1997; Wilmshurst & Frost, 2001; Lodhia, 2003; Jalaludin, Sulaiman, & Nik Ahmad, 2011). For instance, Lodhia (2003) reveals that though social awareness is currently increasing among accountants, both environmental management accounting and environmental reporting are minimally practiced. The corporate accountants' accounting skills are not employed in the environmental management strategies. In addition, their involvement in the firm's green practices is insignificant. The firm's environmental management team members in turn, are unaware of the corporate accountants' potential contribution by means of environmental management accounting as well as environmental reporting. Similarly, an earlier study by Wycherley (1997) highlighted that environmental managers are not fully aware of the potential assistance mainly in cost saving activities which the accountants might be able to provide. In addition, some of the managers observed their financial colleagues as uncooperative and unwilling to change.

Burns and Scapens (2000) investigated on the changing nature of management accounting in UK manufacturing companies. The study highlighted that there is a decreasing number of people involved in the accounting function between the years 1990-1997. In addition, there is a changing role of management accountants due to the emergence of "hybrid" accountants – employees of the corporation who have both the accounting knowledge and an in-depth understanding of the business operation or commercial processes. The study also indicated some possible reasons for increasing reliance towards individual managers and production personnel. Firstly, modern database systems are making information widely dispersed and enabling them to be analyzed in various ways. Individual managers have greater responsibility over information pertaining to their area of activity. Even the accountants use the information provided and stored in the database by the individual managers and production personnel to produce both financial and management

accounting reports. Secondly, this technological development is causing decentering of accounting knowledge where information such as budgets, variances, and actuals are available at various levels of the organizations. Even the responsibility for cost management has shifted to the managers and department heads. Thirdly, greater emphasis on forecasts rather than budgeting requires considerable inputs from individual departments and functions causing less reliance towards accountants. Burns and Scapens (2000) also concludes the need for management accountants to have a broad understanding of the business and its operations as companies now are more strategically focused, leading to the use of a range of key performance indicators that are not restricted to only financial performance measures.

The current evidence provided by extant literature is mostly based on studies not conducted within the local scenario. Hence little is known on the corporate accountants' involvement in Malaysia, particularly within the automotive industry. Thus, the following research question is being addressed:

*What is the involvement of corporate accountants in the deployment of corporate environmental governance (CEG) at the case firm in terms of environmental management accounting, environmental reporting and corporate environmental team?*

## 3. Research Methodology

This study adopts a qualitative methodology to address the research question identified in the previous section. According to Yin (2009), a single case study approach permits capturing unique or extreme circumstances and conditions of a special case. A single case study acts as a revelatory case where few had previously sought the opportunity to observe and analyze. Therefore, considering the early stage of CEG research within the Malaysian context, a qualitative exploration of the research topic by using a single case study is thus perceived as appropriate for this study.

### 3.1 Data collection

For the purpose of this study, one case firm in the Malaysian automotive industry was selected based on the following criteria: 1) environmentally concerned manufacturing company; 2) operating in the Malaysian automotive industry; 3) national car maker in Malaysia. The case firm is regarded as an environmentally concerned manufacturing company due to its ISO 14001 certification and the existence of Environmental, Health and Safety (EHS) division within the company.

In getting access to the case firm, direct contacts between the researcher and the company were done. An extensive review of the CEG literature surrounding the research question was undertaken prior to the interview questions development. According to Masanet-Llodra (2006) and Yin (2009), interview is an essential source of information for case studies. Thus, focused interviews (Yin, 2009) were conducted using a semi-structured interview approach. An interview protocol was developed as a guideline for consistency as well as cross-referencing. This study attempts to gain insights into preparedness of practicing accountants of the case firm to handle environmental issues. It is also the purpose of the study to investigate the perceptions of the case

firm's environmental champions, the senior management, and head of departments on the potential assistance they might gain from the accountants with respect to CEG. Thus, key informants includes the manager of financial accounting, Accounts executive, executives of Environmental, Health and Safety (EHS) Department, the general manager, and head of departments related to the firm's operational supply chain. Consistent with Setthasakko (2009), during the interviews, questions were asked, and where necessary, probing was done and elaboration was required. The whole data collection process involved recording of the interview sessions which was later transcribed by the researcher. The purpose of the interview was explained to the respondents in order to ensure that they were at ease. However, to avoid bias responses from the respondents, the objective of the study was not revealed.

