<table>
<thead>
<tr>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREFACE</td>
<td>3</td>
</tr>
<tr>
<td>PROCEEDING COMMITTEE</td>
<td>4</td>
</tr>
<tr>
<td>YOUNG ENTREPRENEURSHIP ACCELERATORS PROGRAMME: THE BEEHIVE SOCIAL INNOVATION MODEL</td>
<td>5 – 13</td>
</tr>
<tr>
<td>DATA STORAGE AND MANAGEMENT SERVICES IN HADOOP AND MONGODB</td>
<td>14 – 25</td>
</tr>
<tr>
<td>THE LEVEL OF SOCIAL CAPITAL AMONG LOW INCOME GROUP (B40) IN KOTA BHARU</td>
<td>26 – 30</td>
</tr>
<tr>
<td>DETECTION OF STRUCTURAL BREAK FOR ELECTRICITY CONSUMPTION DATA: A COMPARISON BETWEEN MAXIMUM LIKELIHOOD ESTIMATION AND BAYESIAN METHOD</td>
<td>31 – 43</td>
</tr>
<tr>
<td>AN EVALUATION OF THE SERVICE QUALITY AMONG THE IT OUTSOURCE PROVIDERS IN MALAYSIA</td>
<td>44 – 53</td>
</tr>
<tr>
<td>AN ASSESSMENT ON THE EFFECTIVENESS OF PAYMENT COLLECTION IN THE CONSTRUCTION INDUSTRY: THE MALAYSIAN PERSPECTIVE</td>
<td>54 – 66</td>
</tr>
<tr>
<td>NON-TECHNICAL ATTRIBUTES OF HIGH-RATED APPS: A STUDY ON TOP FREE APPLICATIONS IN GOOGLE PLAY STORE MALAYSIA</td>
<td>67 – 78</td>
</tr>
<tr>
<td>MANAGEMENT POLICIES FOR THE PREVENTION TECHNIQUE OF SoE ATTACKS</td>
<td>79 – 84</td>
</tr>
<tr>
<td>SUPPLIER RELATIONSHIP MANAGEMENT EFFECT ON PRICE CONTROL BEHAVIOR OVER SMALL BICYCLE SHOPS SALES IN KOTA BHARU, KELANTAN</td>
<td>85 – 92</td>
</tr>
<tr>
<td>BUSINESS STRESS, JOB SATISFACTION, AND EMPLOYEE PERFORMANCE AMONG SMES IN MALAYSIA: A CONCEPTUAL STUDY</td>
<td>93 – 99</td>
</tr>
<tr>
<td>Title</td>
<td>Pages</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>COPING WITH RETIREMENT CRISIS: ARE SMALL MEDIUM ENTERPRISE READY TO FACE UNCERTAINTY OF GLOBAL ECONOMIC</td>
<td>100 - 109</td>
</tr>
<tr>
<td>MODEL INTEGRASI PEMBELAJARAN KEUSAHAWANAN BERASASKAN PENGALAMAN (I-ICE) MENERUSI PROGRAM PERINTIS KEUSAHAWANAN EKONOMI KREATIF</td>
<td>110 – 116</td>
</tr>
<tr>
<td>PERCEPTIONS OF TERTIARY STUDENT’S TOWARDS A CAREER IN HOSPITALITY &amp; TOURISM INDUSTRY</td>
<td>117 – 127</td>
</tr>
<tr>
<td>THE PERCEPTUAL STUDY OF GREEN PRACTICE IMPLEMENTATION AT OFFICE AMONG POLITEKNIK KOTA BHARU STAFF</td>
<td>128 – 139</td>
</tr>
<tr>
<td>FACTORS INFLUENCE ON ACCOMMODATION SELECTION AMONG GUEST IN KELANTAN</td>
<td>140 - 147</td>
</tr>
</tbody>
</table>
PREFACE

On behalf of the conference committee, it is our pleasure to present to you the proceedings of the 1st Beehive International Social Innovation Conference 2018. The conference theme is on Social Innovation. This conference addresses research, experiences and information in the success of the industrial revolution is by using social innovation as a theme towards developing a country and also as the theme chose by many startups to start their business.

The conference is also the platform for researchers, educators, startups and entrepreneurs from various international institutions and industries to disseminate new ideas relevant to the 4th Industrial Revolution. The presentations were held on October 03 – 04, 2018 at Universiti Malaysia Kelantan, Kota Bharu Malaysia.

The major areas covered and presented in this volume are very wide and related with Social Innovation which include Industrial Revolution 4.0, Entrepreneurship, Business, Humanities/Social Science, Big Data, Poverty Eradication, Hospitality, Tourism & Wellness, Youth Volunteerism, Creativity & Innovation In Islamic Perspective, Technical & Vocational Education & Training, Innovation In Education.

The main media for the proceedings of this conference is the program book and abstract book which were distributed to all participants during the conference. Further information pertaining the conference can be accessed through http://www.beehive-umk.com/.

In closing, we would like to thank all authors for submitting their work and all members of the BISIC Committee, for their cooperation and time spent in the preparation of this proceeding. We look forward to the continuation of next BISIC Conference in the future.

Thank you.
Proceeding Coordinator
BISIC2018
PROCEDINGS COMMITTEE

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YOUNG ENTREPRENEURSHIP ACCELERATORS PROGRAMME: THE BeeHIVE SOCIAL INNOVATION MODEL
Nik Maheran Nik Muhammad

Universiti Malaysia Kelantan

Keynote Speech
Beehive International Social Innovation Conference (BiSIC) 2018
3 – 4 Oct. 2018

Abstract

Beehive model focuses on social innovation business development aimed at increasing economic power and opportunities for marginalized youth population in Malaysia. The model is a multilevel component that encompasses of five (5) elements namely Space, Environment, Culture, Learning, Community and Partnership. The focus is helping youth to develop new ideas and create their own start-ups which have been an important trend in recent years. It is widely acknowledged that today’s start-ups have the potential to be the major employers of tomorrow, and initiatives to help entrepreneurs develop the right business skills to flourish are encouraged and welcomed by government and business leaders. Thus, the establishment of BeeHive center at UMK was designed to create incubation and acceleration space to the youth who aim to leash their potential in business, encourage existing young entrepreneurs to gain experience and knowledge, find business opportunities as well as share their views with other entrepreneurs and community at large.

Keywords: Incubators, Accelerators, Social Innovation,

Introduction
Universiti Malaysia Kelantan (UMK), Babson College (USA) and Wob Labs Ltd. (France) has established an integrated collaboration known as the Beehive Malaysia Young Entrepreneurship Acceleration Program to focus on the development of young social entrepreneurs through incubator and accelerators program. These initiatives are among the many activities taking place in UMK that foster entrepreneurship and take young entrepreneurs along the journey to getting funded and scaling their businesses. This project demonstrates that it certainly having the desired effect – to create start-ups that have the potential to be future creators of high-quality jobs.

Beehive Model proposes a user driven approach to innovation where social innovation, is explored within the context of multiple stakeholders including participants from user community, university, business and government. The model combines user driven innovation process with the Quadruple Helix model where different participants all have their indispensable and complimentary roles, activity and contributions throughout the innovation process in supporting its success and social goals. The model is a multilevel component that offers space with learning environment, entrepreneurship culture and partnership to the young community to share ideas and values who seeks for new capital and new ventures for the social needs through social innovation and entrepreneurship.
Social Innovation

Social innovation is commonly defined as new ideas (products, services and models) that simultaneously meet social needs and create new social relationships or collaborations (Grisolia, Francesco and Ferragina, Emanuele, 2015). These innovations are considered both good for society and capable of enacting greater societal involvement in the provision of social services (Murray, Caulier-Griece and Mulgan, 2010). Social innovation is characterised by the capacity to address social needs that traditional policy seems increasingly unable to tackle; the empowerment of groups and individuals; and the willingness to change social relations. Hence, social innovation is often presented as a way to increase the quality of social services and their cost-effectiveness, offering equivalent, if not superior, outcomes despite considerable budget constraints.

Social Innovation has an inter-sectorial approach and is universally applicable. Social Innovations are launched by a variety of actors, including universities or research institutions, private companies, government or independent organizations (NGOs), which each tend to use their own approach and needs. Social Innovation focuses on new work and new forms of cooperation that work toward a sustainable society.

Historically, the themes and concepts in social innovation existed long before as social innovation was discussed in the writings of figures such as Peter Drucker and Michael Young in the 1960s (Gavron, Dench and, 1995). It also appeared in the work of French writers in the 1970s, such as Pierre Rosanvallon, Jacques Fournier and Jacques Attali (Chambon, David, and Devevey, 1982). Benjamin Franklin also talked about small modifications within the social organization of communities that could help to solve everyday problems (Mumford, 2002). Other theories of innovation became prominent in the 20th century, Joseph Schumpeter, for example, addressed the process of innovation directly with his theory of creative destruction who derived it from the work of Karl Marx and popularized it as a theory of economic innovation and business cycle (Schumpeter, 1994). According to Schumpeter, creative destruction describes the "process of industrial mutation that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one". (Schumpeter, 1994), and his definition of entrepreneurs as people who combined existing elements in new ways to create a new product or service.

Another prominent innovators associated with the term social innovation include Pakistani Akhter Hmeed Khan, who established a cooperative microfinance for rural development called Comilla Model in 1959, Bangladeshi Muhammad Yunus, the founder of Grameen Bank which pioneered the concept of microcredit for supporting innovators in multiple developing countries in Asia, Africa and Latin America, and also inspired programs such as the Infolady Social Entrepreneurship Program (Foreign, Mail,2012). Thus social innovation are new strategies, concepts, ideas and organizations that meet the social needs of different elements which can be from working conditions and education to community development and health — they extend and strengthen civil society. Social innovation includes the social processes of innovation, such as open source methods and techniques and also the innovations which
have a social purpose — like volunteering, microcredits or long-life learning through social entrepreneurships.

**Social Entrepreneurship**

Social entrepreneurship, like social enterprise, is typically in the non-profit sector excluding both for-profit and public organizations (Phills, Deiglmeier, Miller, 2008). Both social entrepreneurship and social enterprise are important contributions to social innovation by creating social value and introducing new ways of achieving goals. Social entrepreneurship brings “new patterns and possibilities for innovation” and is willing to do things that existing organizations are not willing to do (Phills, Deiglmeier, Miller, 2008).

Social entrepreneurs are individuals with innovative solutions to society’s most pressing social problems. They are ambitious and persistent, tackling major social issues and offering new ideas for wide-scale change. Rather than leaving societal needs to the government or business sectors, social entrepreneurs find what is not working and solve the problem by changing the system, spreading the solution, and persuading entire societies to move in different directions. Social entrepreneurs on the other hand often seem to be possessed by their ideas, committing their lives to changing the direction of their field. They are visionaries, but also realists, and are ultimately concerned with the practical implementation of their vision above all else (Masselin, 2014).

Social entrepreneurs present user-friendly, understandable, and ethical ideas that engage widespread support in order to maximize the number of citizens that will stand up, seize their idea, and implement it. Leading social entrepreneurs are mass recruiters of local change makers—role models proving that citizens who channel their ideas into action can do almost anything. Thus as entrepreneurs change the face of business, social entrepreneurs act as the change agents for society, seizing opportunities others miss to improve systems, invent new approaches, and create solutions to change society for the better (Masselin, 2014). While a business entrepreneur might create entirely new industries, a social entrepreneur develops innovative solutions to social problems and then implements them on a large scale.

Hence, the Beehive model aims to develop social entrepreneurs through social innovation strategies by providing platform or space for youngsters’ to be incubated or accelerated within the learning and entrepreneurship culture and environment under the support of quadruple helixes.

**Social Innovation Model**

**Innovation Ecosystem**

The Innovation ecosystems are about ‘What’ and ‘How’ innovation is created. It creates learning environment that provide platform for opportunities, information and ideas. Figure 1 below is an example of user-drive Innovation Wheel which divides the innovation process into two overlapping phases: a WHAT phase that focuses on what to innovate and a HOW phase, which focuses on how to innovate it. The process has several iterations leading to a refinement of the product as it is being produced, tested,
adjusted and tested again. This leads to new insights that ensure value-creation for end-users. The end-users and the entrepreneur will be integrated into all steps of the process, either directly present or indirectly through ethnographic research and the business ‘idea market’ and commercialisation (www.express2connect.org)

Figure 1: Innovation wheel (adapted from E2C www.express2connect.org)

SVhk (Social Ventures Hong Kong) spiral model of social innovation on the other hand believes on the model of social innovation that creates New Values, New Ideas, New Ventures and New Capital, which self-perpetuates and continually expands. Throughout this process, the model provides the Change Makers that inspire new minds, the Collaborative Platform that facilitate innovative concepts, Professional Volunteers who support the incubation of projects and a network of Engaged Givers who invest in projects with social impact.
Based on this two adopted model, BeeHive multilevel, multifaceted and integrated model was proposed which comprise of all elements from the innovation wheel and the spiral model of social innovation (see figure 3).
In Malaysia, the business start-up ecosystem has seen rapid growth not just in the number, but also of incubators, accelerators and co-working spaces. What is driving this trend in Malaysia’s entrepreneurship ecosystem? There are several factors – including entrepreneurship programs at Malaysia’s universities and community colleges, government support for start-ups and the evolution of social entrepreneurship and innovation programs such as the establishment of MAGIC, Malaysian Global Innovation Centre. University-affiliated programs are encouraging a good number of aspiring entrepreneurs, and providing practical routes to learning about starting and growing their business. Thus, Beehive Malaysia aims to promote the culture of social innovation through steady flows of social initiatives and interests. It is also aim to create new learning environment for new skills and knowledge for start-up and business acceleration.

**BeeHive Social Innovation Model (BeeHive)**

The idea of BeeHive was initiated in France in the year 2007 by Wow Lab Ltd. which originally known as *La Rughs*. In 2013, under the collaboration of UMK, Babson College, WowLabs and US State of Government, the Beehive Malaysia was established and the Beehive-Malaysia (BeeHive) model was established to suit the culture and needs for Malaysian Environment.
BeeHive is a quadruple helixes model where the key actors within the ecosystem are universities, businesses, government and communities who act as knowledge and research partners, commercial partners, and capital and development partners respectively. At UMK, the BeeHive Young Entrepreneurship Acceleration Program, is open to UA undergraduate and graduate students from any field of studies as well as youth community in Malaysia. For the students who join the program, they will learn by doing – they receive a year of intensive experiential education that engages them in the process of moving innovation from an early-stage idea to a sustainable investor-ready venture.

With every training and coaching that they received, students experience to advance their own new venture projects. The program culminates in students developing and pitching a viable, comprehensive plan for a new business venture, complete with market analysis, detailed financials and a rollout plan. Figure 3 below is an illustration of the BeeHive Model.

![BeeHive Model](image)

**Figure 3: BeeHive SPACE Model**

The focus of the program is not just about launching ventures, but about developing a new way of thinking. Beehive program works closely with successful, experienced entrepreneurship coaches-in-community. Additionally, there are mentoring workshops where government agencies and businesses listen to pitches and provide critical feedback to help students refine and expand their business ideas. At Beehive, we also offer SPACE in the form of incubators and accelerators which delivers a number of activities to foster learning and networking environment for student-led culture of
innovation and entrepreneurship. Thus Beehive Model is an Inter-sectorial collaboration (figure 3) which is a Quadruple Helixes model with the involvement of government agency, Community and Businesses.

Beehive Incubators

At UMK, the Beehive Incubators program has supported over 50 students team and over 500 students in the past 5 years. The program is an individualized, student-centered entrepreneurship program delivering economic, social, and educational impact. Teams selected for Beehive are awarded office space, mentoring, seed funding and an educational program for venture acceleration. During their incubation, Beehive also hosts entrepreneurship boot camp, enabling students to learn through the act of creating, and build their own strategy and test it as they go. They were expose to hands-on how to build scalable companies that solve their business problems. During the boot camp, student teams get practical in all aspects of setting up and growing a business – from business model creation, development and prototyping, to market validation.

In this program, selected teams work as a cohort for four weeks under the facilitation of Wow Labs to strengthen their business vision by creating a validated business model. Each week the teams identify and validate key aspects of their business model, including customer segments and value proposition. At the end of the four weeks, teams are also provided access to bee hive accelerators program to continue developing their ventures. The selected participants of the program were also awarded a certificate as entrepreneurial couches.

In the past three years, Beehive incubators have raised six (6) social entrepreneurs ranging from preschool education for the rural, food and beverages for the university community, corporate attire and clothing (refer to appendix 1).

Beehive Accelerators

The terms "accelerator" and "incubator" are often assumed to represent the same concept. However, there are a few key distinctions between the two. Accelerators and incubators both offer entrepreneurs good opportunities to get help to quickly grow their business and getting better chances of attracting top Venture Capitalist (VC) firm to invest in their start-up. However, the programs and framework for start-up success between Accelerators and Incubators are different where the goals of an Accelerator "accelerate" growth of an existing company, while Incubators "incubate" disruptive ideas with the hope of building out a business model and company. So, accelerators focus on scaling a business while incubators are often more focused on innovation.

On the other hand, one of the big differences is in how the individual programs are structured. Accelerators programs usually have a set timeframe in which individual companies spend anywhere from a few weeks to a few months working with a group of mentors to build out their business and avoid problems along the way. The example in Beehive accelerators are Perintis Aulad Project a social entrepreneur preschool and Futuriz Venture that produce Batik Craft to accelerate Malaysian Batik to the world

1 Wow Labs was established in Paris www.wow-labs.com
These programs provide social entrepreneurs with the opportunity to meet seasoned entrepreneurs and mentors, get advice, refine the business model, receive start-up capital, or pitch the business to potential investors.

**Conclusion**

In conclusion, Beehive Young Entrepreneurship Accelerators Program (Beehive-UMK) was initiated by UMK in collaboration with office of Special representative for Muslim Community, United State of Government; Wow-Lab Ltd. and Babson College. Its vision is to create a generation of professional entrepreneurs and successful based on the holistic approach of entrepreneurship ecosystem that incorporates three (3) entrepreneurial elements namely education, social, science and technology. Its mission is to develop knowledgeable and insightful Youth Entrepreneurs in realizing the National Entrepreneurship Agenda and tackling the youth social issues. The program has successfully trained more than 500 participants encompasses of young communities and students at large (elementary, secondary and tertiary level).

The program has produced eleven (11) entrepreneurial coaches among the faculty member and students of UMK. These certified entrepreneurial coaches have produced four (4) modules of social innovation. Furthermore, 50 teams of social entrepreneurs had involved in the incubators program and 6 teams were successfully gone forward for accelerators program.

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Abstract - NoSQL database stores data as a free style, provides a new type of access interface, and overcomes the shortcomings of relational database to design to be deployed inexpensive hardware to support distributed storage and to transparent extension node. There are various types of popular NoSQL database products and this article will focus on discussing data storage and management services in Hadoop and MongoDB. First, the background and components inside Hadoop and MongoDB databases are pointed out. Then the current applications situations and some common ideas of Hadoop’s HBase and MongoDB are introduced. A summarize table consists of comparison in features, strength and weakness between Hadoop’s HBase and MongoDB are discussed. To demonstrate the effectiveness and usefulness of HBase and MongoDB, this article describes some application of real world MongoDB and HBase deployment. This paper follows the path of database technology progress and unfold the new landscape of data management technology from the angle of applications. Finally, research prospects are provided at the last part of this paper.

Keywords: NoSQL database; MongoDB; Hadoop; Hbase; comparison.

1. INTRODUCTION ON BIG DATA AND NOSQL

The revolutionary progress of data collecting techniques, dramatic decrease of the price of storage devices, as well as the desirability of people to extract information from the data have given birth to the so-called big data and data management technologies ushers in the age of big data [1]. Relational database management system (RDBMS) undergoes a development of 40 years since the 1970s and now encounters some difficulties such as limited system scalability and limited data variety support [2]. In order to address this explosion of data growth, various Big Data platforms have been conceived to help manage and structure this data. In recent years, NoSQL technologies has risen suddenly as a new force [2]. NoSQL system is mostly non-relational database systems that are distributed and are understood as Not Only SQL [3]. NoSQL database is known to provide easier scalability, storage flexibility, and greater data manipulation and performance improvement [3]. NoSQL database breaks the traditional relational model, stores data as a free style and provides a new type of access interface [4]. Besides, it is also can overcomes the shortcomings of relational database on inexpensive hardware and thus will support distributed storage and to transparent extension node [5].

1.1 CAP Theorem and NoSQL databases

The CAP Theorem which was conceived in 2000 by Eric Brewer [6] [7] provides the basic requirements for a distributed system to follow the following requirements which are:-

- Consistency (all nodes see the same data at the same time)
• Availability (a guarantee that every request receives a response about whether it was successful or failed)
• Partition tolerance (the system continues to operate despite arbitrary message loss or failure of part of the system)

Eric Brewer [6] stated that distributed computing cannot achieve simultaneous Consistency, Availability, and Partition Tolerance while processing data, where few years later this theory was also supported by Seth Gilbert and Nancy Lynch [8]. According to CAP Theorem, distributed systems can satisfy any two features at the same time but not all three features [9]. For CA based database, user can ensures its priority more towards data availability and consistency by using replication approach. Part of database doesn't bother about partition tolerance. In case of occurrence of a partition between nodes, the data will go out of sync [9]. For AP based database, the user can ensures data availability and partition tolerance primarily. Even if there is a communication failure between the nodes, nodes remain online. Once after the partition gets resolved, resynchronization of data takes place, but without the guarantee of consistency [9]. And if is CP based database, the user can ensure data consistency. But it does not support for good availability. Data gets stored in distributed nodes [9]. When a node goes down, data becomes unavailable to maintain consistency between the nodes. It maintains partition tolerance by preventing resynchronization of data.

Traditional RDBMS solutions provide consistency and availability, but fall short on partition tolerance. Big Data solutions typically lean towards supporting partition tolerance and consistency, or availability and partition tolerance [10].

Figure 1: CAP Theorem [11]

1.2 NoSQL Databases Classification

There are various types of NoSQL database systems among which are Key-value stores, Wide-column stores, Graph databases and Document stores which are identified most commonly.

• Key-value stores are the simplest. Every item in the database is stored as an attribute name or key together with its value [3]. Riak, Voldemort, and Redis are the most well-known in this category.
• Wide-column stores store data together as columns instead of rows and are optimized for queries over large datasets [3]. The most popular are Cassandra and HBase.
• Document databases pair each key with a complex data structure known as a document. Documents can contain many different key-value pairs, or key-array pairs, or even nested documents [3]. MongoDB is the most popular of these databases.
• Graph databases are used to store information about networks, such as social connections [3]. Examples are Neo4J and HyperGraphDB.
From all of these many platforms, two in particular have become increasingly popular choices which is HBase from Apache Hadoop and MongoDB. While both of these solutions have many similarities, their approach to processing and storing data is quite different. Both platforms are at providing partition tolerance and consistency [12].

2. HISTORY AND EVOLUTION OF HADOOP AND MONGODB

2.1 Hadoop History and Evolution

Hadoop [13] [14] [15] is a framework for performing big data analytics which provides reliability, scalability, and manageability by providing an implementation for the MapReduce [16] paradigm. It is an Apache open source framework written in java that allows distributed processing or large datasets across clusters of computers using simple programming models [17]. Basically, Hadoop is working when there are many commodity computers are tied together with a single CPU as a single functional distributed system and practically the cluster can read the dataset in parallel and provide a much higher throughput [17]. The advantages of using Hadoop is its framework allows the user to quickly write and test distributed systems. It is efficient, and it automatic distributes the data and work across the machines and in turn, utilizes the underlying parallelism of the CPU cores [17].

According to Tom White [18], Hadoop was created by Doug Cutting. Hadoop originally stemmed from a project called Nutch which is an open-source web crawler created in 2002. A few years later, Nutch followed very closely at the heels of different Google Projects. In 2003, when Google released their Distributed File System (GFS), Nutch released their own, which was called NDFS. Meanwhile in 2004, Google introduced the concept of MapReduce, with Nutch announcing adoption of the MapReduce architecture shortly after in 2005. It wasn’t until 2008 that Hadoop was officially released. Using concepts carried over from Nutch, Hadoop became a platform for parallel processing mass amounts of data across clusters of commodity hardware. The current version of Hadoop is version 2.9.0 which was release at the date of 17 November 2017. This is the first release of Hadoop 2.9 line. There are some major change in this version upon version 2.8.2 including 30 New Features with 500+ subtasks, 407 Improvements, 790 Bug fixes new fixed issues [19].

2.2 MongoDB History and Evolution

MongoDB was originally developed by the company 10gen which is now known as MongoDB Inc. in 2007 as a cloud-based app engine, which was intended to run assorted software and services [20]. They had developed two main components, Babble which is the app engine and MongoDB database. In 2009, it is introduced in the market as an open-source software. The first ready production of MongoDB has been considered from version 1.4 which was released in March 2010. The current version of MongoDB is MongoDB 3.4 which was the latest and stable version, released on 29 Nov 2016 [21].

MongoDB is a document oriented database designed for best scalability, high availability and good performance. Document oriented database is a key feature of MongoDB and offers a document oriented storage [20]. It allows data persistence in a nested state and have the ability to query the nested data in an undefined fashion with embedded queries. In addition, it does not inflict schema, allowing it to adapt quickly as applications. Moreover, a MongoDB document can contain field types that other documents of the same collection do not have. Anyhow of this flexibility, MongoDB still ensures expected functionalities such as full query language and consistency. MongoDB is in the forefront of NoSQL databases, providing agility and scalability to
businesses. More than thousand companies and new start-up companies have acquire and are using MongoDB to develop new applications, refine client experience, fast track marketing time and minimize costs. It’s use of mostly bigger web applications like Facebook, Amazon, Google etc. Thus, MongoDB can certainly be considered a Big Data solution and where its general purpose platform is designed to enhance existing RDBMS systems, giving it a healthy variety of use cases [20].

3. HADOOP COMPONENTS

3.1 Hadoop’s Ecosystem

Hadoop is a framework comprised of a software ecosystem. The primary components of Hadoop are the Hadoop Distributed File System (HDFS) for the big data storage and MapReduce for big data analytics, which are written in Java [22]. Secondary components are a collection of other Apache products, including Hive for querying data, Pig for analyzing large data-sets, HBase which is based on column oriented database, Oozie for scheduling Hadoop jobs, Sqoop for interfacing with other systems, and finally Flume for aggregating and preprocessing data [22].

3.2 Hadoop Distributed File System (HDFS)

HDFS is one of the core components of the Hadoop framework and is responsible for the storage aspect. Unlike the usual storage available on our computers, HDFS is a distributed file system and parts of a single large file can be stored on different nodes across the cluster. HDFS is a distributed, reliable, and scalable file system [23] [24].

HDFS has a master and slave architecture. An HDFS cluster consists of a single NameNode which is a master server that manages the file system namespace and regulates access to files by clients [23] [24]. There are a number of DataNodes which are usually one per node in the cluster that able to manage storage attached to the nodes that they run on. HDFS will exposes a file system namespace and allows user data to be stored in files. In fact, a file is split into one or more blocks and these blocks are stored in a set of data nodes [23] [25]. The NameNode executes file system namespace operations like opening, closing, and renaming files and directories. It also determines the mapping of blocks to DataNodes. The DataNodes are responsible for serving read and write requests from the file system’s clients [24]. The DataNodes also perform block creation, deletion, and replication upon instruction from the NameNode [23] [1].

In HDFS, the NameNode and DataNode are designed to run on commodity machines which are typically run a GNU or Linux operating system. Besides, machines that supports Java can run the NameNode or the DataNode software because HDFS is built using the Java language. Usage of the highly portable Java language means that HDFS can be deployed on a wide range of machines [23] [13].

Figure 2: HDFS Architecture [1]  
Figure 3: MapReduce Architecture [27]
3.3 Map-Reduce

Hadoop MapReduce applied client server architecture on top of HDFS [1] [24]. In MapReduce, a JobTracker is applied for taking in requests from a client and assigning TaskTrackers with tasks to be performed. The JobTracker tries to assign tasks to the TaskTracker on the DataNode where the data is locally present. It will try to assign tasks to TaskTrackers within the same rack. If for some reason the node fails, the JobTracker assigns the task to another TaskTracker where the replica of the data exists since the data blocks are replicated across the DataNodes. This ensures that the job does not fail even if a node fails within the cluster [18] [26] [24].

Meanwhile, TaskTracker accepts tasks from the JobTracker. The TaskTracker keeps sending a heartbeat message to the JobTracker to notify that it is alive. Along with the heartbeat it also sends the free slots available within it to process tasks. TaskTracker starts and monitors the Map & Reduce Tasks and sends progress or status information back to the JobTracker [18] [26][24].

3.4 Other Component of Hadoop – Hbase

HBase, a NoSQL database under Apache Hadoop, is an open source data storage system based on column family. HBase is an open-source database written in Java and developed by the Apache Software Foundation. HBase was created in 2007 at Powerset, a company based in San Francisco that was developing a natural language search engine for the Internet and was initially part of the contributions in Hadoop [28]. It is available under the Apache Software License, version 2.0. It is intended to be the open-source implementation of the Google BigTable [29] principles, and relies on the Apache Hadoop Framework and the Apache ZooKeeper projects. It is, therefore, a column-store database. HBase’s architecture is highly inspired by Google’s BigTable [29], and, thus, their capabilities are similar. Google’s BigTable is a distributed storage system for managing structured data that is designed to scale to a large size which is petabytes of data across thousands of commodity servers [29] [28].

There are 4 main component in HBase which are Client, ZooKeeper, HMaster and HRegionServer. The HBase cluster has one Master node (HMaster) and multiple Region Servers (HRegionServer). HBase basically has two unique tables which are - ROOT- and .META. table. The .META. table will record the HRegion’s messages of the data table and this .Meta. table can have many HRegion. On the other hands, - ROOT- will record the Region’s message of the .META table, but -ROOT- table will only have one HRegion. The ZooKeeper will recorded the location of -ROOT- table. Thus, the general communication flow is from Client, Zookeeper, -ROOT-, .META and finally to HBase database [29] [28].

Figure 4: HBase Architecture [30]  
Figure 5: MongoDB Architecture [32]
4. MONGODB COMPONENTS

The MonogoDB database is a document-oriented database management system. It consists of a set of databases in which each database contains multiple collections. Due to the reason of MongoDB operates with dynamic schemas, every collection might contain different types of datas. Each object called as documents and is stored as Binary JSON (BSON), which is a list of key value pairs [31] [32]. This documents is readily available for specified queries, indexing, replication, and MapReduced aggregation. Database Sharding can also be applied to allow distribution across multiple systems for horizontal scalability as needed [31] [33].

MongoDB is written in C++, and can be deployed on a Windows or Linux machine, but especially considering MongoDB for real-time low-latency projects, Linux is an ideal choice for the sake of efficiency MongoDB supports standalone or single instance operations [31] [34].

In MongoDB, it is important to know the roles of replication and sharding. Replication is a very important concept for MongoDB and is always the ideal setup for production environments. Sharding is a technique that allows records inside a database to be split across multiple servers. This means that for replication, the replica sets provide high performance of replication with automated failure handling, while for sharding, sharded clusters make it possible to divide large data sets over different machines which are transparent to the users. MongoDB users combine replica sets and sharded clusters to provide high levels of redundancy of data sets which are transparent for applications [35][36]. Figure 5 shows that MongoDB supports sharding through the configuration of a sharded clusters.

5. COMPARISON AMONG HADOOP’S HBASE AND MONGODB ANALYSIS

MongoDB and HBase provide data model flexibility, scale-out with sharding and high read and write performance. However, there are some differences between them and are shown as below table 1.

<table>
<thead>
<tr>
<th>Features</th>
<th>Comparison between MongoDB and HBase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Model</td>
<td>• MongoDB is a document-oriented database while HBase is based on the Wide Column family.</td>
</tr>
<tr>
<td></td>
<td>• In MongoDB, the documents match the structures of objects in programming languages, providing greater simplicity to developers</td>
</tr>
<tr>
<td>Supported Data Types</td>
<td>• The supported data types in MongoDB is multiple, including strings, 32 and 64 bit integers, floats, Decimal 128, dates, timestamps and geospatial while data in HBASE is converted to un interpreted bytes.</td>
</tr>
<tr>
<td></td>
<td>• MongoDB support for multiple data types allows faster application development and data re-use between applications</td>
</tr>
<tr>
<td>Features</td>
<td>Comparison between MongoDB and HBase</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Query Model                   | - MongoDB uses expressive query language with powerful query operators, comparison, equality, projections, filtering and aggregations while HBase uses Key-Value.  
- In MongoDB, an expressive query language enables running more complex queries to support advanced operational and real time analytics workloads |
| Secondary Indexes             | - MongoDB support several native feature of the database, including text geospatial, compound, TTL indexes, and more while HBase, materialized views maintained by developers in code, or with coprocessors.  
- The native secondary indexes enables greater developer productivity, while supporting richer data access patterns to answer complex queries |
| Aggregations                  | - MongoDB has aggregation pipeline including JOINs, graph traversals, search facets and more while HBase, data must be moved into dedicated analytics infrastructure for any queries beyond key-value lookups.  
- Native database aggregations enable real time analytics on live operational data, without ETL into dedicated analytics systems |
| Text Search                   | - MongoDB has native feature of database with support for text indexes while HBase, data must replicated to dedicated search engine  
- With text search integrated into the database, developer productivity is increased and operational complexity is reduced |
| Data governance               | - For MongoDB, schema validation enables users to blend schema flexibility, with strict data governance controls  
- Developers spend less time defining data quality controls in applications, and instead delegate these tasks to the database |
| Building reactive, event-driven apps | - In MongoDB, there are change streams API enabling consuming apps to view, filter, and act on data changes as occur in database.  
- MongoDB support fully reactive applications making it simple to stream data changes and trigger actions wherever they are needed |
| Database Drivers              | - 11 MongoDB supported drivers 30+ community supported drivers while For HBase it supported Java driver. Thrift and REST APIs  
- Idiomatic drivers in programmers’ preferred language enables faster application development |
| Minimum number of nodes to create a production-ready cluster | - In MongoDB the number of nodes is 3 nodes: Primary and secondary nodes deployed in a MongoDB replica set while in HBase, the number of nodes is 10 nodes: Primary and secondary Hmasters, RegionServers, active and standby NameNodes, HDFS quorrum journal manager, DataNodes and Zookeeper ensemble.  
- Reducing both the number and types of nodes lowers operational complexity and hardware footprint |
<p>| Recommend maximum             | - In MongoDB, the recommended maximum data stored per node is governed by limits of underlying storage while in HBase, the recommended maximum data stored per node is 4TB |</p>
<table>
<thead>
<tr>
<th>Features</th>
<th>Comparison between MongoDB and HBase</th>
</tr>
</thead>
<tbody>
<tr>
<td>data stored per node</td>
<td>- Larger per-node storage capacity reduces the number of nodes needed to manage multi-TB data sets</td>
</tr>
<tr>
<td>Recovery time after a primary node failure</td>
<td>- Recovery time after a primary node failure in MongoDB is approximately 2 seconds. Reads can still be served from a secondary node while the recovery time after a primary node failure in HBase is approximately 60 seconds. Reads can be still be served from a secondary node. - Faster recovery reduces the impact of outages</td>
</tr>
<tr>
<td>Maintain performance predictability by eliminating Java Garbage Collection (GC) pauses and reducing compaction impact</td>
<td>- MongoDB is written in C++, and therefore not susceptible to Java GC pauses. With the WiredTiger storage engine, compaction is a continuous background process. While for HBase is written in Java and susceptible to Java GC causes. Compactions are triggered when specific thresholds are exceeded, and are therefore recommended for times of low database utilization - Eliminating Java GC pauses and reducing the impacts of compaction ensures performance predictability</td>
</tr>
<tr>
<td>Data partitioning (sharding) for scale-out</td>
<td>- Data can be partitioned by MongoDB using hash, range or zone sharding while HBase data can be partitioned by hash only - Configurable sharding policies enables administrators to partition data based on application query patterns and data locality requirements</td>
</tr>
<tr>
<td>Backup and recovery</td>
<td>- MongoDB Ops Manager and MongoDB Atlas consistent, point in time backups across sharded clusters. Snapshots are performed up to 60-seconds apart for each node in the cluster. - Consistent point in time backups provides seamless disaster recovery and data protection</td>
</tr>
<tr>
<td>Spark and Hadoop compatibility</td>
<td>- The MongoDB Connector for Apache Spark provides certified Spark and Hadoop integration while HBase uses HDFS for storage and replication. HDFS objects must be encoded before being accessible to HBase. - Both databases can be integrated with Spark and Hadoop as part of a big data platform</td>
</tr>
</tbody>
</table>

### 5.1 The Strength of MongoDB

MongoDB have the strong and automated shardings and replication technique. This is because it will give a good application by providing high read and write throughput and data distribution. The sharding and replication will scale read and write traffic across multiple servers, multiple tenants or data centers. Besides, sharding and replication will let user work around hardware limitations in the cloud [32] [36]. The dynamic schema and BSON data model enable flexible data storage without sparse tables or complex joins, and provide for an intuitive query language. The variable data in objects are easily mapped to BSON documents which is more natural. This makes MongoDB more developer friendly and since MongoDB is schema less, it is easier to change the data structure by just adding any kind of fields at any time [32]. MongoDB supports replica set which allows for data redundancy, fault tolerance and disaster recovery. The MongoDB will supports automatic failover process that takes place when
the primary node in a replica set isn't accessible for some reasons. This makes MongoDB easily configurable to be a high available database [32] [33]. MongoDB provides low latency access. The memory mapped storage engine caches documents in RAM, enabling in-memory operations. Data locality of documents significantly improves latency over join-based approaches [32] [31]. Furthermore, when the data fits the document data model, MongoDB can show a very big improvement in performance. MongoDB encourages denormalising data into a single document and then it can provide great performance. The MongoDB also good in supporting deep query capabilities such as full-text search, regular expressions, dynamic queries on documents, aggregation, and sorting [31]. Finally, the MongoDB allows users to write scripts for the Mongo shell in JavaScript that manipulate data in MongoDB or perform administrative operation.

5.2 The Weakness of MongoDB

MongoDB is not suitable for relational data since joins aren't supported. If data is so much related and doesn't fit into document data model, users will have to normalize data model and this will result in many follow up queries that reduce the performance or introduce code complexity [32]. When dealing with model related data and run complex join-intensive queries, it is also not suitable to apply MongoDB. This is because modelling related data can lead to high duplication of the data that can result in documents which increase to unbound limit [36]. The performance will degrade and the complexity will increase when dealing with large documents [35]. The aggregation and the query in MongoDB is done in the collection level which makes running complex aggregate queries not an easy task [37]. MongoDB supports transaction on the document level. However transactions are not automatically supported across different documents. Supporting transactions in MongoDB requires manual intervention to verify, commit or rollback using methods such as Two Phases Commits pattern [34]. The 32-bit MongoDB processes a re limit to about 2 GB of data, it is unable to support data which is bigger than 2.5GB [20].

5.3 The Strength of HBase

In HBase, it can store large data sets on top of HDFS file storage and will aggregate and analyze billions of rows present in the HBase tables. Another strength of using HBase is the database can be shared [29]. Besides, the operations of HBase such as data reading and processing will take small amount of time as compared to traditional relational models and it the read and write operations are happen randomly [28]. Finally, HBase usually is used extensively for online analytical operations [37].

5.4 The Weakness of HBase

There are some of the traditional models features cannot supported by HBase. Thus, HBase is not as a replacement for traditional models. There is another weakness of HBase where it cannot perform functions like SQL. It doesn't support SQL structure, so it does not contain any query optimizer [28]. Besides, HBase is CPU and Memory intensive with large sequential input or output access while as Map Reduce jobs are primarily input or output bound with fixed memory [29]. HBase integrated with Map-reduce jobs will result in unpredictable latencies HBase integrated with pig and Hive jobs results in some time memory issues on cluster. Finally, in a shared cluster environment, the set up requires fewer task slots per node to allocate for HBase CPU requirements.
6. DISCUSSION AND RECOMMENDATION

Several NoSQL technologies were developed to handle the present explosive growth of data. Nowadays, many NoSQL databases such as MongoDB and HBase are used for dealing huge unstructured data and these databases are suitable to deploy in different industrial application areas. In traveling industries, MongoDB can be deploy for online travel company. There is a real world successful MongoDB deployment in online travel company by Expedia. Expedia is an online travel company. Expedia took an initiative to create new feature called scratchpad which made the travel search process fast, easy and personalized. Expedia employs MongoDB to eliminate the handwritten note-taking process for travel planning that helps them to finds deals, makes recommendations, and gives users better understand the changing marketplace of travel [38]. With MongoDB’s flexible data model and simple horizontal scaling, the users were given a perfect vacation planning experience and its rich indexes powered analytics that made personalized suggestion to the users while planning and booking trips [39]. Thus, it is suitable for any traveling industry to deploy MongoDB in the online travel services which need to improve in storing unstructured data, managing evolving schema and data analytics.