Following Masanet-Llodra (2006) and Yin (2009), archival records were deemed appropriate mainly to validate and strengthen evidence from the interviews conducted. However, the interpretation of archival records was done with care since most were prepared for a specific audience and a specific purpose (Masanet-Llodra, 2006; Yin, 2009).The scope of this study is on the involvement of corporate accountants in the deployment of CEG within the case firm's boundary.

## 4. Findings

### 4.1 Profile of case firm

The case firm (hereafter referred to as Company A) under study is a local car manufacturing and assembling plant wholly owned by the parent company (hereafter referred to as X Holdings). This RM1.8 billion state-of-the-art manufacturing facility is situated in the northern state of Perak, Malaysia.

Manufacturing and assembly of cars (personal vehicles) are the key business activity of the case firm. This is handled by the manufacturing facility's five main departments within its operational supply chain: Engine & Transmission (ETM); Stamping; Body Assembly; Painting; and, Trim & Final Assembly.

Designed for production and supply-delivery efficiencies, Company A is equipped with an Automatic Line Control (ALC) or error-proof system that assists workers to improve built up quality and production efficiency. The manufacturing facility consists of 40% man-power and 60% automation. The infrastructure is intelligently designed as it uses high-precision robotics to ensure perfect production quality. Combined with smart systems, repetitive and heavy manual labor is reduced. Hence, the resultant effect such as overtiredness among workers and any inefficiency due to human error may also be minimised. The plant is capable of producing multi-model products on a common line thus permitting greater production flexibility. Each line can assemble vehicles on three different platforms. The plant is both ISO 9001 and ISO 14001 certified. It was built with worker friendly features aimed for a more conducive, comfortable and safe working environment.

As a car manufacturing and assembly company in Malaysia, Company A is categorized as "Business to Consumers" (B2C) in its Supply Chain (SC).

### 4.2 Corporate accountants' involvement in CEG

The discussions of findings in this section will firstly focus on the perception and involvement of accountants in the CEG at the case firm. The discussion will then continue with the perceptions of the case firm's management personnel on the involvement of accountants in the deployment of CEG.

#### 4.2.1 Perception and involvement of accountants

The corporate accountants interviewed agreed that the operation of the company provide impact on the environment. They also believed that there is a win-win situation for both the firm and the environment if the company behaves responsibly towards the environment by implementing CEG. To say the least, the company will enjoy the benefit of cost reduction while at the same time, providing the natural eco-system with minimal adverse impact. In addition, as affirmed by the Manager of Financial Accounting, Group Finance, environmental responsible-ness is also essential for the sustainability of the case firm:

*"First of all, X Holdings has to comply with the DOE...because we have a lot of sludge, hazardous materials, schedule waste..As far as i know, X Holdings comply because we also have ISO. The reason are two – 1: cost down..issue on environment..we have to do in accordance to the law. If not, the fine is high., not including 2 years imprisonment – the MD(Managing Director)!..Company A embark into ISO 14001..because it is a state-of-the- art (plant)..It is good for the firm to get the certification so as it can present to the global market as a true world class assembler".*

The Manager of Financial Accounting, Group Finance also assured that the company is managing the environment responsibly by having an Environmental, Health and Safety policy in place and considering the environment upon running the firm's operation. For instance, at the ETM Department of Company A, all the machines are covered in boxes. Debris generated from the machines will be gathered by trained workers to handle waste. Any remaining waste will drop to the conveyors at the basement and transferred to a bailer machine. Similarly, the Stamping Department of Company A has an oil pit as a collecting sump and underground conveyors to transfer metal waste from stamping lines to a bailer machine. The bailer machine will turn scrap metals into cubes by compressing them. The cube metals will then be sold to specialized licensed contractors. However, corporate accountants of the case firm are not involved in the CEG implemented by the company. Environmental accounting (EA) – environmental management accounting (EMA) and environmental reporting (ER) are not being practiced by the corporate accountants of the case firm. As affirmed by the Financial Accounting Manager:

*"Yes, i would say so [EA – EMA and ER are not practiced]. So, maybe when FRS says mandatory, we need to have it...Even though FRS is thick, there's no mention about environment....At the moment we are thinking about FRS 136 which we need to adopt. Even our FRS 139- Financial Instruments (FI) are upside down – need to adopt this year. And that involves massive structure...So, meaning..there's a lot of things to pick-up. This is our challenge..Here the adoption is quite slow. But, when adopting, there's changes. A lot of things need to be done to*

*accommodate the changes. Even the Charts of Accounts needed to be changed and even that can be very messy. … even FRS 139 can be so complex. Because our FI is too many. Similar to this one [EA]. Please do not make it mandatory!..Talking about environment itself, the company follows. But accounting, we need to start one by one. We don't want "yang dikejar tak dapat, yang dikendong berciciran"."*

The corporate accountants are not key players in the CEG of the case firm. They are not involved in the environmental management strategies of the company since they are not part of the Environmental Committee team. Nevertheless upon request, the corporate accountants do make contributions towards green initiatives. However their contributions is only minimal as they only provide advices on capital investments, benefit analysis as well as impact analysis on environmental initiatives projects by the EHS or any departments.

The corporate accountants also perceived that the environmental management system and the accounting system are totally separated and different from each other. The reporting produced by them is purely financial. Meanwhile any environmental reporting is done by the EHS Department.

In order to verify the information provided by the accountants, further investigations were conducted with the case firm's non-accounting personnel. The following section will elaborate on the perceptions of the case firm's management personnel on the role of accountants in the deployment of CEG.

### 4.2.2 Perception of management personnel

Similar to the perceptions of their financial colleagues, the management personnel at the case firm are unaware of the potential contribution which the accountants can provide in CEG deployment.

According to those interviewed, accountants are not involved with the CEG deployment at the case firm. Interviews with the management personnel in turn, confirms the evidence obtained from the interviews of the case firm's corporate accountants. Corporate accountants are not involved with the greening activities conducted within the case firm. Also, similar to their financial colleagues, the management personnel of the case firm are unaware of the potential assistance that corporate accountants might offer by means of environmental management accounting and environmental reporting. The management personnel have little awareness of their financial colleague's potential help especially on cost saving activities as well as on environmental management strategies.

The evidence also highlighted that the engineers as individual managers and production personnel play higher responsibility for information concerning to their areas of activity. These managers and head of departments are handling the cost management, not the corporate accountants. Thus, reliance on corporate accountants is lesser. The involvement of corporate accountants in CEG is minimized to being a "verifier" and a monitoring body. As asserted by the

General Manager of the case firm:

*"...do we need an accountant or an engineer? Because engineer nowadays, if you can give them the cost, then by using Excell they can calculate the ROI and the rest. For us, the Project Engineer has to come up with the ROI and the rest. So, i don't know. If the word "accountant" is just to look at ROI, ROE..for (our) case, the engineers will do it. Accountants just verify..how you get all these..are correct. The engineers must prepare everything...Accountants just check, verify. Because technically, they don't know..."*

The HOD of ETM Department added to this issue by stating that the corporate accountants have very limited functions. Their financial colleagues only monitor both the operational expenditure (OPEX) and the capital expenditure (CAPEX) budget of the department.

In addition, due to the lack of understanding on green manufacturing processes and needs, the managers also perceived the accountants as less helpful in the deployment of CEG initiatives. For example, the HOD of ETM Department states that justification on the cost and the legal implications of the green initiatives must be given to their financial colleagues before the required assistance such as budget approvals are provided. This is due to the lack of technical knowledge or an in-depth understanding of the production processes among the case firm's corporate accountants.

## 5. Conclusion

Contrary to the literature both within the wider management accounting context (Sulaiman, Ramli, & Mitchell, 2008; Ramli, Zainuddin, Sulaiman, & Muda, 2013) and within the EMA context (Jasch, 2006; Sulaiman & Nik Ahmad, 2006; Schaltegger et al., 2017), the CEG deployment at the case firm is not associated with a significant involvement of accountants. This thus indicates a large gap between theory and practice, particularly within the Malaysian scenario.

Even though the accounting profession recognizes environmental accounting as an essential component for a successful business strategy (e.g., IMA, 1996; IFAC, 2005; CIMA, 2015), the findings of this study conforms to the findings of previous works (Wycherley, 1997; Lodhia, 2003; Yakhou & Dorweiler, 2004; Jalaludin et al., 2011) – the deployment of CEG is accompanied by limited involvement of accountants with regards to the adoption of MA technology and their personal involvement. In addition, the corporate annual reporting produced by the corporate accountants is purely on finance. The corporate accountants are not involved in any environmental reporting which is done by the Environmental, Health & Safety Department's personnel.