In transportation industries, MongoDB can be deploy for airline online booking. There is a real world successful MongoDB deployment in airline online booking by China Eastern Airline. China Eastern Airline measured the impact of MongoDB across three dimension. First is by building an application that was just not possible on Oracle. MongoDB has provided a powerful, real-time search capability against fresh data with low latency across multiple online channels enables China Eastern Airline to create a differentiated experience for their customers. Second impact is in significant cost savings where MongoDB is proven as a viable alternative to Oracle, and served to reduce China Eastern Airline reliance on them in the future. Finally, the impact is in improving developer efficiency. The simplicity of the document data model, the dynamic schema, idiomatic drivers and indexing flexibility allowing China Eastern Airline to build new applications faster [40]. Thus, it is suitable for any transportation industry to deploy MongoDB in the airline online booking services.

In social media industry, HBase can be deploy in social messaging business. There is a real life successful use case where in Facebook has used HBase to support its social messaging business for a long time. Due to the increase of Facebook users, traditional Relational database management system can’t satisfy the rapid increase of the contents. Facebook used cellular to support the data requests. Largely static cellular can provide the ability to analyze data query, but it isn’t able to handle rapid changing data, which push cellular model did not meet the needs of the new social network of Facebook messaging. At last, Facebook chose to adopt hadoop and Hive and HBase to handle the access to data stored in Facebook’s data center. Hive is a data analysis tool on the establishment of Hadoop, HDFS and HBase. Facebook uses HBase to achieve the rapid read and write to data. Because of the adoption of HIVE, HBase, HDFS and Hadoop, Facebook is able to design a larger landscape for its future.

7. CONCLUSION AND SUMMARY

MongoDB supports very interesting features such as its unique document data model, scalability, availability and rich query support. This makes it suitable for many use cases such as logging and content management. It is always recommend to use MongoDB for application where the data can fit easily in the document data model.
MongoDB isn't a replacement for relational databases, and doesn't support well applications having data with a relational nature such as social data. Besides, MongoDB is not recommended for applications that requires high transaction support such as the critical financial applications. MongoDB excels on applications that requires efficient horizontal scaling, high availability and flexible data model that makes developer's life more easy and at the same time having a data suitable for the document data model. While for HBase, it is highly featured database than any other database HBase is faster than sequential execution for larger amounts of data as well as for smaller amounts of data. HBase is scalable as the amount of data increases because it uses technology of Map Reduce programming. The better way would be to go with sequential execution and with lesser number of processors.

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THE LEVEL OF SOCIAL CAPITAL AMONG LOW INCOME GROUP (B40) IN KOTA BHARU

Zainul Zolkifeli¹, Aziz Amin²

University of Sultan Zainal Abidin

zainulzolkifeli@gmail.com¹, wanazizmn@unisza.edu.my²

ABSTRACT

The purpose of this study is to identify the level of social capital among low income group. In 2016, Malaysia Department of Statistics recorded 2.7 million of the low income group B40, with 63% living in the urban areas while 37% lived rural areas. The percentage B40 in Kelantan was 8.3%. This situation is very serious because household income can affect quality of life of the family. To overcome this problem, communities are encouraged to use social capital as a tool to improve household income. This study involved 120 respondents among low income group in Kota Bharu. Data were collected using questionnaires and analysis was conducted using SPSS software. The result shows the elements of social capital has a positive level. This finding can be used as a foundation to create a better policies or program by the government in order to reduce the percentage of B40 in Malaysia.

Keywords: Social Capital, Low-income Group, Kota Bharu

INTRODUCTION

The expression "Social Capital" started from the regions of humanism and political theory and initially showed up in Hanifan (1916) investigation of rustic schools network focuses. It seemed later in network contemplates where systems of solid individual connections gave the premise to trust, participation and aggregate activity which were critical for the survival and working of city neighborhoods (Jacobs, 1965). At that point at the individual level, Loury (1977) examined the assets natural in family relations and network social structure furthermore, their job in the improvement of youthful kids. The idea was then connected to an extensive variety of social marvels, for example, the advancement of human capital, monetary execution of firms, geographic locales, and countries (Nahapiet and Ghoshal, 1998). Social capital is utilized to depict social assets installed in close to home ties, which are valuable in the advancement of people in network social associations and has been conceptualized either as an arrangement of social assets installed seeing someone or all the more extensively as counting, notwithstanding social connections, the standards and qualities related with them (Tsai and Ghoshal, 1998).
LITERATURE REVIEW

Social capital is another idea which was first presented in 1990 by French and American sociologists like Tocqueville, Bourdieu, and James Coleman. Social capital, like human capital (i.e. devices and trainings that upgrade an individual profitability), indicates highlights of a social association, for example, systems, standards, and trust which will encourage coordination and collaboration for getting shared advantages. Social capital is comprised of five principle segments that are utilized to quantify social capital: intentional support, social trust, social exercises (aggregate activities), a feeling of having a place and solidarity, and promise to values. Social capital is one of the things that are perceived by wellbeing contemplates as close to home and social variables with an effect on the soundness of individuals (Richardson, 1986).

Low-wage networks have particular qualities in regards to social capital that contrasts from center pay to high-wage networks. Numerous families in low-pay neighborhoods intermittently don't have the assets to meet their regular needs, and are frequently compelled to look for assistance from others to address these issues. Retreat and stream explore joins neighborhood conditions to social capital (Brisson and Usher, 2005). A significant component that impacts social capital in a network is concentrated prosperity. Low-wage networks have low levels of concentrated wealth, which can disallow solid social capital. This is additionally an essential boundary for ladies with respect to getting and constructing social capital, because of the way that ladies have a tendency to be less well-to-do than men in comparable fields (Brisson and Usher, 2005). As indicated by past previous study, high, direct, and low financial status the progressive arrangement of networks by and large significantly affect social working of individuals. In addition, they can be successful in the arrangement of subcultures and social characters (Javaheri, 2007). Then again, the distinctions in financial classes can influence the personal satisfaction of each gathering of network.

Researchers demonstrate that inhabitant interest might be basic to the advancement of social capital (Fuchs, Shapiro, and Minnite). In low-salary networks, inhabitant cooperation might be energized by an expansion in assets, for example, from the legislature or a program. Inhabitant support can likewise be expanded as a reaction to an emergency in the network, for example, falling apart general wellbeing of the network, a catastrophic event, or an emergency in the instruction framework. This people group interest can engage local gatherings to act naturally dependent and develop the nearby government structures (Brisson and Usher, 2005). People in low-pay network tend to not take an interest very in their locale. This occurs for different reasons. One such reason is the way that numerous people in low-salary networks tend to hold various occupations. Because of their low monetary status, the people in these networks can't stand to have just a single employment. Huge numbers of the employments these people hold pay the lowest pay permitted by law, which makes is certainly not a decent wage. In this manner, these people are compelled to hold numerous occupations. Along these lines, the people in low-wage networks don't have room schedule-wise to partake in network occasions. This can incredibly decrease the ability to assemble social capital.

In Sharifian and Fotovat”s ponder, which was directed on understudies in Shiraz University, it was reasoned that three vital measurements of social capital including investment, trust, and, informal organization affected students” personal satisfaction
Azimi and Edrisi directed a cross sectional examination on understudies in Azad University of Dehaghan in 2010; as indicated by their discoveries, social trust was perceived as one of the critical determinants of social capital which was successful in enhancing students’ personal satisfaction (Azimi L and Edrisi A, 2007). However, in this study, there are six dimensions of social capital that has been tested which are networks & communications; trust; value, norms & habits; social rules; ability or capability; religious needs. All this dimensions are important elements of social capital based on the previous studies and scholars in this field.

**MATERIALS AND METHODS**

The study was applied a cross sectional survey by quantitative methods. The research populations were low income group households in urban areas in Kota Bharu. This questionnaire uses five-scale feedback, starting from the lowest scale namely strongly disagree, to the highest scale which is strongly agree. The questionnaire contains six dimensions that were to measure the research variables namely social capital. A total of 120 respondents had answered the questionnaire. Data was analyzed using SPSS software.

**ANALYSIS AND DISCUSSION**

| Networks & Communications | 9 | 0.758 |
| Trust | 10 | 0.817 |
| Value, Norms & Habits | 10 | 0.805 |
| Social Rules | 10 | 0.865 |
| Ability or Capability | 10 | 0.876 |
| Religious Needs | 10 | 0.884 |

Based on Table 1, the value of Cronbach's Alpha for dimensions of social capital is 0.758, 0.817, 0.805, 0.865, 0.876 and 0.884 respectively. All of the above Cronbach's Alpha value exceeds 0.6 means the above items are suitable for use and acceptable as measurement (Cates, 1990).

| Networks & Communications | Trust | Value, Norms & Habits | Social Rules | N | Min | Max | Mean | Std. Deviation | Skewness | Kurtosis |
| 120 | 2.33 | 4.00 | 3.1759 | .37134 | .162 | -.216 |
| 120 | 2.50 | 4.00 | 3.3150 | .37900 | .070 | -.760 |
| 120 | 2.40 | 4.00 | 3.3008 | .33368 | .234 | -.091 |
| 288 | 2.30 | 4.00 | 3.3050 | .37346 | .284 | -.701 |
Table 2 shows the descriptive statistics of social capital among low income group in Kota Bharu. The levels of social capital among low income group are at a high level as shown. The statistics shows these dimensions, network and communication (mean=3.2747, std. dev.=0.39099); trust (mean=3.3458, std. dev.=0.36566); value, norms & habits (mean=3.3580, std. dev.=0.37538); social rules (mean=3.3347, std. dev.=0.37432); ability or capability (mean=3.4125, std. dev.=0.39321) and religious needs (mean=3.5743, std. dev.=0.37902).

All the variables dimensions of social capital indicate a min greater than 3. This indicates the level of social capital is high because the median scale for this scale is 3. If the value is greater than 3, it is considered as good as it is closer to the value 5. On the other hand, if the mean value of the score is lower than 3, the variable's level is considered low because it is approaching the minimum value 1. The scale of this measurement refers to the study conducted by Mohd Shaladdin, Wan Abd Aziz, & Nik Wan (2009). Hence, all the variables of social capital at high levels.

CONCLUSION AND IMPLICATION

In this study there was an attempt to merger fundamental research on social capital and interest on the important writing for data frameworks inquire about. A rundown of key ideas was presented what's more, a system created by Nahapiet what's more, Ghoshal (1998) was displayed. Social capital can be a profitable resource for associations what is more, directors should attempt to encourage it by empowering social connections between workers, specialty units, provincial workplaces and even with colleagues. This finding can be utilized as an establishment to make a superior arrangements or program by the administration keeping in mind the end goal to lessen the level of B40 in Malaysia.

REFERENCES


Detection of Structural Break for Electricity Consumption Data: A Comparison between Maximum Likelihood Estimation and Bayesian Method.

Nurul Najwa Jatarona¹, Norazan Ramli² and Mohd Alias Lazim³
¹ Faculty of Business & Innovation, iCOOP College, nurul@iccoop.edu.my
² Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA, norazan@tmsk.uitm.edu.my
³ Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA, dralias@tmsk.uitm.edu.my

ABSTRACT

Recently, structural break become an important issue in macroeconomic time series data. The secondary data from the Energy Commission were used starting from 1999 to 2012 of electricity consumption from residential and transport sector in Malaysia. This data used to examine the state space model and to detect the structural break using two different methods which is the Maximum Likelihood Estimation method (MLE) and Bayesian method. The unit root tests conduct as a confirmatory test using the Augmented Dickey-Fuller test (Carrasco, 2002) (ADF), Phillips-Perron (PP), the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) and Zivot and Andrews (ZA) test. The state space model used in order to estimate the model using Maximum Likelihood Estimation method (MLE) and Bayesian method in order to estimate the model parameters, followed by Kalman Filtering, smoothing and forecasting. The results show that the Maximum Likelihood Estimation (MLE) is the best model as compare to the Bayesian approach. Then, we used auxiliary residuals demonstrate by Harvey and Koopman (1992) which is potentially to detect outliers and structural breaks and able to distinguish between them. The result show that when conducting the MLE approach there will be some points where structural breaks occur but also identified as outliers which is very confusing. In contrast, the Bayesian method is capable to detect structural breaks and is able to distinguish between outliers and structural breaks.

Key Words: Electricity Consumption, State space model, Structural Breaks, Maximum Likelihood Estimation, Bayesian Method.

1. INTRODUCTION

Structural breaks currently exist in most of the macroeconomic and financial series. Kapetanios and Tzavalis (2004), defined structural break as an unexpected incident that alter the framework of an econometric modeling. Structural breaks are considered as a non-linear form such as threshold behaviour and Markov Switching as defined by Carrasco (2002). However, these non-linearities cannot serve as a formal form of structural breaks. The presence of structural breaks usually gives a great impact especially in estimation and forecasting purposes. If the presence is ignored, then it will cause to model misspecification as well as imprecise forecast, spurious estimation results of model parameters and hence cause to misleading policy decisions and recommendations. Based on Clements & Hendry (1998), structural break is one of the major reasons of poor forecasting performance. While Stock (1994) claimed that problem of parameter instability will exist if the structural change commonly happens. Besides, Hansen (2001) stated that if one or more of the parameter changes at a particular time in the series, the structural break are expected to occur, while Hamilton (1994) claimed that problem of parameter instability will exist if the structural change commonly happen.

In addition, structural breaks have a great impact upon estimation and forecasting purposes. For example, Harrison and Stevan (1976) stated that the fixed parameter approach lies in contrast to the usual practice of operational forecasters who usually need to deal with current and future situations,
Besides being able to predict what might happen in the future and not what happened in the past. When using macroeconomic time series, Wang & Zivot (2000) said that the structural breaks are detected at the level and trend, while in economic and financial data, the structural breaks can be detected in volatility. Since the identification of structural break or structural changes is very crucial in economic time series, then it is indeed important to check for the existence of a structural break in time series data before proceed to the next procedure which is statistical analysis. Since electricity data become more important in the economic data in most of the country, many researchers used, tested and proved that these types of data do contain structural breaks. Thus, adequate information and good models are important in order to identify the future presence of structural breaks and this will be a great advantage for econometrics and economic researchers.

Numerous studies have been conducted over the years that led to the introduction of classical and Bayesian approach which are capable of detecting structural breaks. Based on Jiang (2009) when using the classical method, identification of structural breaks has been found to be unsuitable for forecasting since this method does not cater for new breaks which occur out of sample. Compared to the Bayesian approach, this approach theoretically and practically simpler as compared to the classical approach. Xu & Perron (2015) said that the Bayesian approaches employ latent variables in order to track structural breaks or shifts which is much simpler and straightforward.

Generally, the electricity sector is seen as a growth instrument. Over the past three decades, energy demand has become one of the major factors of the economic growth. In fact, many studies have been carried out to determine the relationship between energy consumption and GDP, as well as growth rate and many other variables. Moreover, several studies have displayed a connection between electricity consumption and economic growth, for example, the work of Yoo (2006), Tang (2008), and Chandran, Sharma, & Madhavan, (2010). These studies proved the existence of a causal flow between electricity consumption and economic growth. The National Energy Balance (2007) showed that for the period of 1980 – 2009, the total electricity consumption recorded a growth rate of 9.2%. There was 9.363 kWh billions of consumption in 1980, which increased in 1990 by 22.35 kWh billion, and continuously increased in 2008 by 102.657 kWh billion. Furthermore, the GDP was recorded at RM100.29 million in 1980, an increase by 6.2% per year for the 1980 – 2009 period.

The main reason for the growth of electricity demand had been the development of the transportation sector in the Klang Valley area, which was the railway system, particularly the light rail transit (LRT) and the intercity commuter train service, as well as the tremendous development of Information Communication Technology (ICT).

Therefore, this paper attempts to discover the structural break in electricity consumption data in Malaysia. Electricity consumption can be divided into four sectors, which is the question whether there exist structural breaks in two sectors residential and transport sectors are of specific interest. Since there is tremendous usage of electricity consumption in Malaysia, we shall examine the pattern, trend and the behaviour of the electricity consumption.

2. DATA AND METHODOLOGY
The data used in this study consist of quarterly basis of electricity consumption data of two sectors, which is residential and transport sectors, measured in billion kilowatts. The Malaysian Energy Commission provided the electricity consumption data represents the electricity consumption of Peninsula Malaysia. For the purpose of time series analysis of the quarterly electricity consumption data in Malaysia, first, the researcher had to ensure if the data were stationary. For this study, only four tests had been chosen; Augmented-Dickey Fuller (ADF) test, Phillip-Perron (PP) test, Kwiatkowski-Phillips-Schmidt-Shin (KPSS) test, as well as Zivot and Andrews (ZA) tests.
2.1 Augmented-Dickey Fuller test (ADF test)

The ADF test Dickey & Fuller (1979) had been based on the following model:

\[ \Delta Y_t = \alpha + \beta t + \rho Y_{t-1} + \sum_{j=1}^{t} \theta_j \Delta Y_{t-j} + \epsilon_t \quad \text{for } t = 1, 2, 3, \ldots T \] (1.1)

where \( \Delta Y_t \) is the lagged first difference added to correct for serial correlation in the error and the maximum lag was selected by using the Schwartz information criterion (SIC), \( \alpha \) is constant, \( \beta \) is the coefficient on a time trend, \( \theta \) is the parameters to be estimated, \( \epsilon_t \) is a well-behaved error term, which is distributed as normal with mean zero and variance \( \sigma^2 \). The unit root test for Equation (1.1) was then carried out under the null hypothesis tests \( \rho = 0 \) against the alternative hypothesis of \( \rho < 0 \). Once a value for the test statistics \( DF = \frac{\hat{\rho}}{SE(\hat{\rho})} \) (1.2) had been computed, it was compared to the relevant critical value for the ADF test. If the test statistics had been less than the critical value, the null hypothesis \( \rho = 0 \) would be rejected and no unit root was present.

2.2 Philips-Perron test (PP test)

The Philips & Perron (1988) method estimated the test equation as given below:

\[ \Delta Y_t = \rho Y_{t-1} + \pi Y_{t-1} + \epsilon_t \] (1.3)

where \( \Delta Y_t \) is the first difference operator, \( \epsilon_t \) is the error term of order zero and may be heteroskedastic. The PP test would be correct for any serial correlation and heteroskedasticity in the errors \( \epsilon_t \) of the test regression by directly modifying the test statistics \( t \pi = 0 \) and \( T \hat{\pi} \). These modified statistics, denoted as \( Z_t \) and \( Z_{\pi} \), are given by

\[ Z_{\pi} = \left( \frac{\hat{\sigma}^2}{\hat{\lambda}^2} \right)^{1/2} \frac{1}{\sqrt{T}} \left( \frac{\hat{\lambda}^2 - \hat{\sigma}^2}{\hat{\sigma}^2} \right) \] (1.4)

\[ Z_t = T \hat{\pi} - \frac{1}{2} \frac{T^2 SE(\hat{\pi})}{\hat{\sigma}^2} \left( \hat{\lambda}^2 - \hat{\sigma}^2 \right) \] (1.5)

The terms \( \hat{\sigma}^2 \) and \( \hat{\lambda}^2 \) are consistent estimates of the variance parameters:

\[ \hat{\sigma}^2 = \lim_{T \to \infty} T^{-1} \sum_{t=1}^{T} E[u_t^2] \] (1.6)

\[ \hat{\lambda}^2 = \lim_{T \to \infty} T^{-1} \sum_{t=1}^{T} E[T^{-1} S_T^2] \] (1.7)

where \( S_T = \sum_{t=1}^{T} u_t \). The sample variance of the least squares residual \( \hat{\mu} \) is a consistent estimate of \( \sigma^2 \) and the Newey-West long run variance estimate of \( \hat{\mu} \) using \( \hat{\mu} \) is a consistent estimate of \( \hat{\lambda}^2 \). Under the null hypothesis that \( \pi = 0 \), the PP \( Z_t \) and \( Z_{\pi} \) statistics share similar asymptotic distributions of the ADF t-statistics and normalized bias statistics.