Within the systemic (holistic) perspective, a firm and its sub-system should act as a whole system to successfully address environmental issues (Nunes & Bennet, 2010). Hence, the current limited role of accountants as evidenced in this study, signals for a more significant involvement.

## 6. Significance of Study

The study serves as a starting-point for more research in the area of the involvement of corporate accountants particularly in the adoption of MA technology, environmental reporting and personal involvement of the accountants in CEG within the Malaysian automotive industry. This will not only contribute to the advancement of the body of knowledge, but also as guidance to practitioners.

## 7. Scope and Limitation

This study and its findings are still relatively exploratory, focusing on the corporate accountants' involvement in CEG by a car manufacturing and assembly company within the Malaysian automotive industry. Hence, the findings are not conclusive due to a single case firm selected. The results therefore, could not be generalize to the whole industry. A multiple case study within the industry or a more broadly-based study involving manufacturing companies across industries in Malaysia may provide a better picture of the local experience on the involvement of corporate accountants in CEG.

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# Using the UTAUT Model to analyze e-procurement adoption in Malaysian Construction Industry

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**Abstract**

This paper seeks to provide further understanding of issues surrounding acceptance of e-procurement by contractors in the Malaysian Construction Industry. The Unified Theory of Acceptance and Use of Technology (UTAUT) model by Venkatesh et al. (2003) was employed to determine the strength of predictors for contractors to accept and use e-procurement. Questionnaires were administered to 115 contractors, during seminars and workshops organized by CIDB. Analysis of Moments Structures (AMOS) 24 and Statistical Package for the Social Sciences (SPSS) 24 were used to analyze the data collected. The measurement and structure model was appraised using Structural Equation Modeling. The findings show that performance efficacy, effort efficacy, social influence and facilitating condition have significant effect on e-procurement usage since the p-value for all the cases are less than 0.05. The researcher therefore recommends that future studies should include other variables to improve the variance explained by the predictors, since there are variations in the research environments.

**Keywords:** Effort Expectancy, Performance Expectancy, Social Influence, Facilitating Conditions, Use Behaviour

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## 1. Introduction

The construction industry is important to national wealth creation as it acts as a catalyst for economy development (CIDB, 2006). 90% of the companies undertaking construction work are small and medium sized enterprises (SMEs).They play an important role as general contractors on small and medium sized projects and as sub-contractors for large construction companies. It is government policy for the SMEs to be able to deliver a safer, higher quality and more standardized product that can be maintained easily. It is also the government's aim for the industry to be a world-class, innovative and knowledgeable global solution provider (CIDB, 2006). To realize the aim, one aspect to highlight is the use of e-procurement or e- perolehan in Malaysian construction sector.

Malaysian government embarked on the e-perolehan project in 1999 to transform the public procurement landscape. Since Malaysian government is a major purchaser of goods and services

from the private sector spending a total of RM35 billion annually, e- Procurement or specifically e-perolehan project is seen to be an effective tool to ensure value for money as well as transparency and accountability in the public procurement process (Maniam et al., 2010).

Despite the fact that construction is mainly a service industry, a majority of its activities require material handling and assembly functions. E-Procurement is critical to construction because it involves a number of partners on each project who has the need for

inventory management in order not to delay the project or to tie space and money on excess inventory while also complying with specifications and other variables (Pheng and Meng, 1997). Beyond the obvious transaction cost savings and access to suppliers, e-Procurement can offer product standardization, quality assurance, inventory management and the opportunity to manage material flows down the value chain (i.e. the contractor having input in subcontractors choices, the owner having input in contractors choices, etc.).