2.3 Kwiatkowski-Phillips-Schmidt-Shin (KPSS) test

The KPSS test is given by the following equations:

\[ Y_t = \delta_t + r_t + \epsilon_t \] (1.8)

where \( \delta_t \) is a deterministic components (constant or constant plus time trend), \( \epsilon_t \) is a stationary error and \( r_t \) is a random walk given by:

\[ r_t = r_{t-1} + \epsilon_t, \quad \epsilon_t \sim N(0, \sigma^2) \] (1.9)
The null hypothesis is stated as \( H_0: \sigma^2_\varepsilon = 0 \), which implies that \( \tau_t \) is a constant, while the alternative hypothesis is \( H_1: \sigma^2_\varepsilon > 0 \). The KPSS test statistics is the Lagrange multiplier (LM) or score statistics for testing the \( H_0: \sigma^2_\varepsilon = 0 \) against \( H_1: \sigma^2_\varepsilon > 0 \) is given by:

\[
KPSS = \frac{(T-2\hat{S}_t^2)}{\hat{\lambda}^2}
\]  

where \( \hat{S}_t = \sum_{j=1}^{t} \hat{\varepsilon}_j \), \( \hat{\varepsilon}_j \) is the residual of a regression of \( Y_t \) on \( \delta_t \) and \( \hat{\lambda}^2 \) is a consistent estimate of the long run variance of \( \varepsilon_t \) using \( \hat{\varepsilon}_t \).

### 2.4 Zivot and Andrew test (ZA test)

The ZA test was carried out by using the following regression equations:

**Model A (Crash Model):**

\[
Y_t = \mu + \beta t + \theta DU_t + \alpha Y_{t-1} + \sum_{i=1}^{k} c_i \Delta Y_{t-i} + \varepsilon_t
\]  

(1.11)

**Model B (Changing Growth Model):**

\[
Y_t = \mu + \beta t + \gamma DT_t + \alpha Y_{t-1} + \sum_{i=1}^{k} c_i \Delta Y_{t-i} + \varepsilon_t
\]  

(1.12)

where \( DU_t = 1 \) if \( t > TB \), 0 otherwise; \( DT_t = t - TB \) if \( t > TB \), 0 otherwise, TB is the date of the endogenously determined break. The null hypothesis in the three models is \( \alpha = 0 \), where all the series contained a unit root with a drift that excluded any structural break, while the alternative hypothesis \( \alpha < 0 \) where all the series had a trend stationary process with a one-time break, which occurred at an unknown point in time.

### 2.5 State space Model (SSM)

The state space representation of the dynamics of \( y_t \) is given in the following systems of equations:

\[
y_t = AX_t + H\mu_t + \varepsilon_t
\]  

(1.14)

\[
\mu = F\mu_{t-1} + \nu_t
\]  

(1.15)

The \((n \times 1)\) vector \( \varepsilon_t \) and the \((k \times 1)\) vector \( \nu_t \) are white noise:

\[
E \varepsilon_t \varepsilon'_t = R, \quad \text{for } t = \tau \text{ and } 0 \text{ otherwise}
\]  

(1.16)

\[
E \nu_t \nu'_t = Q, \quad \text{for } t = \tau \text{ and } 0 \text{ otherwise}
\]  

(1.17)

The disturbances are assumed to be uncorrelated at all lags:

\[
E \varepsilon_t \nu'_t = 0, \text{ at all } t \text{ and } \tau
\]  

(1.18)

where \( \mu_t \) is \( k \times 1 \) vector of unobserved state variables, \( H \) is an \( n \times k \) matrix that links the observed vector \( y_t \) to the unobserved \( \mu_t \), \( X_t \) is an \( r \times 1 \) vector of exogenous or observed variables, \( R \) and \( Q \) are \( n \times n \) and \( k \times k \) matrices respectively.

### 2.6 Parameter Estimation for SSM using MLE

A basic model for representing a time series in state space model is the additive model

\[
Y_t = \mu_t + \gamma_t + \varepsilon_t \quad t = 1, \ldots, n
\]  

(1.19)

This model also known as the classical decomposition where; \( Y_t \) is the observation, \( \mu_t \) is the slowly changing component (trend), \( \gamma_t \) is the periodic component (seasonal) and \( \varepsilon_t \) irregular component (disturbance or error). Let \( y_1, y_2, y_3, \ldots, y_n \) be the electric consumption at time \( t =
The likelihood of the data is the probability of obtaining that particular set of data, given the chosen probability distribution model. This expression contains the unknown model parameters. For a state space model, it is convenient to write the joint density of the observations in the form of
\[ p(y_1, \ldots, y_n; \theta) = \prod_{t=1}^{n} p(y_t | D_{t-1}; \theta), \]
where \( p(y_t | D_{t-1}; \theta) \) is the conditional density of \( y_t \) given the data up to time \( t-1 \) assuming that \( \theta \) is the value of the unknown parameter.

### 2.7 Parameter Estimation for SSM using Bayesian Approach

The Bayesian inference was employed to estimate the model. This technique, though simple, is robust in its approach to the estimation of nonlinear state space model. Besides, the Bayesian approach offers a more consistent formulation of the problem. Let \( \theta \) be the parameter to be estimated and \( Y \) is the data. Using the Bayes’ Rule,
\[ P(\theta|Y) = \frac{P(Y|\theta)P(\theta)}{P(Y)} \]
where \( P(\theta|Y) \) is the posterior distribution. This will be used in making the inference about the parameters \( \theta = \{\beta, \sigma^2\} \). \( P(Y|\theta) \) is the likelihood which contains all information about \( \theta \). \( P(\theta) \) is the prior distribution for \( \theta \) which contains the information that we know about \( \theta \) before we observe the data. \( P(Y) \) is the normalizing constant of the function \( P(Y|\theta)P(\theta) \) where \( P(Y|\theta) \) is a proper probability distribution. When knowing that the normalizing constant \( P(Y) \) is not necessary for Bayesian inference, when removing the normalizing constant, it will become:
\[ P(\theta|Y) \propto P(D|\theta)P(\theta) \iff \text{posterior} \propto \text{likelihood} \times \text{prior} \]

### 3.0 RESULT AND CONCLUSION

#### 3.1 Stationarity Test Results

The results are provided in Table 1 and Table 2. At the initial stage of the analysis, four unit root tests were performed on the series of each of the data series involved. The test was Augmented Dickey Fuller Unit Root Test (ADF), Phillip & Perron Unit Root Test (PP), Kwiatkowski et al. Unit Root test (KPSS test) and Zivot and Andrew test (ZA). Zivot and Andrews test (ZA) is a sequential test which utilizes the full sample and uses a different dummy variable for each possible break date. The break date is selected where the \( t \)-statistic from the ADF test of unit root is at a minimum (most negative). Consequently, a break date will be chosen where the evidence is least favourable for the unit root null. The critical values in Zivot and Andrews (1992) are different to the critical values in Perron (1989). The difference is due to that the selecting of the time of the break is treated as the outcome of an estimation procedure, rather than predetermined exogenously.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Augmented Dickey Fuller Test</th>
<th>Hypothesis</th>
<th>Phillip Perron Test</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>D-Fuller=-2.7754, Lag order = 3, p-value = 0.2619 alpha: 0.05 Decision: Do not reject ( H_0 )</td>
<td>( H_0 ): There is a unit root for the series ( H_1 ): There is no unit root for the series. The</td>
<td>Z(alpha) = -40.7384, lag parameter = 3, p-value = 0.01 alpha: 0.05 Decision: Reject ( H_0 )</td>
<td>( H_0 ): There is a unit root for the series ( H_1 ): There is no unit root for the series. The</td>
</tr>
<tr>
<td>Sectors</td>
<td>Kwiatkowski Phillips Schmidt Shin Test</td>
<td>Hypothesis</td>
<td>Zivot and Andrew Test</td>
<td>Hypothesis</td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------------</td>
<td>------------</td>
<td>-----------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Residential</td>
<td>KPSS Level = 2.8287, lag parameter = 1, p-value= 0.01, alpha: 0.05 Decision: Do not reject $H_0$</td>
<td>$H_0$: The series is stationary. $H_1$: The series is not stationary. Since the p-value is smaller than the alpha $\alpha = 0.05$, we reject the null hypothesis. Therefore, we can conclude that the series is not stationary.</td>
<td>Test Statistics $= -7.9$ Critical values: $0.01=-5.57$, $0.05=-5.08$, $0.1 = -4.82$ Decision: Reject $H_0$ Potential break point: Point 9 (Q1 2001)</td>
<td>$H_0$: A unit root process with drift that excludes exogenous structural change. Based on the tests, there is a unit root for the series</td>
</tr>
<tr>
<td>Transport</td>
<td>KPSS Level = 2.2467, lag parameter = 1, p-value= 0.01, alpha: 0.05 Decision: Do not reject $H_0$</td>
<td>$H_0$: The series is stationary. Therefore, we can conclude that there is a unit root for the series.</td>
<td>Test Statistics $= -9.23$ Critical values: $0.01=-5.57$, $0.05=-5.08$, $0.1 = -4.82$ Decision: Reject $H_0$ Potential break point: Point 36 (Q4 2007)</td>
<td>$H_0$: A trend stationary process that allows for one time break in the level, trend or both.</td>
</tr>
</tbody>
</table>

Table 2: Unit Root Test Results for Checking Stationarity of Electricity Consumption Data from Each Sector (continue)
Based on Figure 1 to Figure 2 displays the actual and log electricity consumption plot for all sectors. Here the log transformation was used. The actual and the log data were plotted in the same graph for each sector. Except for the transport sector, a linear trend is observed from the Malaysia electricity consumption data from each sector.

3.2 **Fitted State Space Model based on MLE**

3.2.1 **Filtering Results**

Based on Figure 3 to 4, we can see the plot of the trend and seasonal decomposition for each sector. This smoothing estimates are computed based on the fitted model. These results are then used to decompose the data series into a smooth trend plus a stochastic seasonal component subject to measurement error. For residential sector show a steady rise which is in contrast to the transport sector where there is a slow growth in the trend pattern. Seasonal pattern is observed in all sectors investigated where the series fluctuates around the same quarterly period with the same regulatory pattern.
3.2.2 Smoothing Results

In Figure 5 to Figure 6 shows the smoothed and filtered level which computes means and variances of the smoothing distributions. The smoothed values is in red color and the Kalman-filtered values is in blue color.

![Figure 5: Filtered and smoothed estimates for Electricity Consumption in Residential Sector](image1)
![Figure 6: Filtered and smoothed estimates for Electricity Consumption in Transport Sector](image2)

![Figure 7: Forecast from Basic Structural Model for Residential Sector](image3)
![Figure 8: Forecast from Basic Structural Model for Transport Sector](image4)

In Figure 7 to Figure 8 show the results of forecast from basic structural model for each sectors. Based on the graph it’s clearly display the forecasted value from 2013 to 2015 for each quarter. The data appears to be following some economic trends. The movement of the data is more towards upward trend even though there is a slightly downward movement for all sectors except transport sector. For transport sector, is static from 1999 to 2003, shows a major increment in quarter 3. Then it continues to be static again until 2005 and follow the same pattern. In 2008, the movement show major increases but it had a turning point in 2009 for quarter 3. After that, the trend continues to increase until 2014.

3.2.3 Identification of Outliers and Structural Break based on MLE

In Table 3 to Table 4, show the outliers and structural break points based on residuals and standardized residuals for residential sector. The outliers detected based on the absolute value 2 (positive and negative two) in the residuals while for detecting structural breaks will be based
on the standardized residuals. If the graph plotted on more than 2, then it will be said as outliers or structural breaks. For residential sector, we can identify four outliers and four structural breaks which is on quarter 1 year 2000 at point five, quarter four year 2006 at point thirty-two, quarter three year 2009 at point forty-three and quarter 1 year 2011 at point forty-nine.

**Table 3**: Outliers and Structural Break Points based on Residuals and Standardized Residuals for Residential and Transport Sectors (MLE approach)

<table>
<thead>
<tr>
<th>Potential Break Points</th>
<th>Residuals</th>
<th>Standardized Residuals</th>
<th>Residuals</th>
<th>Standardized Residuals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential Sectors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residuals</td>
<td>Q1 2000</td>
<td>Q1 2000 (point 5)</td>
<td>Q3 2003</td>
<td>Q1 2000 (5)</td>
</tr>
<tr>
<td>Standardized Residuals</td>
<td>Q4 2006</td>
<td>Q4 2006 (point 32)</td>
<td>Q4 2005</td>
<td>Q4 2005 (32)</td>
</tr>
<tr>
<td></td>
<td>Q3 2009</td>
<td>Q3 2009 (point 43)</td>
<td>Q1 2008</td>
<td>Q1 2008 (43)</td>
</tr>
<tr>
<td></td>
<td>Q1 2011</td>
<td>Q1 2011 (point 49)</td>
<td>Q4 2009</td>
<td></td>
</tr>
<tr>
<td><strong>Transport Sectors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residuals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standardized Residuals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 9**: Outlier and Structural Breaks plot for Residential Sector

**Figure 10**: Outlier and Structural Breaks plot for Transport Sector
3.3 Fitted SSM based on Bayesian Approach

3.3.1 Trace plots

Figure 11: Posterior distribution of the state vector for Residential Sector

Figure 12: Posterior distribution of the state vector for Transport Sector

Figure 13: Trace plots (top) and running ergodic means (bottom) for Residential Sector

Figure 14: Trace plots (top) and running ergodic means (bottom) for Transport Sector

Based on Figure 11 there is a movement in the data of the residential sector. The movement is slightly up and down but mostly seen the trend is moving upward. For transport sector, the data seems to be constant in certain year before the level increase to the next level.

3.3.2 Bayesian Estimates with Monte Carlo Standard Errors

Table 4: Posterior estimates of the three unknown variance from the Gibbs sampler output and Monte Carlo standard errors (in parenthesis) according to sectors.

<table>
<thead>
<tr>
<th>Sectors</th>
<th>( \sigma^2 )</th>
<th>( \sigma^2_{\beta} )</th>
<th>( \sigma^2_s )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>3.79e-04 (1.06e-05)</td>
<td>1.99e-04 (6.97e-06)</td>
<td>2.36e-04 (8.35e-06)</td>
</tr>
<tr>
<td>Transport</td>
<td>3.83e04 (1.85e-05)</td>
<td>2.18e-04 (9.26e-06)</td>
<td>2.38e-04 (1.12e-05)</td>
</tr>
</tbody>
</table>
Table 5 displays the posterior estimates of the three unknown variances according to sectors using Sokal’s method. In the same table (in bracket) display the output summary for Monte Carlo estimate of standard deviations together with the estimated Monte Carlo standard errors.

3.3.3 Plots of Outliers and Structural Break based on Bayesian Approach

We used the same method introduced by Harvey and Koopman (1992) in identifying the outliers and structural breaks by examining the auxiliary residuals in state space models. Using this method is very useful not only managed to detect outliers and structural breaks but it is also capable to distinguish them. The auxiliary residuals are estimators of the disturbances associated with the unobserved components. In order to detect the structural breaks, the procedure used is by plotting the standardized residuals. In Gaussian model, indicators of outliers and structural breaks arise for values greater than 2 in absolute value. Therefore, if the value of the standardized residuals are greater than 2, then there is a structural break on those points. We apply this procedure to the state equation residuals and to the standardized observation equation residuals in order to detect outliers and structural breaks.

Table 5: Outliers and Structural Breaks based on Residuals and Standardized Residuals for Residential and Transport Sector (Bayesian approach)

<table>
<thead>
<tr>
<th>Potential Break Point</th>
<th>Residential Sectors</th>
<th>Transport Sectors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Residuals</td>
<td>Standardized Residuals</td>
</tr>
<tr>
<td>None</td>
<td>None</td>
<td>Q2 2010 (point 46) Q1 2011 (point 49)</td>
</tr>
</tbody>
</table>

Figure 15: Outlier and Structural Breaks plot for Residential sector

Figure 16: Outlier and Structural Breaks plot for Transport Sector
4. DISCUSSION

The Malaysia electricity consumption data for each major sector was modelled using the state space model with the Maximum Likelihood Estimation (MLE) approach and the Bayesian approach. We used the Maximum Likelihood Estimation approach and Bayesian approach in order to compare the best and fits the SSM model furthermore allows for potential structural break of an unknown date in any of its parameters. The Bayesian approach that we have followed in this study employs analytic and Monte Carlo integration technique for calculating the marginal likelihoods of the models which are necessary for calculating the posterior model probabilities. The model validation results have shown that our approach can adequately distinguish stationarity from unit roots for moderately large sample sizes. Looking at the results showed that the Bayesian approach given the consistent and reliable findings compared to Maximum Likelihood Estimation approach.

References


ABSTRACT
The competition among Service Provider in Malaysia contributes to the continuous pressure to the IT industry. From organization perspective, choosing to outsource an IT function is a huge commitment which relate to serious financial implications to businesses. This quantitative research study sought to identify the determinants of service quality among service providers which will influence the customer satisfaction for outsourced IT services. Based on a survey, a new conceptual framework of customer satisfaction was developed with 6 determinants that based on the SERVQUAL and other past scholarly research which are: Assurance, Responsiveness, Reliability, Tangible, Empathy and Service Attitudes. The study was based on a sample of 178 respondents from a selected organisation. The six service quality variables and dependent variable which is customer satisfaction were all measured using five point Likert scale in a survey questionnaire. From the findings, there were positive significant relationship between all the six service providers’ quality towards the customer satisfaction. The findings from this research has discovered with the previous research findings were strengthened by the results of this research. Future researchers could concentrate on determining the service providers’ quality that influence customer satisfaction.

Key Words: Information technology; service quality; outsourcing

1. INTRODUCTION
The developments in information technologies, globalization and increase competition in information technology outsourcing (ITO) has become a pressing need for many organizations as well as the demand on benefit and quality of service from service providers especially in Malaysia. The decision of choosing, selecting, awarding and continuation of a contract to service provider in Malaysia was mostly based on customer satisfaction which is the fulfilment of customer experiences and expectation. This is influence by the qualities of services performed by the service provider. Kotler and Keller (2006) observed that customer satisfaction determines the success or failure of a business and customers are very sensitive to the quality of service that they receive from the service providers (Kotler and Keller 2006). A study of the service provider quality that influence customer satisfaction for the success of IT outsourcing was therefore indicated.

2. PROBLEM STATEMENT
Information Technology Outsourcing (ITO) is a practice of using external service providers to deliver effective Information Technology enable business process, application service and infrastructure solution (Gartner 2013). Besides, ITO also known as contracting IT related job to service provider system maintenance.

From an organization perspectives, choosing to outsource an IT function is a huge commitment especially for Banking and Healthcare related business. This will determine the qualified service provider which can deliver a quality of services which lead to customer satisfaction. Reichheld
(1996) says that once a customer is dissatisfied with the services provided, may opt to turn away and never to return and most likely spread their bad experience to prospective customer thus discouraging them from dealing with the same service provider (Reichheld 1996).

In IT outsourcing sector, focusing on customer satisfaction is important in order to maintain contract continuation and long term relationship as well as successful business performance. The increasing number of service provider in Malaysia market has led to more choices for organization to select suitable service provider.

As for this, competition among service provider in Malaysia grows which contributes to the continuous pressure to the IT outsourcing sector. The competition creates a measures of service quality that service provider can offer to organization as well as to survive and stay strong in fast moving industry. According to Grönroos (2000), customers have different perspectives of judging service quality and thus Service provider in IT outsourcing sector should focus their energies mainly on areas defined by customers as specific needs and wants (Grönroos 2000).

For service provider to be competitive in the market, they should be anticipate and respond to the changing interest and demands of different customers (Wanjuku 2014). Besides, customer expectation of a particular service is determined by factors such as recommendations, personal needs and past experiences (Wanjuku 2014).

Apart from that, service provider is lacking with the understanding level of the service quality and information on the determinants of customer satisfaction in terms of defining, concepts and continuous performance improvement of IT services in outsourcing. This study sought a relationship between the service provider’s quality factors and customer satisfaction. This may guide service providers in understanding and managing customer satisfaction more effectively and to train their personnel to achieve optimal value addition from outsourcing strategies (Sunder 2009).

From the discussion above, managing customer satisfaction is an important task for service provider to be a competitive player in the market. By meeting customer satisfaction, service provider able to improve customer loyalty and attract new customers as satisfying customer is an expensive investment.

3. RESEARCH OBJECTIVE

The research objective of this study is to identify the determinants of the Service Provider’s Quality that influence customer satisfaction. It helps Malaysian service provider to stay competitive by understanding customers’ demand and needs, hence reaching or exceeding client satisfaction and expectation.