According to Khu et al., (2012), despite the introduction of e-procurement in Malaysia since early 2000, many SMEs still perceive e-procurement as infeasible. In addition, they find that e-procurement is not widely adopted yet among SMEs. SMEs are at the core of the Malaysian construction industry and account for about 90% of companies undertaking construction work (CIDB, 2006). As of November 2007, e-Procurement has also not widely adopted in the construction sector and will take longer to be developed than originally anticipated (New Straits Times, 29th November 2007). Raja Roslan et al., (2009) in their research at Universiti Teknikal Malaysia Melaka (UTeM) also find that traditional method of procurement is still widely used as compared to e-procurement. With e-procurement being equipped in Malaysian construction industry, the above situation strike researcher's curiosity whether the contractors are the right target in utilizing e-procurement, or whether the contractors are having problems in using the e-procurement effectively in performing their jobs.

There are many models that can be used to analyse the usage of e-procurement among the contractors. One of the recent models is UTAUT model proposed by Venkatesh et al. (2003). This research is conducted to explain the factors that can significantly determine the usage of this technology in Malaysian construction industry, which is between contractors and Malaysian Government.

## 2. UTAUT model

Venkatesh et al. (2003) noticed that IS or IT researchers were confronted with a choice among a multitude of models and were bound to choose constructs across models or choose a favoured model, thus ignoring the contribution from alternative ones. They felt the need for a synthesis in order to reach a unified view of users' technology acceptance.

Venkatesh et al. (2003) reviewed and compared the eight dominant models that have been used to explain technology acceptance behaviour. These models included Theory of Reasoned Action

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(TRA), Theory of Planned Behaviour (TPB), Technology Acceptance Model (TAM), combined TAM - TPB, Diffusion of Innovation (DOI), Socio Cognitive Theory (SCT), Motivational Model (MM), and Model of PC Utilization (MPCU). From the findings, they found that the constructs that do have a direct effect on behavioural intentions and usage are: performance expectancy, effort expectancy, social influences, and facilitating conditions. The terms are explained as follows:

**Performance Expectancy (PE)** *is the degree to which an individual believes that using the system will help him/her to attain gains in job performance.*

**Effort Expectancy (EE)** *is the degree of ease associated with the use of system.*

**Social Influence (SI)** *is the degree to which an individual perceives that important others*

*believe he/she should use the new system.*

**Facilitating Conditions (FC)** *is the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system.*

The UTAUT was formulated by leading researchers in the technology acceptance domain. The model was formulated based on conceptual similarities among eight dominant models in the field. According to its Venkatesh et al. (2003), the UTAUT is a definitive model that synthesized what is known and advances cumulative theory while retaining a parsimonious structure. Although published studies adopting this model are still scarce, this does not undervalue the power of this model compared to all other technology acceptance models.

All the original UTAUT constructs were used to develop the theoretical model of this research except for behavioral intention to use the system, since the contractors in the study were already using the e-procurement. In addition, there is a research where intention partially mediated the relationship (Ismail and Ali., 2014). This research also excludes the moderating variables from the origin model. The concept framework model used in the research is illustrated in figure 1 below.