4. LITERATURE REVIEW

In Malaysia, IT outsourcing is one of the major contributors for the Information Technology Industry which outsourcing accounts alone contribute roughly 60 percent of Malaysia IT service market (Kearney 2015). Today’s the demand and expectation from customer is enormous and persistently changing the business environment. High service quality and effective customer engagement are certainly crucial for organisations to leverage their competitive advantage (Ab Hamid, N. R., and Cheng, A.Y. 2012). As for that, Malaysia can be more attractive destination if service provider can provide an excellent level of Service Quality. This will result from customer satisfaction measures which highly associates with service quality as customer’s view is the definition of service quality rather than internal performance measures (Parasuraman, Zeithaml and Berry 1996).
Customer Satisfaction

Customer Satisfaction is defined as the judgement made when receiving a particular service based on the services marketing literature (Bolton and Drew 1991; Cronin and Taylor 1992). University of Minnesota defined customer satisfaction as ‘the feeling that a person experiences when an offering meets his or her expectations’ where by customer is satisfied when offering made meets the customer’s expectations (U. o. Minnesota 2015). Apart from that, customer satisfaction has been defined as the degree of fulfilment of some need, desire, goal or other pleasurable end state that results from a specific exchange transaction between the consumer and a firm (Rust and Oliver 1997).

A slight different definition by Zeithmal and Bitner (2003) which is “ Satisfaction is the consumer fulfilment response. It is a judgment that a product or service feature, or the product or service itself, provides a pleasurable level of consumption-related fulfilment” (Zeithaml and Bitner 2003).

According to Munusamy et al. (2010), customer satisfaction is a business term that describes the measurement of goods or services provided by the company to ensure that their customers’ expectation is achieved (Munusamy, Chelliah and Hor 2010). However, customers’ satisfaction is very subjective because until this day, there still no researchers who are able to set the demand as well as the requirements of a service desired by the customers due to its intangibility and different experience of each users (Baki, et al. 2009).

In today’s economy, leaders of industry, managers and researcher have to deconstruct these phrases to guide businesses to be effective and efficient in achieving customer retention in the end (Sunder 2009). As for IT outsourcing sector, the fast moving technology had force to examine the definitions of customer satisfaction in academic research to help arrive at a working definition for the current study.

Service Quality

Service quality is about the consumers’ overall impression of the relative inferiority or superiority of the organization and its services (Bitner 1992). Service quality is the evaluation of overall excellence of services; it is the perception of customer, it is the whole judgment or attitude related to the superiority of the service, unlike satisfaction that is only related to specific transaction (Parasuraman, Zeithaml and Berry 1988).

Apart from that, service quality also defined by Bitner and Hubbert (1994) stated that overall impression of customer towards an organization’s relative inferiority or superiority and the services provided by the organization (Bitner and Hubbert, 1994). This statement indicate that service quality is judged by the organization’s image and performance. Hence, there is an effect to customer satisfaction in regards of the service quality of the organisation.

There are a few opinions stated that service quality can be interpreted from the different of customer expectation towards experienced services and customer perception towards received services (Munusamy, Chelliah and Hor 2010). Parasuraman et al. (1998) stated that service quality as the gap between expectation and perception of services quality and conducted new concept of service quality which is SERVQUAL. SERVQUAL is a tool to measure the satisfaction of customer and this model is considered the most cited and adopted models for measuring service quality.

Relationship between service quality and customers’ satisfaction

Customer satisfaction seem to be highly associate with service quality and as well as organizational performance. According to Parasuraman et al. (1998), Service Quality defined as a form of attitude, which could be related to satisfaction but not equivalent to it that results from a comparison of expectations with perceptions of performance (Parasuraman, Zeithaml and Berry 1988). Apart from that, many suggested that service quality focusing on meeting customer needs and requirements.
The theory from studies done by Munusamy et al. (2010) stated that, customers’ satisfaction and service quality are closely related which the higher quality of service, the higher the customers’ satisfaction (Munusamy, Chelliah and Hor 2010). Besides, customer perception of service quality is the major causes of customer satisfaction (Cronin, Brady and Hult 2000).

The level of customer satisfaction increases when service provider success in accomplishing their expectation (Hellier, et al. 2003). As for that, a high standard of service quality will lead to long term profitability since it influenced the repurchase intention of customers (Leverin and Liljander 2006). Besides, the increase of customer satisfaction contributes to the increases of business and revenue (Butt, et al. 2015). As for that, Fečíková (2004) stated that the customer satisfaction towards the quality of certain services will determine the company’s failure or success (Fečíková 2004).

5. RESEARCH METHODOLOGY

This study employed a quantitative approach for the chosen methodology which applying structure survey questionnaire. According to Brigham (2010), quantitative research system is a tool that uses to analysis the issue from the research. Besides that, Ting and Ping (2009) have stated that develop a quantitative research data can help us to identify the interaction between dependent variable and independent variables. As such, this research study focusing on Service Provider Quality as an influencer that leads to customer satisfaction in the IT Outsourcing success.

This study will report quantitative finding analysis by using structure questionnaires which will be using SPSS software for data analysis. This quantitative research method will determine the relationship between dependent and independent variables, to study the interaction among those variables, and to find out cause-and-effect connection between those variables. There are several empirical approaches that were used such as direct observation of service and examining published quantitative data that will enrich the writing of this paper.

Data collection used to gather information. In research, there are different methods, which categorized into primary data and secondary data. For this study, primary data and secondary data are used to gather data for the purpose to complete the research project.

Primary data is first-hand data or the information collected by researcher via direct observation (Pannerselvam, 2000). For this study, the responses and opinion of respondents toward the service providers’ quality, primary data research is the best way to collect the information. According to Forshaw (2000), the collection for primary data involve the activity of observation method, surveys, interviews and experiments instead of other sources which are available for public access.

The tools to collect information from sample respondents for the use of data analysis is questionnaires. Questionnaire provides a reliable information for the research. (Synodinos (2003) stated that survey used information gather from sample respondent to generalize parent population.

The questionnaires are randomly distributed to 200 targeted respondents in a chosen organization that engaged with IT service providers. The questionnaire was administered by using face to face and the drop and pick techniques. To complete this paper, each respondents is required to spend between 5 to 10 minutes to complete the paper and pencil questionnaire. According to Doryei and Taguchi 2010 a questionnaire is a data collection instrument that best collects data from a large group of people at a reduced cost and within the time convenience of the respondents.

As for secondary data, it is only used to validate information arising from primary data. This data was from previous literature, researches and studies in the related area.
6. RESULT AND DISCUSSION

There were 178 respondents’ ranges from 18 years to 65 years old holding various positions among the clients of different IT Outsourcers providers have participated in the data collection through questionnaires. The results are tabulated as hypotheses thereafter.

Hypothesis 1

\[ H_0: \text{Quality of Assurance has no effect on customer satisfaction towards IT outsourcing} \]
\[ H_1: \text{Quality of Assurance has effect on customer satisfaction towards IT outsourcing} \]

Decision making: Reject \( H_0 \) if \( p < 0.01 \) or \( 0.05 \)

<table>
<thead>
<tr>
<th>Table 6.1: Customer Satisfaction and Assurance correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV_Customer_Satisfaction</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>178</td>
</tr>
</tbody>
</table>

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

Based on the Table 6.1, the \( p \)-value is 0.000 which is less than alpha 0.01. Hence the null hypothesis (\( H_0 \)) is rejected. This indicate that the quality of Assurance has an effect on customer satisfaction toward IT outsourcing.

Hypothesis 2

\[ H_0: \text{Quality of Responsiveness has no effect on customer satisfaction towards IT outsourcing} \]
\[ H_1: \text{Quality of Responsiveness has effect on customer satisfaction towards IT outsourcing} \]

Decision making: Reject \( H_0 \) if \( p < 0.01 \) or \( 0.05 \)

<table>
<thead>
<tr>
<th>Table 6.2: Customer Satisfaction and Responsiveness correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV_Customer_Satisfaction</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>178</td>
</tr>
</tbody>
</table>

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

Based on the Table 6.2, the \( p \)-value is 0.000 which is less than alpha 0.01. Hence the null hypothesis (\( H_0 \)) is rejected. This indicate that the quality of Responsiveness has an effect on customer satisfaction toward IT outsourcing.

Hypothesis 3

\[ H_0: \text{Quality of Reliability has no effect on customer satisfaction towards IT outsourcing} \]
\[ H_1: \text{Quality of Reliability has effect on customer satisfaction towards IT outsourcing} \]

Decision making: Reject \( H_0 \) if \( p < 0.01 \) or \( 0.05 \)

<table>
<thead>
<tr>
<th>Table 6.3: Customer Satisfaction and Reliability correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV_Customer_Satisfaction</td>
</tr>
<tr>
<td>N</td>
</tr>
</tbody>
</table>

48
Based on the Table 6.3, the p–value is 0.000 which is less than alpha 0.01. Hence the null hypothesis (H₀) is rejected. This indicate that the quality of Reliability has an effect on customer satisfaction toward IT outsourcing.

**Hypothesis 4**

H₀: Quality of Tangible has no effect on customer satisfaction towards IT outsourcing  
H₁: Quality of Tangible has effect on customer satisfaction towards IT outsourcing

*Decision making: Reject H₀ if p < 0.01 or 0.05*

Table 6.4: Customer Satisfaction and Tangibles correlation

<table>
<thead>
<tr>
<th>DV_Customer_Satisfaction</th>
<th>Pearson Correlation Sig. (2-tailed)</th>
<th>IV_Tangibles</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV_Customer_Satisfaction</td>
<td>Sig. (2-tailed)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>178</td>
</tr>
<tr>
<td></td>
<td><strong>. Correlation is significant at the 0.01 level (2-tailed).</strong></td>
<td>.424**</td>
</tr>
</tbody>
</table>

Based on the table 6.4, the p–value is 0.000 which is less than alpha 0.01. Hence the null hypothesis (H₀) is rejected. This indicate that the quality of Tangibles has an effect on customer satisfaction toward IT outsourcing.

**Hypothesis 5**

H₀: Quality of Empathy has no effect on customer satisfaction towards IT outsourcing  
H₁: Quality of Empathy has effect on customer satisfaction towards IT outsourcing

*Decision making: Reject H₀ if p < 0.01 or 0.05*

Table 6.5: Customer Satisfaction and Empathy correlation

<table>
<thead>
<tr>
<th>DV_Customer_Satisfaction</th>
<th>Pearson Correlation Sig. (2-tailed)</th>
<th>IV_Empathy</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV_Customer_Satisfaction</td>
<td>Sig. (2-tailed)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>178</td>
</tr>
<tr>
<td></td>
<td><strong>. Correlation is significant at the 0.01 level (2-tailed).</strong></td>
<td>.418**</td>
</tr>
</tbody>
</table>

Based on the Table 6.5, the p–value is 0.000 which is less than alpha 0.01. Hence the null hypothesis (H₀) is rejected. This indicate that the quality of Empathy has an effect on customer satisfaction toward IT outsourcing.

**Hypothesis 6**

H₀: Quality of Service Attitude has no effect on customer satisfaction towards IT outsourcing  
H₁: Quality of Service Attitude has effect on customer satisfaction towards IT outsourcing

*Decision making: Reject H₀ if p < 0.01 or 0.05*

Table 6.6: Customer Satisfaction and Empathy correlation
Based on Table 6.6, the p–value is 0.000 which is less than alpha 0.01. Hence the null hypothesis (H₀) is rejected. This indicate that the quality of Empathy has an effect on customer satisfaction toward IT outsourcing.

7. CONCLUSION

There are many factors that can affect customers’ satisfaction, but we adopted SERVQUAL five factors which are tangible, assurance, empathy, responsiveness and reliability that adopted from Parasuraman et al (1988) and another 1 service quality factor which is Service Attitude that compatible with this research study (Sunder 2009). The entire six factors are the independent variables for this research. With the result presented, it concluded that the six independent variables influenced the high level of customer satisfaction.

Assurance, responsiveness, reliability, tangible and service attitude are all positively related to customer satisfaction. With Responsiveness have a highest correlation score which is 0.674; followed by Assurance, 0.635; Reliability, 0.24; Tangible, 0.424 and Empathy with score of 0.418. As for Service Attitude show a very weak correlation of 0.190. All the six independent variables are significantly positive correlation. The result of the second objective is achieved.

This study has also revealed that the significant of each service quality dimension: Assurance, Responsiveness, Reliability, Tangible, Empathy and Service Attitude have an effect towards customer satisfaction for successful IT outsourcing. This six service provider’s quality is the influencer on how service providers perform a day to day business which contributes to the customer satisfaction. It helps in decision making, management and policy as well as managing behavioural of employees for the success of IT outsourcing in Malaysia.

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An Assessment on the Effectiveness of Payment Collection in the Construction Industry: The Malaysian Perspective

Low Yew Loi¹, Aw Yoke Cheng² and Wan Nursafiah Binti Wan Ibrahim³

¹ Wawasan Open University, lyl2_bu@student.wou.edu.my
² iCOOP College, ycaw@icoop.edu.my
³ iCOOP College, safiah@icoop.edu.my

ABSTRACT

The construction industry has a poor payment practice of ‘work first, gets paid later’, and the payment terms are usually based on credit rather than payment upon delivery which means the contractors need to have a bigger capital outlay to undertake a construction work before progress payment is made. Thus, on-time payment has been said to be a lifeblood for a contractor during performing a construction project. There is regretted that it is common to find the late and non-payment issues in construction industry in Malaysia. The objective of this study is to identify the underlying causes, effects of late, and non-payment issues faced by the contractors and to suggest the effective solutions to mitigate the payment default in the industry. The methodology adopted was through literature review and questionnaire surveys. The target respondents in this study were Quantity Surveyors registered under Board of Quantity Surveyors Malaysia (BQSM) in Klang Valley. The data obtained was analysed using inferential statistical techniques including comparing means, correlation and factor analysis. The findings from the study revealed that the top main causes of payment issues were local culture/attitude, short of current year project and poor financial management by paymaster. The most serious effects of payment problem were created cash flow problem, created negative chain effect on other parties and create a financial hardship. The most prevalent solutions to mitigate the payment problem were to understand and research the owner's ability to pay implementation of Construction Industry Payment and Adjudication Act (CIPAA) and provide the contractor right to suspend work.

Key Words: Construction Industry; Payment; Collection
1. INTRODUCTION

The construction industry consider is one of the drivers of economic growth for Malaysia. The industry establishes infrastructure works and various housing projects required for social economic development that contributes to the overall economic growth.

The Malaysian construction sector had made up an important part of the nation’s economy. Although relatively small, but it is extensively linked with many other parts of the economy, in particular with related industries such as those for basic metal products and electrical machinery. According to Department of Statistics Malaysia (2018), construction sector for the fourth quarter, 2017 recorded the value of construction work done of RM35.1 billion with the growth rate at 7.7%. Consequently, construction sector had contributed 4.3% of the gross domestic product (GDP) in Malaysian’s economy.

The construction sector with its strong linkages had further boosted. The demand for construction services is expected to grow with on-going and new coming up gigantic infrastructure projects and private developments such as Mass Rapid Transit (MRT) urban transport project with estimate RM50 billion, East Coast Rail Link (ECRL) approximate RM55 billion, and RM8 billion construction cost for SUKE and DASH Highways and there are many more catching up private property development projects in the city centre of Kuala Lumpur, such as RM5 billion Warisan Merdeka Tower, Bukit Bintang City Centre (BBCC) estimate with a gross domestic value of RM8.7.

Nevertheless, there are regrets that the Malaysian construction industry, like other construction industries in developing nation, has had a long history of lengthy payment times, which has caused many contractors and sub-contractors to suffer from cash-flow problems and thus delaying projects. The critical of late and non-payment issue will strictly concern the flow of the construction in terms of time aspect and financial aspect particularly.

Payment has been said to be a lifeblood of the construction industry. But it seems common to find that the problems of contractors and sub-contractors on the shortcomings of the payment regime in the Malaysian construction industry. The late and non-payment issue in the local construction industry has led to the negative impact of the entire construction delivery chain. Despite the improvement of the law and the court delivery system, the contractors still faced problems in getting a swift resolution of disputes relating to payment. Arbitration or litigation is usually the last option when parties are unable to resolve the dispute and are ready to terminate the contract. However, in a typical construction project in Malaysia, the payment disputes still commonly arise in the course of the works.

2. PROBLEM STATEMENT

Effective payment mechanism is permanent for the sustainability for organisations and a nation (Cheng, A.Y., Ab Hamid, N. R., and Cheng. E.H., 2011). Construction projects by nature can be difficult to manage. They involve many stakeholders, hundreds of details and lots of documentation. If any detail is missed, it could delay the project and end up cost the contractors suffer the loss of time and money or even result in legal action. That’s why staying organized throughout the process is essential to the success of the project. Getting paid can be hard for any business but on-time payment in the construction industry is especially much difficult. Indeed, a contractor needs to submit the cheapest tender in order to secure a construction contract with the concern on compliance of all the terms and condition stipulated in the contract in order to embark a construction project.
Furthermore, the contractor needs to be very optimistic about all his assumptions to get the cheapest rates; He needs to assume that he can overcome all the unforeseen difficulties during construction; Also, the contractor must assume that he can source all the labours and materials resources as requires; He also must assume that God will surely bless him with good weather so that he can perform his construction works smoothly. But not the least, the most critical assumption he made is he must not encounter any cash flow problem and he expected always get their progress payments on-time in order to repay their creditors, to avoid any delay in supply of materials and prevent workers go on strike due to drag on of wages. Invariably, payment is one of the famous issues that always occurred in the construction industry.

On-time payment is a life-blood for a contractor during the construction period. However, there remain continuing issues of delayed and non-payment at construction industry in Malaysia affecting the entire delivery chain (Noushad, 2005). The consequence, the payment default problem had affects whole construction delivery chain. Undoubtedly, a contractor only can survive despite that those services and works had properly been paid.

Presently, there are many standard forms of contracts such as PAM Contracts 2006, IEM Form of Contracts, CIDB Form of Contracts 2000 and etc which have contained express provisions for suspense works or determination of employment if there is payment default. However, there are many inadequacies and shortfall and the common mechanisms of payment dispute resolution in Malaysia are by way of arbitration and litigation. These mechanisms have involved the judicial system and a complex body of rules as to procedure. Litigation is affordable but it is time-consuming, and arbitration is faster but expensive. There are frequently made as to its many inadequacies and shortfalls. The Construction Industry Payment and Adjudication Act (CIPAA) was proclaimed as a newly implemented payment resolution that enables speedy to resolve payment problems in the construction industry. Nevertheless, as a matter of practice and consideration of the business relationship, many unpaid contractors are refused to go on the route of formal resolution action. These are the dilemmas of the unpaid contractor as its shortage of financial ability to complete the contract and further facing insolvency due to cash flow failure.

3. RESEARCH OBJECTIVE

The research objective of this study is to identify the root cause in the relation to payment issues encountered by contractors in the construction industry.

4. LITERATURE REVIEW

Late and non-payment issue is a major concern in construction industry especially for a contractor in performing a construction contract. Everyone in the construction industry pays all appropriate amount due in a timely manner (Ameer Ali, 2005). Prompt payment is a life-blood for a contractor during the construction period. It will cause severe cash flow problems to the contractor due to the late and non-payment. It regrets that the Malaysian construction industry seems common to find the problems among contractors on the shortcomings of the payment regime. According to Din and Ismail (2014), payment issues had affected the entire delivery chain of the construction industry. No doubt, the payment issues have led to the negative impact on the whole construction industry.

Factors Causing Payment Default

There are many factors contribute to the difficulty of getting paid and paid on time especially in the construction industry. Such as scope of work issues, defective works,
conflict, inspection problems, variation order dispute, cash flow shortage, pay when paid or pay if paid clauses in contracts. Payment terms in the industry were usually on credit rather than payment on delivery, and some of the highest failure rates of and market all played a part.

i. Local Culture / Attitude

Based on the research done by Azhari, Natasha, Hamid, and Bing (2014) which had published in Jurnal Teknologi UTM, the findings have shown that the main significant cause of payment default in Malaysian construction industry is due to local culture/attitude. The construction industry has an unpleasant practice of ‘work first, gets paid later’, which contributes another dimension to the payment problem (Pettigrew, 2005).

Furthermore, payment always not pay on-time by the employer even though the period of honoring payment certificate had due. Probably, it may because of local employers have the typical character of pay “Master” and the paymaster is familiar with Asian culture which they well know Malaysian contractor tends to be shy when they chasing payment. As a matter of practice and consideration of the business relationship, it is interesting that those contractors are usually not dared to chase payment too aggressively it is because the contractors were scared they will give a bad impression to the employer and they may be blacklisted for a future contract. The contractors always in difficult position and need to plead for a contract in the highly competitive construction market.