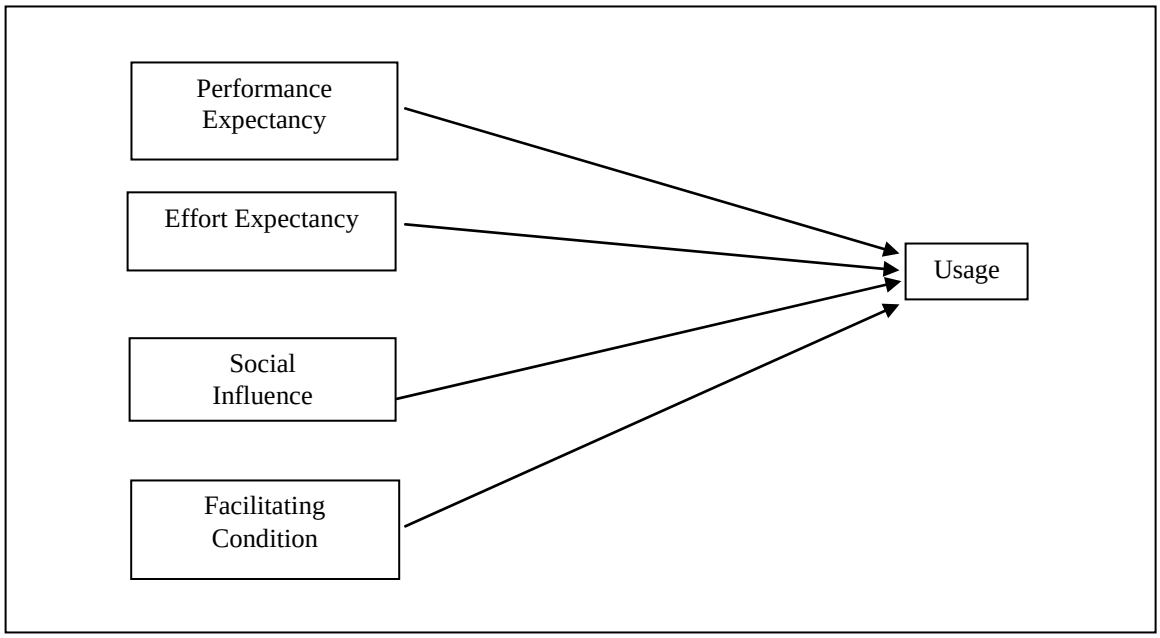


Figure 1: UTAUT model used in this study, modified from Venkatesh et al. (2003)

Based on the theoretical framework in Figure 1, the following hypotheses are derived.

$H_1$ Performance Efficacy has significant effects on e-Procurement Usage
$H_2$ Effort Efficacy has significant effects on e-Procurement Usage
$H_3$ Social Influence has significant effects on e-Procurement Usage
$H_4$ Facilitating Condition has significant effects on e-Procurement Usage

## 3. Research Methodology

The data reported in this paper were extracted from a survey of 115 of G4 and G5 Malaysian construction firms, conducted as part of a PhD research project in 2017. This study shall focus only to G4 and G5 middle size contractors because they are under classification of SME companies which sales turnover between RM1 millions to RM5 millions. The groups are also chosen because they still have not widely used e-Perolehan (Khu et al., 2012), even though they are organized companies and involved with complex and important projects. The following sections explain the details of the method used for this study.

### 3.1. Measurement development

Items designed to measure the construct were adopted from previous studies and refined through several procurement managers, then were reviewed by faculty members to assess face and content validity. Specifically, the development of a construct are based on the adoption of relevant research streams. All items related to UTAUT model are based on a 7- point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). These measures are self-reported perceptual measures.

### 3.2. Demographic profiles

The survey used for data collection was pretested with two procurement managers and academic staff members before official administration. The survey questionnaire was distributed to representatives from construction companies who attended the seminar and workshops programs under CIDB. Three rounds of distributions were carried out and 115 responses were received.

A range of demographic characteristics was analyzed from the extracted data subset. The majority of the respondents held a job title of engineer and site manager. Further, the respondents had an average of 11 and 20 years of experience in the industry. The length of a manager's tenure gave some reassurance of the validity of the sample, since they were more likely to be knowledgeable about the strategies and activities of the companies. In terms of e-Procurement usage, majority (40.4%) of the respondents are moderate users.

## 4. Findings

For the purpose of data analysis and testing of hypotheses the study uses Structural Equation Modelling (SEM) and IBM-SPSS-Amos software, the framework in Figure 1 is converted into Amos Graphic as shown in Figure 2 by putting the required residual for regression equation.

Prior to data input into the model and executing Structural Equation Modelling (SEM), the study needs to assess the data distribution for normality as part of the requirement for parametric statistical analysis (Awang, 2014; 2015). Unlike other software which employ traditional Generalized Least Square (GLS) estimator which is not robust to skewed data, the IBM-SPSS-Amos employ the robust estimator namely the Maximum Likelihood Estimator (MLE). This estimator (MLE) is robust to skewed data; the assessment of normality is only based on the skewness of data distribution. As such, it is only adequate to show that the data distribution does not depart from normality. According to Awang (2014; 2015), the range of skewness between -1.5 to 1.5 are still acceptable since data distribution within that range does not depart from normality. Based on the data characteristics shown in Table 1, the value of skewness for all constructs fall within the stated range. Thus, the study can proceed into modelling and executing SEM.