According to Mei Ye and Rahman (2010), the result showed that payment delayed from the employer which less than 5 days are accepted by 80% of the respondents. The result also indicated that some contractors perceived the limit of acceptable of late payment from the employers was 45 days. Notwithstanding that the inherent characteristics of this unfair payment practice is prone to construction industry among the contractors.

i. Poor Financial Management by Paymaster

According to the finding conducted by Hasmori, Ismail and Said (2012), the study had shown that “paymaster’s poor financial management” was the case with the higher ranking compared to other factors. The study found that the main cause of late and non-payment among contractor is due to poor financial management by the employer. According to Mei Ye and Rahman (2010), the research found that the underlying causes of the payment issue are due to shortage cash flow in employer’s management capacity. Thanuja and Rotimi (2015) studied causes of payment problems in the New Zealand construction industry and revealed that financial strength of critical industry players considered central to the payment issue. Hence, financial management of paymaster is important, the project owner shall ensure sufficiency of funding for their project.

ii. Delay in Certification

Delay in certification also may cause late payment issues to the contractor. Refer to PAM 2006 Standard Form of Building Contract, under clause 30.0, Architect shall issue an Interim Certificate to the employer with a copy to the contractor within twenty one (21) days from the date of receipt of contractor’s progress claim (PAM 2006). However, the consultants including Architect and Quantity Surveyor may delay in approving the payment claim because of certain reasons, such as delay of site valuation, error communication between the consultants, lack of information, defective work and etc.

Furthermore, Mei Ye and Rahman (2010) had revealed that delay of certification by parties involve (Architect and Quantity Surveyor) in the project might cause to delay of payment.
And according to Danuri, Munaaim, Rahman and Hanid (2006), the results of the study indicated that ‘delay in certification’ is the most frequent causes of late payment.

According to Reeves (2003), documentation error during submitting payment application is one of the major factors for the issues of late payment. This documentation error includes lack of adequate substantial documents, claim which are not following the chronology, inaccurate calculation of claim, request information is not given, method overall progress of works. Most of the issues happen when the contractor submits their payment application but regardless supporting with important documents. As a consequence, it delayed the process of certification due to documentation error.

Bakhary, Hamimah and Azmi (2015) disclosed in their finding, the lack of staff awareness to proactively detect claims, unavailability or inaccessibility of related documents is a critical issue during claim submission. The key project personnel of claimant was played an important role, they shall proficient on the contractual matter state in the contract and familiar the procedure of claim submission in order to prevent payment delay.

iii. Wrongly Withholding of Payment by Paymaster

The overdue payment may withhold by the employer for various reasons. Whereby those reasons may one-sided fuzzy logic which without valid justification. Such as dispute of works, works are not in accordance with the contract, defective works, delay of schedule and etc. Refer to the previous study done by Hasmori, Ismail and Said (2012), most of the time, the paymaster’s employee purposely withhold the payment and look forward they can get some “gift” from the contractors during they pay out the money.

Mei Yee and Rahman (2010) had revealed that the paymaster may intentionally withhold contractor’s payment so that reserve for their own financial advantages, willful withholding payment for personal reasons and delay in release the retention monies accordance to the contract are the causes of the paymaster’s withholding of payment.

iv. Short of Current Years Project

Another factor may contribute to late payment is short of the coming project especially during slowdown of economic or weak demand in the property market. It may occur when the value of work done surpass the allocated budget for the year. Assume that the government is inadequate budget, they may postpone the payment due to the contractor to the following year due to short of allocation for the project. The payment will only be repaid in the event the fund allocated for has been issued by the relevant government’s agency. Similar scenario to the private sector, housing developer may drag the payment due to the contractor because of worst sale performance and result short of project’s funding.

v. Conflict Among the Parties Involve

Conflict always happen in the construction industry, it is due to the complexity of operation in the business. Hasmori et al (2012) had revealed that “payment” always been the main subject of disputes. Late and non-payment issue easily been escalated by the un-resolve conflict. There were various conflicts among the parties involved such as disagreement of the valuation of work done between the contractor and Consultant Quantity Surveyor, lack of trust with the consultant in certification by employer, misunderstanding on employer’s requirement for the works, pushing responsibility among the consultants in the event of payment certificate had delayed, dispute of final account by the contractor and so on.
These conflicts are time-consuming and hard to reach a settlement among the parties. Unavoidable circumstances, conflict is the cause of late and non-payment problem.

vi. Disagreement on the Valuation of Work Done

It is common in the industry where the contracting parties do have the same opinion about the valuation of work done. Based on the research by Mohamad, Nekooie, and Kamaruddin (2012), contractors fail with the site valuation of work done. This circumstance would lead to conflicts between contractors and the employer. The claim negotiation plays a critical role during valuation stage, it shall be keeping fair verification, preventing disputes, resolving claims issues, and maintaining a harmonious relationship among project participants. However, according to Bakhary et al (2015), conflicts occur during negotiation between the employer and contractor are major issues associated with the process of claim management. Consequently, the contractor’s claim would not be certified and created late payment issue.

vii. Pay When Paid Clause

“Pay-when-paid” or “back-to-back” payment term is commonly practiced in the construction industry. This unfair clause often used in the agreement between the employer and main contractor or between the main contractors and sub-contractors. For instance, the main contractor has only been paid after the developer had received repayments from the housing buyers or obtained a loan from the finance institute. The main contractor will apply the same “back-to-back” clause to the sub-contractor, the main contractor only will pay the sub-contractor after they had received their payment from the developer. Furthermore, in the event that the main contractor only received part payment, likewise, the sub-contractor also will be treated to the same.

According to Din and Ismail (2014), the study had indicated that payment defaults are usually taken between two (2) weeks to one (1) month to resolve. Late payment and non-payment will have a chain effect on the entire construction chain value. When a developer does not pay the main contractor on schedule, everyone in the construction chain will be suffered included subcontractor, trade creditors, supplier, hire and so on.

5. RESEARCH METHODOLOGY

Questionnaires survey was used in this research for data collection. It provides an economical way to collect data from a potentially large number of respondents. The questions will be designed as closed format and based on the objectives. The subsequent step after data collections would be compile and analyze all the collected data. The origin of this survey instrument was adopted from Mei Ye and Rahman (2010) with minor modification. The questionnaire has targeted to the project consultant - Quantity Surveyor in order to obtain their point of view of the payment issues faced by the contractor and researcher had made a comparison with the previous study. The researcher has decided on the type of data to collect and had done some minor modification and designed questions according to the objectives of the study by reviewing literature dealing with the payment issues in the construction industry. Validity of the Research Instruments

The sampling adequacy was accessed for every variable by testing with Kaiser-Mayer-Olkin (KMO) model. The value of KMO ranged from 0 to 1. According to Hair et al. (1998), the result of KMO value shall be more than 0.6 and the value of Bartlett’s test should be at least significant at .05. This was to ensure that the survey instrument items are valid. based on Bartlett’s Test, the significant value obtained by the sig. of 0.000 <0.005, in
addition, the value of KMO for this study obtained 0.76, so it can be said that these survey instrument items are valid.

Based on Kish Formula (1965), the recommended sample size of seventy eight (78) of respondents are required for a population of two hundred thirty one (231) Quantity Surveyors for this research project with a given total error of 0.1 at a confidence interval of 95% and estimated 12% of non-responsive rate. However, the researcher had sent out one hundred (100) of questionnaires by electronic mail to target respondents in order to obtain ideal sample size in the survey so that it helps to generate more valid results for the research study. As a result, out of one hundred (100) distributed questionnaires, there are only fifty six (56) usable questionnaires were returned equally to 56% of responds rate. The simple random sampling method was adopted for this study. It is to ensure that each member of the population has an equal opportunity of being selected as the sample without bias (Onen & Oso, 2009).

6. RESULT AND DISCUSSION

A total of fifty six (56) completed survey questionnaires were collected and analyzed. As for gender, results indicated that the sample was comprised of the percentage of female respondents were 51.8% compared to 48.2% male are as shown in Table 6.1. It is glad that there is nearly equal participation of women and men in the workforce especially in construction sector with regards that the image of the Malaysian construction industry is tarnished with inferior working conditions, poor health and safety, dirty and messy construction site, worksite which heavy reliance on cheap foreign male labors and so on. Nevertheless, this representation reflects that both female and male respondents possess equal opportunities to work regardless of gender. This is a good indication which the distribution gender of respondents for this study was fairly distributed.

<table>
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<tr>
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<th>Frequency</th>
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<th>Cumulative Percent</th>
</tr>
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<td>51.8</td>
<td>51.8</td>
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</tr>
<tr>
<td>Male</td>
<td>27</td>
<td>48.2</td>
<td>48.2</td>
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</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>100.0</td>
<td>100.0</td>
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</table>

Payment Default in Construction Industry

Out of fifty six (56) returned questionnaires, twenty four (24) of respondents reported that 26% to 50% of project they carried out had experienced payment issue, twenty one (21) of respondents revealed that between 10% to 25% of their project facing payment problem, above 50% of the project undertaken by nine (9) of respondents have encountered payment issue while only two (2) respondents reported that below 10% of their project have experienced payment problem. Based on Table 4.2, the survey indicated that most of the project participated by respondents have had experienced payment issue which faced by the contractor. This finding was parallel with the previous research conducted by Danuri et al. (2006), in which majority of the respondents affirmed the same situation have experienced late and non-payment problems either in government or private funded projects.

<table>
<thead>
<tr>
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<td>3.6</td>
<td>3.6</td>
<td>3.6</td>
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<tr>
<td>10% to 25%</td>
<td>21</td>
<td>37.5</td>
<td>37.5</td>
<td>41.1</td>
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<tr>
<td>26% to 50%</td>
<td>24</td>
<td>42.9</td>
<td>42.9</td>
<td>83.9</td>
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</tbody>
</table>
The findings have revealed that the client faulted the majority opinion of respondents the payment issues. 53 of the respondents, representing 94.6%, agreed that generally the client faulted the payment issue. Two (2) of the respondents representing 3.6%, reported that payment issue was faulted by the contractor while exception of only one (1) representing 1.8% responded that the payment issue was due to consultant’s fault.

The one-way ANOVA was performed for hypotheses testing with SPSS in order to measure if there is any statistically significant difference between the mean value on each individual factor (IV) causing payment default on the effect (DV) faced by the contractor in the construction industry. In this study, hypothesis stated below had been addressed:

Hypothesis no.1:

H1 = Local culture / attitude significant effected payment problem.

Based on Table 6.3, the result displayed a P-value of 0.000 <0.05 and the F-value of 8.88, it revealed that there was a significant prediction of effect by the local culture/ attitude. The H1 is valid.

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>15.69</td>
<td>12</td>
<td>1.31</td>
<td>8.88</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>6.33</td>
<td>43</td>
<td>.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22.02</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis no.2:

H2 = Poor financial management by paymaster significant effected payment problem.

As demonstrated in Table 6.4, the result displayed a P-value of 0.000 <0.05 and the F-value of 8.88, is shown that there was a significant prediction of effect by the poor financial management by paymaster. The H2 is valid.

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>15.687</td>
<td>12</td>
<td>1.307</td>
<td>8.83</td>
<td>.00</td>
</tr>
<tr>
<td>Within Groups</td>
<td>6.328</td>
<td>43</td>
<td>.147</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22.015</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis no.3:

H3 = Delay in certification significant effected payment problem.

Based on Table 6.5, the result displayed a P-value of 1.00 >0.05 and the F-value of 0.088, it revealed that there was no significant prediction of effect by the delay in certification. Hence, we rejected H3.
Hypothesis no.4:

**H4 = Wrongly withholding of payment by paymaster significant effected payment problem.**

As presented in the Table 6.6, the result displayed a P-value of 0.003 <0.05 and the F-value of 3.13, is shown that there was a significant prediction of effect by the wrongly withholding of payment by paymaster. The H4 is valid.

Hypothesis no.5:

**H5 = Short of current year’s project significant effected payment problem.**

Based on Table 6.7, the result displayed a P-value of 0.002 <0.05 and the F-value of 3.22, it revealed that there was a significant prediction of effect by the short of current year’s project. The H5 is valid.

Hypothesis no.6:

**H6 = Conflict among the parties significant effected payment problem.**

As demonstrated in Table 6.8, the result displayed a P-value of 0.009 <0.05 and the F-value of 2.66, is shown that there was a significant prediction of effect by the conflict among the parties. The H6 is valid.
Hypothesis no. 7:

**H7 = Disagreement on the valuation of work done significant effected payment problem.**

Based on the Table 6.9, the result displayed a P-value of 0.35 >0.05 and the F-value of 1.15, it revealed that there was no significant prediction of effect by disagreement on the valuation. Hence, we rejected H7.

**Table 6.9**

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4.475</td>
<td>10</td>
<td>.447</td>
<td>1.148</td>
</tr>
<tr>
<td>Within Groups</td>
<td>17.541</td>
<td>45</td>
<td>.390</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22.015</td>
<td>55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis no. 8:

**H8 = Pay when paid clause significant effected payment problem.**

As demonstrated in Table 6.10, the result displayed a P-value of 0.021 <0.05 and the F-value of 2.43, is shown that there was a significant prediction of effect by the pay when paid clause. The H8 is valid.

**Table 6.10**

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>7.725</td>
<td>10</td>
<td>.772</td>
<td>2.4</td>
</tr>
<tr>
<td>Within Groups</td>
<td>14.291</td>
<td>45</td>
<td>.318</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22.015</td>
<td>55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the result of hypothesis testing obtained from the data analysis, it is clear that the hypothesis H1, H2, H4, H5, H6, and H8 are valid and meanwhile we rejected H3 and H7. The hypothesis statement can be summarised as:

The causes of payment issues: local culture/ attitude, poor financial management by paymaster, wrongly withholding of payment by paymaster, short of current year’s project, conflict among the parties, and pay when paid clause have significant effect of payment problem.

According to the finding, the top highest ranked underlying causes of payment problem were “local culture/ attitude”. The construction industry has an unpleasant practice of ‘work first, gets paid later’, which contributes another dimension to the payment problem (Pettigrew, 2005). Terms of payment are usually based on credit rather than payment upon delivery, which means contractors need a bigger capital outlay to undertake construction works before progress payment is made. The inherent characteristics of this unfair payment practice are prone to construction industry among the contractors. However, it is regret that the attribute culture of late payment in the industry that contractors perceived the payment delayed for a few days were socially acceptable. Another two (2) root cause of payment problem with the high level of the score was “short of current year project” and followed by “poor financial management by paymaster”.

7. CONCLUSION
The findings from the study revealed that the top three (3) main causes of late and non-payment were “local culture/attitude” (mean 3.88), followed by “short of current year project” (mean 3.73) and “poor financial management by paymaster” (mean 3.72). However, with compared to previous findings, the contractors had reported the event of delay in certification by consultants had significantly contributed to the payment issues. With compared to present finding, the factor of “delay in certification” in consultant’s point of view had contributed the lowest mean (2.83), while this finding was contrasted different between the previous study from contractor’s perception. The Consultants may in the opinion that the delay of certification is not happened regularly, there is only under certified work done in certificate might experience by the contractors for certification related issue. It may because of the contractors failed to submit an interim claim on time or inappropriate claim procedure which resulting in certification issue due to contractor’s related factor.

Nevertheless, both findings had agreed that the unhealthy local culture or attitude of paymaster is a major cause of the late or non-payment issue in the construction industry. It is recommended that contractors should take note of this factor as a major risk in the industry, contractors ought to consider and account for it when bidding any construction contract.

The significant effects of late and non-payment issues in the construction industry have been successfully identified. The results of the research indicated that the most serious effects of payment problem were “create cash flow problem” (mean 4.18), followed by “create negative chain effect on other parties” (mean 4.13) and “create financial hardship” (mean 4.05). It is foreseen that the payment issues most probably will lead to financial stress to the contractors and followed by a destructive effect down the contractual payment chain.

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Non-Technical Attributes of High-Rated Apps: A Study on Top Free Applications in Google Play Store Malaysia

Melvyn Tan Hong Keat¹, Aw Yoke Cheng² and Norsyahida Mohd Maamon³

1 Wawasan Open University, mthk1_SB@student.wou.edu.my
2 iCOOP College, ycaw@icoop.edu.my
3 iCOOP College, syahidamm@icoop.edu.my

ABSTRACT

This paper study on the non-technical attributes of high-rated applications that is listed in the Google Play Store Malaysia. There are 6 different top free category and a total of 3240 applications data is collected for descriptive and statistical analysis. The independent variables are rating, number of reviews and number of previous install. The dependent variable is the application’s rank. Pearson correlation is used for statistical analysis. There exists a strong correlation between number of previous installs and application’s rank in Game Top Selling New Free category. Medium correlation is found within number of previous installs and application’s ranking for category Top Selling New Free. There is no correlation for variable between rating and application’s rank in all the 6 categories. The detailed findings is shared in the previous chapters. The outcome of this study recommends that android developers to focus on improving the number of review in order to improve application’s ranking for applications that have been in the Google Play Store for a period of time. On the other hand, that is recently published to Google Play Store should focus on improving number of downloads in order to improve the application’s ranking.

Key Words: Free Apps; Google Play Store; Apps Rating.

1. INTRODUCTION

Google Play Store is an applications that’s let users install alternative applications in their android device. The Google Play Store in preinstalled on android certified devices (Google 2017). Over 1 million android devices activated everyday across the globe (Google Play n.d.). Activated means that the devices is being setup for the first time which might be a new bought device or a tool that has been reset. The large variety of android devices provides additional chance for android developers to possess their applications installed by android devices user.

Android devices users will simply put in different application in their smart phone either via the Google Play Store applications or via an online browser. once the end user value more highly to installs the chosen applications, the APK (the extensions of applications in Google Play Store) is then downloaded and extracted into the Android ecosystem. The APK is a package that contains binary files of the applications, permission needed, name, and unique identified and others (Google n.d.). User will then launch and use the applications via the interface.

Before Google Play Store is rename it's referred to as Android Market that was unleash to users on 22nd October 2008 (Android Develops blog 2008). Android Market originally solely provides application devices. Presently the Google Play Store contains contents such as applications, games, music, books, movies and television shows, news publications and magazines (Google 2017). There are alternatives to Google Play Store for instance Aptoide, ApkMirror, GetJar, etc (Das 2017).
These different platform serve an equivalent purpose as Google Play Store and required the user to enable installation from “unknown sources”. the additional steps needed will contribute to user avoiding Google Play Store alternatives.

More than 1.5 billion apps and games is downloaded by Android users every month (Google Play n.d.). This large quantity of monthly download able to generate interest in developing android applications. As mentioned in the website Android Authority (https://www.androidauthority.com/how-does-google-make-money-from-android-669008/) the revenue from Android application in 2014 was USD 10 billion. Thus with the large quantity of user and the potential revenue receive from Google Play Store, it is essential for the developers to perceive the factors that may influence the applications ranking.

2. STATEMENT OF PROBLEM

Google Play Store is a large market place with 2.8 million variety of application as of March 2017 (Statista 2017). Applications that have higher ranking might need higher visibility once the end user search any application within the Google Play Store. With the large variety of applications out there, several factors can influence the application's ranking. Variables like number of installs, ratings, number of reviews and ranking are examples of the factors which may influence application’s ranking. These variables are available within the Google Play Store application’s information and is taken into account because the non-technical attributes as a result of it cannot be obtained from the applications. Thus Google Play Store has summarized and collects the user’s feedback to identify which of these variables may affect the application’s ranking.

3. RESEARCH OBJECTIVE

The research objective is to identify the non-technical attributes that have the most significant influence towards the application’s ranking on top free application in Google Play Store Malaysia.

4. LITERATURE REVIEW

Strategy to Drive Application Market Place

Product review have an impact in diving the market particularly in patronizing the local Malaysian e-marketplaces (Cheng, A.Y., and Ab Hamid, N.R, 2011). Cloudia, Varsha and Rachel has founded that more 60% of end users read review before buying a product. Another information shared by the same author is that the product review is 12 times more trusted as compared to the product description itself. In the paper title “What are you complaining about: A study of online reviews of mobile applications” the author found that price and rating have the most influence of an applications amount of review and type of review. Lower rated applications tends to have more feedback from the end user. This study is performed on Google Play Store. (Iacob, Veerappa and Harrison n.d.)

According to Khalid, Asif and Shehzai (2015), application review is a form of crowd source of opinion. This crowd source opinion can have an impact in driving the mobile app market. Popularity of the applications is affected negatively when there exists negative review and low ratings. Analysis of the review can gives the developer a different point of view that is related to the applications. These analyzed information can be used as a guideline for the next application release.