**Table 1: The Assessment of normality for data**

| Variable | min | Max | skewness | c.r. | kurtosis | c.r. |
|---|---|---|---|---|---|---|
| Facilitating_C | 3.000 | 7.000 | -0.520 | -3.360 | 0.348 | 1.123 |
| Social_I | 3.000 | 7.000 | -0.469 | -3.027 | 0.807 | 2.603 |
| Effort_E | 3.000 | 7.000 | -0.541 | -3.491 | 0.796 | 2.569 |
| Performance_E | 3.000 | 7.000 | -0.762 | -4.918 | 0.956 | 3.085 |
| eP_Usage | 3.000 | 7.000 | -0.700 | -4.522 | 1.150 | 3.712 |

AMOS 20.0 statistical software was used to evaluate the construct validity and the reliability of

the measurement instrument. The results of factor loadings, construct reliability and average variance extracted are shown in Table 2 which offers adequate evidence of validity and reliability, since factor loadings exceed 0.5, while construct reliability figures exceed the recommended level of 0.7.

**Table 2:** Standard item loadings, Composite Reliability and Average Variance Extracted

| Construct | Indicator (sub-construct) | Factor loading | Construct reliability | Average variance extracted |
|---|---|---|---|---|
| Usage | pu1<br>pu2<br>pu3<br>pu4 | 0.67<br>0.81<br>0.84<br>0.86 | 0.875 | 0.638 |
| Performance expectancy | pe1<br>pe2<br>pe3<br>pe4<br>pe5 | 0.82<br>0.89<br>0.75<br>0.82<br>0.84 | 0.914 | 0.681 |
| Effort expectancy | ee1<br>ee2<br>ee3<br>ee4<br>ee5 | 0.79<br>0.85<br>0.85<br>0.87<br>0.82 | 0.921 | 0.700 |

| | | | | |
|---|---|---|---|---|
| Social influence | si1<br>si2<br>si3<br>si4<br>si5 | 0.79<br>0.87<br>0.90<br>0.87<br>0.83 | 0.930 | 0.727 |
| Facilitating condition | fc 1<br>fc 2<br>fc 3<br>fc 4<br>fc 5 | 0.83<br>0.77<br>0.84<br>0.91<br>0.89 | 0.928 | 0.722 |

The researchers utilised the principles stated in Hair et al., (2006 as cited in Samuel and Hillar., 2014) to conduct the appraisal of the structural model. To assess the fitness of a model, Hair et al (2006) also state that it is ideal to use at least one absolute and one incremental fit measure in addition to χ2 and the associated degrees of freedom. Earlier researchers have recommended the following cut off for model appraisal: χ2/df < 3 (Bagozzi, R.P., & Yi., 1988), AGFI > 0.8 (Chau, P.Y. K & Hu P.J.H 2001), RMSEA < (Brown M. W. &
Cudeck R ,1993), CFI > 0.9 (Bagozzi, R.P., & Yi. 1988), NFI > 0.9 (Hair et al., 1998). Table 3 provides a list of fit indices, recommended threshold values and their corresponding authors, and the paper's fit indices which clearly fall within the acceptable regio n. Hence the result revealed that the measurement model fit with the data collected.

**Table 3: Recommended and actual values of fit indices**

| Fit Indices | Recommended Value | Actual Values | Authors |
|---|---|---|---|
| χ2/df | <3 | 1.757 | (Bagozzi, R.P., & Yi., 1988) |
| AGFI | >0.8 | 0.856 | (Chau, P.Y. K & Hu P.J.H 2001) |
| RMSEA | <0.08 | 0.055 | (Browne M. W. & Cudeck R ,1993) |
| NFI | >0.9 | 0.897 | (Hair et al.,1998) |
| CFI | >0.9 | 0.952 | (Bagozzi, R.P., & Yi. 1988) |

The Regression Path Coefficients are shown in Figure 2.