Liu, Au and Choi (2012) in their research stated that in the android mobile market place, freemium strategy can positively influence the sales and revenue of its paid version apps. Freemium strategy is where the developer released the free version of the paid apps by reducing / limiting the features or provides advertisement within the apps. The dataset used is from Google Play Store with the size of 1597 ranked applications. Offering free
version can improve the applications visibility for both the free version and also paid version of the similar applications. Revenue for the paid version of applications is positively influence by the higher rating received in the free version of the applications. Furthermore, based on the research conducted by Ghose and Han (n.d) had identified that In-app purchase is where the applications offer options to unlock certain features to acquiring virtual item within the applications. Advertisements in the applications is normally implemented by developers via integration with advertisement provider such as Admob (https://www.google.com/admob/), unity Ads (https://unity3d.com/unity/features/ads) and Leadbolt (https://www.leadbolt.com/).

The advertisement provider will then pay the developer a certain cut of the earning. With a panel dataset of 400 ranked apps from Google Play and Apple app store across 4 months accessed form the US, the author Ghose and Han share the results of analysis that the demand increases with the description length, number of screen shot, in app purchase option, application age, application version age, number of apps released by the similar developer and volume of the user reviews. On the other hand, factors that contributes to decrease in demand is when the file size increases and there is an in-app advertising. A 50% price discount strategy on the paid application can maximize application developer’s revenue.

**Relationship of Variable in Mobile Application Store**

The previous study conducted by Finkelstein, Harman et al (2014) has explored the relationship between the application customer and the application developers. Data mining process is used to capture all the raw data required. In order to extract out the application feature from the description, natural language processing is used. The analysis is perform on Blackberry App World. The sample of application used is from 19 different categories and both paid and free application. The analysis is perform on Blackberry App World. The sample of application used is from 19 different categories and both paid and free application. There is a strong correlations between customer rating and ranking of apps download in the Black Berry app world. This is true for both free and non-free apps. Free apps is said to have significantly higher ratings when compared to the similar non-free apps. Other information to note from this research is there is a mild correlation between price and the number of features claimed. Spearman and Pearson correlation is used in this analysis. The correlation value between popularity, price and rating is different between categories.

Besides Finkelstein, Harman, et. al. (2017), also conducted the study that exposed there is strong correlations between customer rating and ranking of applications. The study has used Spearman’s Rank Correlation and Pearson Product moment Correlation to investigate the correlation between price, rating and popularity of apps while scatter-plots is use to show the relationship between 2 of the data sets (price/rating, price/popularity, rating/popularity). The findings from the study conducted by Harman, Jia and Zhang (2012), has explored that there is a strong correlation between customer rating and the rank of the app downloads.

Empirical Analysis that has been conducted previously suggested that Google Play store is not a “Long-tail” market but is more of a “Superstar” market. A “Superstar” market is where the market is dominated by popular product while a “Long-tail” market is where the market share is spread more evenly across non popular product. In this study the top applications have more download, ratings and satisfaction ratio as compared to the non-top applications (Zhong and Michahelles, 2013).

Study conducted by Viennot, Garcia and Nieh (2014), has built Play Drone which is scalable Google Play Store crawler which is able to index and analyze 1,100,000 applications in the Google Play Store daily. It is observed that the average rating is within 4-4.5 across all applications for a single group of download count. When the download count increases, the rating for lowest rated application in that group increased. This relationship is
stronger for paid applications. This paper also mentioned that almost all the download in Google Play Store comes from only a small percentage the free applications category. *Negative, Adverse Approaches*

Using unethical methods to boost up application rankings can bring in a lot of new users within a short period of time. When an application was promoted to top 25 of Apple’s leader board via ranking manipulation method, the application can acquire more than 50,000 – 100,000 new users within a couple of days (Takashi 2012). In the paper title “Discovery of Ranking Fraud for Mobile Apps” the author proposed a system to prevent fraud ranking. The fraud ranking detection system is based on the ranking and rating of the applications. Application ranking manipulation is usually done with the used of “bot farms”. The “bot farms” can inflate the application download and rating within a short period of time. We can assume that there is a relationship between ranking, rating and apps downloads. (Zhu, et al. 2013).

An empirical study of emergency updates for top Android Mobile apps conducted by Hassan, Shang and Hassan (n.d) examined that more than 44,000 updates. This is observed on 10,000 mobile applications that is published in the Google Play Store. Of those 44,000 updates, 1,000 are identified as emergency updates. Emergency updates is where an update is release after an update to the application is successfully published to the Google Play Store. One of the conclusion made by the author is that the emergency updates after an emergency can contribute to a higher ratio of negative reviews. This will negatively impact the quality and the user satisfaction of the applications.

*High Rated Apps*

Tian, et al. (n.d) has done a study that investigated 28 factors to understand the differences of high-rated apps as compared to low-rated apps. With the sample size of 1492 free apps mined from Google Play Store, the author share that 17 out of the 28 factors are statistically significantly different. The 17 factors are: install size, number of class, number of project class, number of activity, wmc mean, cbo mean, rfc mean, lcom mean, ca mean, dependency on android library, dependency on third party library, api change, api bug, minimum required sdk, targeted sdk, description length and number of images. The most influential factors that differentiate high-rated apps as compared to low rated apps are number of images, SDK target version and size of the apps.

*Causal Analysis*

A causal impact analysis is perform by Martin and is describe on his paper title “Causal Impact for App Store Analysis”. The purpose here is to identify which release by developer is consider successful and not successful. The data is collected for 52 weeks on both Google Play Store and also Windows Phone Store. The author analysis shows that rating is positively affected when the release is more expansive or the release with longer description (Martin 2016).

5. RESEARCH METHODOLOGY

*Research Design and Procedure*

The Pearson’s correlation is use to discover the strength of link between two sets of data. Pearson correlation’s evaluates the linear relationship between two continuous variables. The relationship between the variable is consider linear when a change in the first variable is related with a proportional change in the second variable. (minitab express 2016) Scatter plot can be used to show the relationship between the two sets of data (number of previous installs/ranking, ratings/ranking, number of reviews/ranking
Sampling Technique

Applications listed in the top free application category is chosen as the sample. The categories are as follows:

- Top free in android applications
- Top grossing in android applications
- Top new free android applications
- Top free in games
- Top grossing in games
- Top new free games.

In Google Play Store applications there is a number of different categories such as beauty, businesses, comics, etc. (Google 2017). The huge number of different categories is to help users discover published applications. Apart from applications and games, Google Play Store also offer other virtual medium such as movies and books (Google 2017).

For each of the six categories mentioned earlier, a sample of 540 applications information is captured. The exploratory study by Harris and Chin is limited to top 540 ranked popular applications (Harris and Chin 2016). This maximum of top 540 application is also visible in the webpage of Google Play Store when scrolled to the most bottom. Using the Html Form method (w3school 2017) it is not possible to capture more than 540 number of application’s id. The results after 540 starts to repeat itself. Therefore maximum possible number of application for each category is just 540. Html Form method is where a form-data is created and submitted to a URL, which the server will process and return the requested results (w3school 2017).

Data Collection Instrument

A simple program (Google Play Store scraper) is built to capture the required information. This program is written using NodeJS (https://nodejs.org/en/). There are many other programming languages can be used to develop this program and is able to achieve the same objectives. NodeJs is preferred because of the code simplicity and easy setup across windows and Linux operating system. The program is developed as with no re-usability in mind, meaning it is develop specifically for this study. The program will need to be redevelop when there is a significant enhancement on the Google Play Store or to be used to capture data from other application marketplace.

There are 2 major component of the program. The first component objective is to capture the list of application's id and the ranking for that particular category. Application id is unique to each application published on the Google Play Store (developer.android n.d.). A single Html Form is submitted to get the list of the application listing. The parameters in a single Html Form are the current index and the page size. The first Html Form will be index = 0 and page size = 60, the next will be index = 60 with page size remains the same and so on where the index is an incremental of 60. The data returned is a web page of the result which is equivalent to Html syntax. With an open source library "cheerio" (https://github.com/cheeriojs/cheerio) the Html syntax is filtered to look for specific keyword that represents the application id. The sequence of the captured application id represents the rank of application because filtering keyword in cheerio is performed in the order of top to bottom. The first component will be executed for 6 different categories. The data is captured and stored into MySQL.

The second component is to capture the applications detailed. The list of application's id is retrieved from the database and processed. Because each application's id
is unique, the URL (Uniform Resource Locator) for the application is unique and can be constructed by appending the application id on this URL prefix (https://play.google.com/store/apps/details?id=). Each html code that is returned filtered for specific keyword via "cheerio". Below is the simple flow chart on how the program works

Figure 1: Flow chart on how the program work
The NodeJs is running on top of windows 10 while the MySQL (https://www.mysql.com/) database is running in Ubuntu. Ubuntu is in the form of virtual machine that can be installed in later edition of windows 10. Windows 10 and Ubuntu is selected out of convenience and does affect the outcome of the study result. Another factor on why database is installed in Ubuntu VM (Virtual Machine) is to avoid slowing down the windows machine with unnecessary software. Ubuntu (https://www.ubuntu.com/) is an open source operating system and is one of the many variant of Linux Operating System. The number of line for this Google Play Store scrapper is around 1082 lines.

Data Analysis

The Statistical Package for the Social Science (SPSS) was used to analyze the data. This is because PSPP (https://www.gnu.org/software/pspp/) doesn’t have the option to run Pearson Correlation analysis. Descriptive statistics is computed using Microsoft excel.

7. ANALYSIS OF RESULTS

Descriptive Statistics

Descriptive statistics of Mean, standard deviation and number of samples is computed for each of the 6 category using SPSS on the collected independent and dependent variable
Table 1: Descriptive statistics for top free category in Google Play Store

<table>
<thead>
<tr>
<th></th>
<th>Game Top Grossing</th>
<th>Game Top Selling</th>
<th>Game Top Selling New Free</th>
<th>Top Grossing</th>
<th>Top Selling Free</th>
<th>Top Selling New Free</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>540</td>
<td>540</td>
<td>540</td>
<td>540</td>
<td>540</td>
<td>540</td>
</tr>
<tr>
<td>Max</td>
<td>40287749</td>
<td>817488</td>
<td>40287749</td>
<td>71769909</td>
<td>817488</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>270.5</td>
<td>270.5</td>
<td>270.5</td>
<td>270.5</td>
<td>270.5</td>
<td></td>
</tr>
<tr>
<td>Rating</td>
<td>4.282</td>
<td>4.33</td>
<td>4.255</td>
<td>4.293</td>
<td>4.311</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>12.88</td>
<td>14.03</td>
<td>9.51</td>
<td>13.07</td>
<td>14.52</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 above is the computed descriptive statistic collected. The column shows all the six categories of top applications in Google Play Store. The row represents the descriptive statistics variable which are Min, Max, Mean, Standard Deviation and N. For this paper there is dependent variable (Rank) and three independent variable (Rating, Number of review and download category) which can be seen on the second column.

Correlation Analysis

The following Table 2 shows the summarized results for Pearson correlation analysis for dependent variable and independent variables. N values which represents the number of samples and it is consistent with the results of descriptive analysis.

Table 2: Summary of correlation analysis between independent variables and dependent variables

<table>
<thead>
<tr>
<th></th>
<th>Game Top Grossing</th>
<th>Game Top Selling</th>
<th>Game Top Selling New Free</th>
<th>Top Grossing</th>
<th>Top Selling Free</th>
<th>Top Selling New Free</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>0.046</td>
<td>0.091</td>
<td>0.050</td>
<td>0.021</td>
<td>0.035</td>
<td></td>
</tr>
<tr>
<td>Rating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Num. of Review</td>
<td>1.45</td>
<td>0.301</td>
<td>0.12</td>
<td>0.182</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Download Category</td>
<td>-0.819</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.001</td>
<td>0.050</td>
<td>0.090</td>
<td>0.001</td>
<td>0.398</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>540</td>
<td>529</td>
<td>539</td>
<td>540</td>
<td>539</td>
<td>539</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
Coefficient of Determination

The summary of computed coefficient of determination shown in Table 3. This is also the percentage of shared variance between a dependent variable and independent variable. The independent variable accounts for the X % of variance in the dependent variable. The highest value of coefficient of determination calculated is 25.4 % for category Game Top Selling New Free for variable rank vs download category. In other terms, for category Game Top Selling New Free, download category accounts for 25.4% of variance in rank. Another coefficient of determination that have percentage level more than 10 is calculated in category Top Selling New Free. Download category helps to explain 15.1% of variance in the application’s rank for category Top Selling New Free. The smallest coefficient of determination is 0.0121% for category Top Selling New Free. The application’s rating have accounts for 0.0121% of variance in the application’s ranking for category Top Selling New Free.

Table 3: Calculated coefficient of determination

<table>
<thead>
<tr>
<th>Coefficient of Determination</th>
<th>Rating</th>
<th>Game Top Grossing</th>
<th>Game Top Selling</th>
<th>Game Top Selling New Free</th>
<th>Top Grossing</th>
<th>Top Selling Free</th>
<th>Top Selling New Free</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Rank</td>
<td>Rank</td>
<td>Rank</td>
<td>Rank</td>
<td>Rank</td>
<td>Rank</td>
</tr>
<tr>
<td>Rating</td>
<td>0.2064%</td>
<td>0.656%</td>
<td>0.3304%</td>
<td>0.0441%</td>
<td>0.3431%</td>
<td>0.0121%</td>
<td></td>
</tr>
<tr>
<td>Num. of Review</td>
<td>2.1025%</td>
<td>3.660%</td>
<td>1.2344%</td>
<td>3.3042%</td>
<td>6.7025%</td>
<td>1.6644%</td>
<td></td>
</tr>
<tr>
<td>Download Category</td>
<td>2.6856%</td>
<td>2.528%</td>
<td>25.4016%</td>
<td>1.3044%</td>
<td>3.6431%</td>
<td>15.0544%</td>
<td></td>
</tr>
</tbody>
</table>

Confidence Interval at 95%

Confidence Interval is calculated by using the tools provided in Website for Statistical Computation (http://vassarstats.net/rho.html?). The calculation of confidence interval is based on the r-value (Pearson correlation) and also the number of sample. Table 4 below display the computed confidence interval at 95%.

Table 4: The computed interval at 95%

8. FINDINGS

Based on the findings, it is show that there is a negative relationship between rating and application’s ranking for category Game Top Grossing, Game Top Selling, Game Top Selling New Free and Top Selling Free. While there is a positive relationship between rating and application’s ranking for category Top Grossing and Top Selling New Free. Besides it can be shown that there is a negative relationship between number of review and application’s ranking for all the 6 categories. The negative relationship has been identified between number of previous installs and application’s ranking and there is no correlation found between rating and application’s ranking. The low negative correlation was examined between number of review and application’s ranking for category Game Top Grossing,
Game Top Selling New Free, Top Grossing, Top Selling and Top Selling New Free. The medium negative correlation between number of review and application’s ranking for category Game Top Selling.

Other than that, there is a low, negative correlation between number of previous installs and application’s ranking for category Game Top Grossing, Game Top Selling, Top Grossing and Top Selling New Free. A medium negative correlation has been identified between number of previous install and application’s ranking for category Top Selling New Free and there is high negative correlation between number of previous install and application’s ranking for category Game Top Selling New Free.

Besides this study also has identified the number of previous installs and number of review for all 6 categories of top free categories from Google Play Store have strongest influence towards application’s rank.

9. RECOMMENDATION AND CONCLUSION

The findings of this paper can be taken into consideration for Android applications developers which are looking towards improving their applications ranking in Google Play Store Malaysia for the free applications category.

For applications that can be consider as “Game”, newly published applications should focus on improving number of installs. The strong correlation of 0.504 between number of previous installs and application’s rank suggest that higher number of installs can influence the applications ranking in a positive manner. For android developers that have existing applications on the Google Plays Store, is recommended to allocate some effort in improving number of reviews by end users. There is a medium correlation between number of reviews and application’s rank at 0.301.

For applications that is not consider as “Game”, newly published applications is recommended to focus on improving number of installs. This is the same recommendation as the “Game” category, but the correlation for number of installs towards application’s rank is slightly lower at 0.388 (medium correlation). To further improved android applications that have existed in the Google Play Store for a period of time is advice to focus on improving number of reviews by end users. The correlation between number of reviews and application’s rank is consider small at 0.295, but is at the high-end of the small correlation category.

As for future research on this topic, it is recommended to expanded this study to other region of the world better understanding on the correlation between all the variables involved in this study. Longitudinal study can be perform to get a more accurate relationship between variables. This can generate more accurate results.

Apart from understanding the relationship of variables in the free category, this research can be extended to top paid category in Google Play Store. The results might be different as the user is expected to pay for the applications. There is a possibility of stronger number of review correlation with rank as the user have paid for the applications.

The correlation between review and rank can be further extended to look at the relationship of positive review and negative review towards the application’s rank.

10. REFERENCES


Management Policies for the Prevention Technique of SoE Attacks

Shekh Abdullah-Al-Musa Ahmed

Universiti Malaysia Kelantan

Faculty of Creative Technology and Heritage, Universiti Malaysia Kelantan, Bachok, Kelantan, Malaysia

E-mail: almusa.c17e002f@siswa.umk.edu.my

Abstract: Information security in an organization will continue to face SoE attacking threat given the global paradigm in today’s digital economy. It is the responsibility of management to address the security issues by forming appropriate security policy for the prevention technique of SoE attacks in the organization. The matter of security implementation is complex and all stakeholders must be involved to understand and commit to the hierarchical relationship of the organization’s business objectives to its security policies down to procedures. Standards and guidelines must also be considered for their in security policy for the prevention technique of SoE attacks.

Keywords: SoE; information security; policies; risk management; security policies

1. Introduction:

The prime reason for the SoE attacks is internet connectivity in the organizations. Though the term policy as a general term along with various types of policies, however the meaning of ‘security policies’ regarding the SoE attacking risk as a specific term. In generic a policy is one of those terms that can mean several things in the information security domain. For example for the prevention technique of SoE attacks, security policies on firewalls which refer to the access control and routing list information in the organizations. A well written policy is more than an exercise created on paper to mitigate risk against SoE attacks – it is an essential and fundamental element of sound security practice [1]. A policy, for example, can literally be a lifesaver during a disaster, or it might be a requirement of a government or regulatory function. As a matter of fact, a policy can also provide protection from liability owing to an employee’s actions or can form a basis for the control of trade secrets[2]

2. Related Literature Review:

When the term ‘policies’ is used rather than ‘policy’ the intent is to refer to those policies that are distinct from standards, procedures and guidelines[3]. Figure 2.1 shows that policies are considered as the first and the highest level of documentation for the organization.
2.2 Senior Management statement of policy:

This is the first step in the policy creation process. Since this article only focus on so-cial engineering attacking risk. So, senior management become the first step in the policy creation for the risk management[4]. In the high level statement of policy that contains the following elements:

- An acknowledgement of the importance regarding the SoE attacking aware-ness and network port security to prevent this attacks.
- A statement of support for SoE attacking risk throughout the business in organizations.
- A commitment to authorized and manage the definition of the lower level standards, procedures and guidelines.

2.3 Regulatory Policy:

There are security policies for the prevention technique that an organization must implement owing to compliance, regulation or other legal requirements as prevalent in the organizations operating environment, both internal and external [5]. The various entities which the business organization interacts can be financial institute (such as those in banking sector), public utilities or other types of organizations that operate in the public interest [6]. Regulatory policies are usually very de-tailed and specific to the industry in which the business organization operates. The two main purposes of the regulatory policies are:

- Ensuring that an organizations follows the standard procedures or base practices of an operation in its specific industry.
- Giving an organization the confidence that is following the standard and accepted industry policy.

2.3 Advisory policy:

These are the security policies for the prevention technique of social engineering at-tacking risk that may not mandated but are strongly recommended [7].

Normally, the consequence of not following them are defined such as Business Conduct Guidelines in an organization – not following these could result in job termination). An organization with such policies want its employees to consider these policies mandatory. Most policies fall under this broad category.