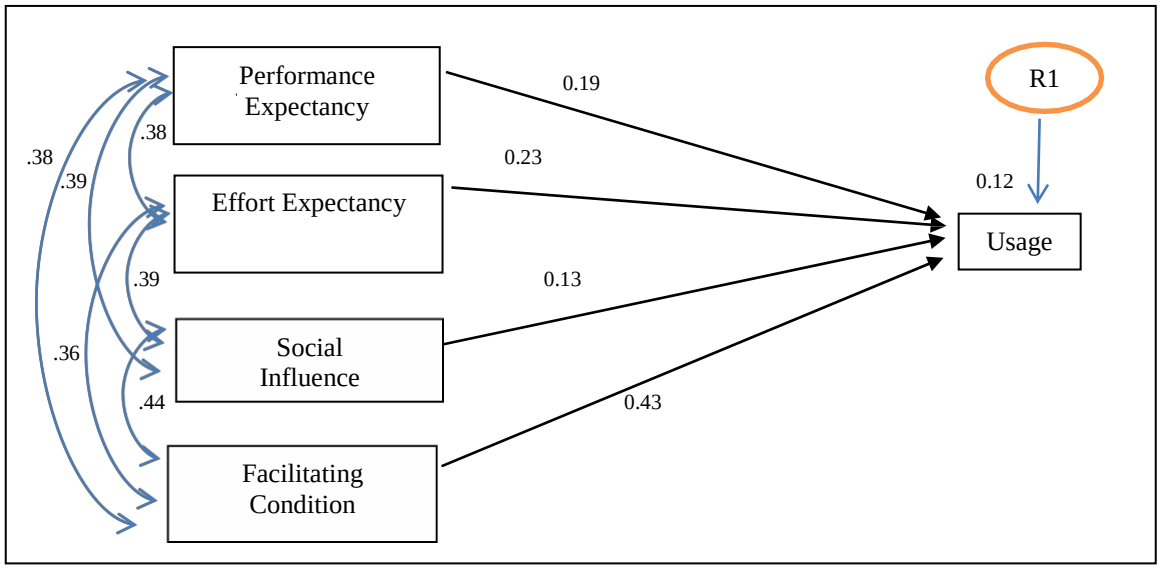


Figure 2: The Regression Path Coefficient

**The Regression Equation extracted from Figure above is as follows:**

1. eP_Usage = 0.12 + 0.19Performance_Expectancy + 0.23Effort_Expectancy + 0.13Social_ Influence + 0.43Facilitating_Conditions

The significance of the Regression Coefficient is shown in Table 4.

**Table 4: The Regression Coefficient and its Significance**

| | | | Estimate | S.E. | C.R. | P-Value | Result |
|---|---|---|---|---|---|---|---|
| eP_Usage | <--- | Performance_Expectancy | 0.194 | 0.053 | 3.626 | 0.001 | Significant |
| eP_Usage | <--- | Effort_Expectancy | 0.234 | 0.059 | 3.982 | 0.001 | Significant |
| eP_Usage | <--- | Social_Influence | 0.132 | 0.063 | 2.098 | 0.036 | Significant |
| eP_Usage | <--- | Facilitating_Condition | 0.428 | 0.054 | 7.937 | 0.001 | Significant |

Table 4 and Figure 2 show the relationships between the exogenous variables; Effort Expectancy, Performance Expectancy, Social Influence and Facilitating Conditions, and the endogenous variable; e- procurement usage. Based on table 4 also, all the four hypotheses are supported since the p-value for all the cases are less than 0.05 which are significant. The findings show that performance efficacy (0.19 $p<0.05$), effort efficacy (0.23 $p<0.05$), social influence (0.13 $p<0.05$) and facilitating condition (0.43 $p<0.05$) have significant effect on e-procurement usage.

## 5. Discussion and conclusion

The objective of this paper is to determine the factors significantly influence e-Procurement usage in Malaysian construction industry. UTAUT model is used because it was formulated by leading researchers in the technology acceptance domain and very few research use the model in the construction industry. This study has confirmed that all the four independent variables of UTAUT

model significantly influence e-procurement usage.

This study provides insights into contractors' behaviour towards e-procurement usage when the Venkatesh et al. (2003) model was applied. The study concludes that of the hypotheses stated, Effort Expectancy, Performance Expectancy, Social Influence and Facilitating conditions positively influence the usage of e-procurement. It is therefore imperative upon Malaysian government to ensure that e- procurement is made friendly, easy to use and with requisite technical support. The study also concludes that when these interventions are applied, contractors then incorporate the e-procurement into their work and appreciate the value of the technology provided and in turn advise their colleagues to use them.

This paper used only the exogenous variables from UTAUT model which are Effort Expectancy, Performance Expectancy, Social Influence and Facilitating Conditions. It did not address the effect of the moderating variables presented in the original UTAUT model. The researcher therefore recommends that future studies include other variables to improve the variance explained by the predictors, since there are variations in the research environments. The research also used the contractors from group G4 and G5 based on CIDB classification. The researcher therefore recommends that future studies include contractors from other classifications for more reliable results and conclusions.

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