2.4 Informative Policy:

These are policies that exist simply to inform the reader. These are no implied or specific requirements, and the audience for this information could be certain internal entities (within the organization) or external parties [8]. Having discussed the term ‘policy’ in general, let us now turn to ‘security policy’. A security policy is a statement produced by the senior management of an organization, or by a selected policy board or committee to dictate what type of role security plays within the organization. Security policy against the SoE attacks can be defined as a
codified set of process and procedures applied to secure the fulfillment of its obligations and continuation of its activities even in the presence of possible interferences. Security policies against SoE attacks are most often referred to in the context of information technology (IT), telecommunication (TC) or information and communication technology (ICT). Moreover they are often erroneously though, associated exclusively with deployment of computer hardware or software, to the point of the configuration being called security policy against SoE attacks. The definition given in the International Organizations for Standardization (ISO) standard 17799 in a slightly different are risk management and should set a clear policy direction and demonstrate support for and committed to, information security through the issue and maintained of an information security policy across the SoE attacking risk factors in the organization [9]. Below figure 2.4.1 showing the building block of risk management for the prevention technique of SoE attacks.

![Building block of management system for prevention technique of SoE attacks](image)

**Figure 2.4.1**: showing the building block of management system for the prevention technique of SoE attacks.

### 2.5 Social engineering attacking risk factors scenario in financial sectors

In the financial sector, almost every bank has created a comprehensive document that lays down a number of security related guidelines and strategies for banks to follow in order to offer Internet banking. The guideline broadly talk about the types of SoE attacking risk factors associated with Internet banking, the technology and security standards, legal issues involved and regulatory and supervisory concerns. Any bank that wants to offer Internet banking must follow these guidelines and ad-here to them as a legal necessity[10]. Recent InfoSec survey indicate that the banking and finance sector companies, most serious about security regarding social engineering attacks and regarding social engineering attacks and regularly revise their security policies following periodic IS audit.

### 3. Methodology

There should a mechanism that works well for the management system for the prevention technique of SoE attacks, whose objective is to provide a systematic approach to managing sensitive information in order to protect it. It encompasses employees, process and information[11]. Showing in the figure 4.4. In this article it is showing that some basic measures must be applied to secure the information system. Social engineering threats must be managed and controlled and established a global policy, that is, a broad security policy, with management involvement helps to do this. While doing this, four levels of documentation emerge, as depicted in Figure 3.1.
Since in this article describing the management process of the prevention technique of SoE attacks[12]. And to identify the nature of possible threats of SoE attacks. One of the best practices is to establish a set of measure called ‘controls’. Controls are meant to ensure the security and beyond that to also ensure the privacy and confidentiality of information stored in the systems[13]. It is then necessary to continually evaluate the controls with the auditing process.

4. Organizational responsibilities for the management of prevention technique of SoE attacks

Basically in this article describing the management policies for the prevention technique of SoE attacks in the organizations. Ideally ‘best practices’ begins at the top and percolate down in the organization. The senior management team members of an organization are the strategies with version and long term view. This exemplify their asset protection intent with the well-set policies directed toward this[14]. One of the important tasks for the top management in an organization is to make their employees aware of the SoE attacks. This starts with the formation of ‘security policies’ as we see in this article. Security policies, standards and procedures stand in a certain hierarchical relationship in alliance with the organization’s overall business goals. This illustrated in figure 4.1. There are a few important points to be noted with respect to figure 4.1. First of all, to be understood and effective, policies of the prevention technique of SoE attacks must be traceable back to the corporate objectives.

Typically, the management works together with the chief security officer (CSO) and chief information officer (CIO) taking their technical assistant to find the most possible way a social engineering attacker to get into the system[15]. So, after performing a network scan of its business operations environment, an organizations may arrive at a conclusion that they operate a high level of risk in its mitigate the risk of SoE attacks in the organization and must follows strategy[16]. Thus a management role lies in defining business strategies, guidelines and processes/procedures as well as considering the volume of data, systems, sub processes and persons. So, planning to be performance.

- Allocate resources.
- Assign responsibilities.
- Document the process
- Provide tools.
- Ensure training for prevention of SoE attacks.
- Plan the process

5. Conclusion

In the present global digital economy, information flows more often than not through the complex IT infrastructure present. To be efficient at managing, operating and protecting this IT infrastructure, there is a need for having a common set of guidelines for the use and access of information assets. Therefore, in this article focusing on policies, guidelines, and standards for the prevention technique of SoE attacking risk in the domain of information security.

In the global context for IS and the SoE attacking risk factors of threat to information security, it is clear that many business processes do not work without reliable IT systems. Confidentiality and thus integrity and availability of information are of high importance in today's business life. The complexity of security administration in managing large networks is now a big issue. Owing to factors such as globalization and reason of regulatory nature, organization's are now more serious about SoE attacks. International companies seeking to outsource their work and insist on security assurance/ security certification. They insist on adherence to laws, standards and business practices prevalent in their respective countries. Not surprisingly, the top software services companies, IT enabled services companies and BPO outfits are going in for security certification such as BS 7799 or ISO 17799. Thus, regulatory requirements become one more drive for increased security awareness.

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Supplier Relationship Management Effect on Price Control Behavior over Small Bicycle Shops Sales in Kota Bharu, Kelantan

Hetty Hernani Maidin

Universiti Malaysia Kelantan

Abstract

Supplier relationship Management effect on price control behavior over small bicycle shops sales in Kota Bharu, Kelantan. Malaysia SMEs have performed remarkably well with growth exceeding that of the overall economy. In Kota Bharu, Kelantan, there are numbers of small bicycle shops that running as a small-scale entrepreneur. Supplier become a part of the business to make the business success. As the business owner, the important to get the cheapest stock is the must when to earn much profit. They must follow the market price because if they sell expensive price they can’t make it any sale as customer having a right to find the cheapest price. There are many small business as a bicycle shops in Kota Bharu, Kelantan that doing a business and having a stock price problem. Comparing with Kuala Lumpur, Kota Bharu not easy to find a supplier and a stock because of the distance. The supplier relationship also include the price control behavior that making trouble to the small-scale business by getting the stock and earning lesser profit by making much effort. All small bicycle shops in Malaysia a having a same problem because their capacity and capable in running day to day operation in small scale business. Therefore, the government should take some action to helping the small scale entrepreneurs especially with those supplier with supplier system or supplier integration.

Keywords : Supplier relationship management, small business, price control behaviour

1. Introduction

In Malaysia, the small and medium enterprises (SMEs) has taken many observation in the recent entrepreneurship study and research due to their role in the economy contribution. The appearance of SMEs is very important especially for developing and growing economic for the country in the economic growth by improve income distribution, productivity, efficiency and economic structure (Abdullah & Manan, 2011).

In Kota Bharu, Kelantan, there are numbers of small bicycle shops that running as a small-scale entrepreneur (SME Report 2014/2015). The bicycle shops usually include bike service and repair also selling a bike also the spare part. Located on the heart of Kota Bharu town in urban area make the shop location very near to targeted customer. Supplier become a part of the business to make the business success (Herman, J., & Hodgson, B, 2001). As the business owner, the important to get the cheapest stock is the must when to earn much profit. They must follow the market price because if they sell expensive price they can’t make it any sale as customer having a right to find the cheapest price. There are many small business as a bicycle shops in Kota Bharu, Kelantan that doing a business and having a stock price problem. Comparing with Kuala Lumpur, Kota Bharu not easy to find a supplier and a stock because of the distance.

The scenario in Kota Bharu Kelantan while conducted this study is to introduce and explain the issue in small bicycle shop business. As a gap in this research is a condition with supplier relationship management in focus of supplier price control behavior. The supplier relationship also include the price control behavior that making trouble to the small-scale business by getting the stock and earning lesser profit by making much effort. Managing the supplier is
based on the strength of relationship for the successful business by earning supplier trust with honest communication, listening their concerns and involving them to the process to make them as partner in the business (Mickey N. R.2015).

2. Background

Focusing in supplier relationship management effect on price control for this research. As SMEs Report 2015/2016, small bicycle shops as small and medium entrepreneurs also contribute to the Malaysia economic growth. This effect will make a lack of entrepreneur in bicycle shops. Relationship with suppliers is the development of a continuing relationship between company and its suppliers (Li et al., 20015). All this is related on supplier relationship management. Supplier has the power refers to the pressure and problem that suppliers can exert on the business (Simister, 2011). This condition will make the supplier relationship management become more difficult and more complicated because as what had been claimed by Mars, (2014) in his study explored the bargaining power of supplier from Porter’s Five Forces Model found that when few dominant suppliers and no competitors at the same supplying industry will make higher profitability.

Due to scarce with capital resources, the small bicycle shops usually can’t keep a bigger stock in their shops as their capital not big enough. This affected on their sales margin and profit. Even the size of business is small the entrepreneur dreams is wanted to have a big profit margin. They are now earn a small profit margin with much effort comparing with biggest bicycle shop that earn more profit margin with less effort. As their sales are not good enough comparing with biggest scale bicycle shops. The supplier price control behavior was making a trouble to the business but the solutions still have not really come to the small bicycle shops entrepreneurs. Furthermore the principle of demand and supply also take part in this study because there are related with price control.

3. Experimental Study

Discussing about the analysis of the study conducted and will emphasized on the findings received from the respondents and will include all information gathered. The respondents is the owner of small medium enterprise business in area Kota Bharu, Kelantan also with their customers. The customers is targeted on the experience on the buying process with the small bicycle shops and having a good relationship with the entrepreneurs. The discussion will based on the findings of the research to three main point of objective. The findings is related to the topic supplier relationship management effect on price control behavior over small bicycle shops sales in Kota Bharu, Kelantan. The findings are mainly derived from the experience encountered by the business owner and their customers. Thus, it is believed that their views could definitely help on the researcher to better understand the effect of supplier price control behavior on their daily process and sales also day to day operations. Especially related with stocks operations and price management.

3.1 The Effect of Supplier Relationship Management

Based on the answer of question that have conducted through interview, all respondent agreed that the effect of supplier and the important role mainly in the business. In order to effectively manage the supply chain processes there must be a supplier relationship management strategy. The business owner must gain, maintain and must increase and improve a very good relationship with supplier to ensure sustainability of the business. For every successful business there are many strategy and ways to compete also the important things is the entrepreneurs must develop a good partnership between customer and supplier. Both are very important because if fail one their business also will down and cannot sustain. The effect on supplier relationship
management on small medium enterprise business is to make a successful business and increase their sales.

Mostly all respondents are dealing with more than three supplier in their day to day business operations for getting the stock because every suppliers is different. Some suppliers only carry one type of stock and some supplier having many item in their delivery stock. The respondent mostly dealing and ordering from more than three supplier.

"Some supplier is having a different type and brand of stock, some suppliers is competed each other with cheapest price stock to offer to the entrepreneurs. That why the business owner is surveying and always trying to find and having a good deal"

All business owner are agreed with the good relationship with supplier will increase the sales in their business with a good margins and the stock price is more reasonable and cheapest. The supplier will give a good price and the owner of business will have a satisfied customers where the customers is always right. The power of purchasing from customers will increase their sales and margin in their business. Also the customers always looking for a better price beside the good service. When the relationship with supplier is good the business owner is always satisfied and having a good deal with their suppliers. They have a simple and easy transaction on their stock management on day to day operations. So the daily operations in their shops will not having much problem because all the arrangement is in order.

Supplier have become a good resources for innovation and competitive advantages. Supplier is the important role and mainly in the business. Without supplier the business won’t go further success in the business. Every business owner need to have a good relationship with supplier to ensure sustainability of the business and must develop a good partnership between customer and supplier. The effect on supplier relationship management on small medium enterprise business is to make a successful business and increase their sales.

3.2 The Behavior of Price Control in Business Sales.

Usually supplier always connected and related with price control. It is because the pricing that the entrepreneurs get from supplier is the price that become measurement of margins and related cost before come to customer pricing. Usually the business owner always keep changing dealing with supplier because their supplier always can’t give a good price for them, when they founding a new supplier that can offer a very good pricing on the same quality of stock or product that why they go for the cheapest price. As benefit they will get a good margins. For sure the stock price from suppliers are giving a big impact in selling price to customers. Therefore, some of the business always comparing the pricing with online website pricing and doing some research about the stock price with their members, which means connected to the price that will be used in sales to customers. If they found the price is higher they won’t proceed to order and let the shop with empty stock because they don’t want to bear the lost margins.

Meanwhile customers also realize that buying a bicycle or their part in Kota Bharu, Kelantan are more expensive if compare from Kuala Lumpur. It is because usually supplier is from Kuala Lumpur and Kota Bharu is their reseller, with all the additional cost the item will become more expensive. The transportation charge is the reason why the price stock for part and supply also bicycle in Kota Bharu, Kelantan is slightly differ from Kuala Lumpur bicycle shops. Some Shops in Kota Bharu, Kelantan also selling the same item like Kuala Lumpur bicycle shops only differ the pricing. For sure customers will looking the better pricing in buying purchasing proses.

Supplier is the main objective in this study because from them the small bicycle shops business entrepreneur is depending to them to getting the stock. Event other businesses also same but in condition of capital the small medium enterprise (SMEs) that only having a small amount in
capital within their day to day operations are giving more problem and can’t make the business lasting more. Usually supplier always connected and related with price control. This bad habits of supplier is only giving the good advantages to supplier only but then the small bicycle shops entrepreneurs will suffer more. For this some third party and government need to do something with suggestion of system monitoring to help the entrepreneur.

Customers also one of the objective in order to get this research success because customer are involve directly with this business to ensure the sustainability in the business. Customers always looking for the better pricing with a good quality. Some discount and offer will make customers more interested to buy the item and part. Some customers will survey the price before buying an item and will look with the cheapest price stock.

The cheapest price stock is a biggest impact to small bicycle shops entrepreneurs. They can have a good margins when they can get the cheapest price stock. Some supplier are not in good habits when they lock the pricing and lets the entrepreneur getting the stock in higher price. This situation can be called as lock in situation. Instead of the entrepreneur can buy the stock direct to the main supplier, they need to buy with their agents.

In this condition the price are become higher because the agents also getting their margins. Some of the stock are in three or four tier suppliers that already mark up the stock price three or four times. Therefore, the last means the entrepreneurs will get the highest price of stock. If they can direct to the first supplier the pricing of the stock might be cheaper without three or four markup margins pricing.

3.3 The Supplier Relationship Management Related The Price Control and Selling Behavior.

The distance between supplier and their operational place is one biggest factor for the pricing status become expensive. It is because the transportation charge within the distance. Usually their supplier is located at Kuala Lumpur and Penang. It is because the Kuala Lumpur bicycle shops is nearer to the supplier location and place.

From other questions, which is related to the objective of the study, all Respondent are well known if the stock can receive from the oversea but they don’t have a biggest margin to such doing the export things. Respondent 5 highlight the point of small capital that he can’t order a total of bulk stock to get the cheapest price because the capital is not good enough in doing such as transaction.

The small capital for business owner is not enough to order in a bulk to getting a good pricing, event they have a good relationship with main supplier but when come in transaction and involve money it’s hard unless they have a facility in bankers. The main factor why this problem is happen in Kota Bharu, Kelantan because is the distance. Usually all supplier for small bicycle shops entrepreneurs is in Kuala Lumpur or Penang. Because of the distance, the transportation charge are expensive. Entrepreneurs need to bear the cost and include in their price selling to customer. Customers will feel expensive and refuse to buy and finding the cheapest price in online website or others sources. Unless the transportation charge will be minus when the supplier location is nearer. The selling price will going cheaper. Then customers will satisfied buying the item.

4. Conclusions

Based on the perspectives of the research, the discussion will be divide into three research objective. The main objective of this study is to identify what is the impact of supplier price control behavior with supplier relationship on the sales of small medium enterprise business in Kota Bharu, Kelantan. The findings of the main objective will be discussed in this chapter. The data and information under this chapter of study come and gathered from various sources and
some of the information not be directly related to the research topic. Instead, they are combination of information from various sources and perspectives which is suitable and related with this research study. The research looks into various sources of information in order to identify the impact of supplier price control behavior with supplier relationship on the sales of small medium enterprise business in Kota Bharu, Kelantan

This research study of supplier relationship management effect on price control behavior over small bicycle shops sales in Kota Bharu, Kelantan will have a good impact in suggestion to help small medium entrepreneur. Malaysia also will have a good impact in economic growth and will have a name of good sales and income performance in SMEs. Therefore, the economics of Malaysia will increase more and entrepreneurs will have a good income. The Malaysia export also will growth. With that the supplier price control behavior need to be taken action by government and third party to help the entrepreneur in their day to day business operation also increase the sales. With a good profit margin the business will growth efficiently.

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Business Stress, Job Satisfaction, and Employee Performance among SMEs in Malaysia: A Conceptual Study

Dheya Hamood Saif Alfakih
Universiti Malaysia Kelantan

Abstract- In the light of existing literature in regard to organizational stress, job satisfaction, and employee performance, it is perceived that the concepts are much related and significant both in terms of the firm and its employees. Therefore, to gain deeper conceptual understanding of the constructs, present study critically reviewed the existing relevant literature and posits a model to evaluate the relationship between business stress, job satisfaction, and worker's performance in context of SMEs in Malaysia. So, it's expected that the following study would be beneficial for the workers to know the organizational stress they carry at work and understanding how such stress potentially influence their job satisfaction and performance. Moreover, the study contributes to existing literature by providing in depth reference in regard to the correlation between organizational stress, job satisfaction, and performance in the Malaysian SME perspective and thereby positing a model for future research to carry out empirical studies.

Keywords: business stress, job satisfaction, performance, SME, Malaysia

1. Introduction

Small and medium enterprises (SMEs) form a considerable segment of the commercial scenario internationally and their contribution to any economy deserves to be a topic of constant research (Suprapto, Wahab, & Wibowo, 2009). Particularly in context of developing countries, such as Malaysia, small to medium sized enterprises are considered the most significant contributors towards national economic development (Saleh and Ndubisi, 2006), and perhaps it is therefore, that the policies and programs of the Malaysian Government along with other developmental organizations in the country have been nurturing an entrepreneurship supportive environment in order to promote entrepreneurial activities specifically among the low-income and underprivileged entrepreneurs (Al-Mamun & Ekpe, 2016).

Organizations are presently witnessing the rise of business stress that directly contribute towards increasing personal and financial costs of mental health related issues among the employees (Patty, 2016). Business-Stress-related disorders such as work injuries, sick leaves, compensations and absenteeism have been escalating in all industrially developed countries of the world including USA, UK, other European countries, and even Australia; leading to much damage to respective enterprises (Murphy and Sauter, 2003). At an individual level, business stress remains a problem with which employees working in all organizations including public and private need to confront on a daily basis (Demirkran & Taşkaya, 2016). According to recent research, exposure to such chronic stress could potentially induce various physiological complications, such as symptoms and signs of systemic body inflammation, rapid biological aging, and shorter telomere lengths; along with other psychological diseases as a result of intense organizational fatigue and pressure of everyday work-life (Bastug et al., 2016; Humphreys et al., 2012).

On other side, the job satisfaction is a continuing and important topic of research (Daneshfard & Ekvaniyan, 2012). The concept of satisfaction refers to the extent to which an employee feels negatively or positively about their job, as a result of the evaluation of one’s job in achieving or aiding the achievements associated with one’s job value and recognition (Jenaibi, 2010; Locke, 1976; Odom, Randy, & Dunn, 1990). According to research, job satisfactions have been extensively explored in management literature as a result of their significance towards the mental and physical well-being of an employee (Malik, 2011). Provided its association with retention (Mustapha, 2013), job satisfaction
is assumed to significantly influence operations of an organization entirely and is coined as an instrument to determine the success of any organization (Malik, 2011).

1.1 Problem Statement

The review of related studies revealed that organizational stress, job satisfaction, and employee performance are three much related and significant concepts both in terms of the workers and organizations, wherein it is perceived that employees exposed to chronic stress have issues in their life frequently and thereby their performance would be affected negatively. (Goksel et al., 2017). Although certain researches explored into the concept of organizational stress (Example: Uzum et al., 2013; Didymus and Fletcher, 2014) while others have performed studies on worker's performance (Example: Dogu & Yilmaz, 2015; Ogut & Kaplan, 2015), however studies connecting the concepts of organization stress, job satisfaction, and performance, particularly in context of Malaysian SMEs yet remain scarce. In such regard it remains a gap of particular importance particularly in terms of the SME workers in Malaysia to recognise the organizational stress they carry at work and understanding how such stress potentially impact their organizational performance. It is therefore present study is significant as it attempts to conceptualize the crucial relationship between business stress, job satisfaction, and workers’ performance; and thereby contribute towards the body of existing knowledge.

2. Literature Review

2.1 Study Context: SMEs in Malaysia

SMEs in Malaysia can be defined on the basis of two different criteria, which are either annual sales turnover or full-time employees. An establishment will be classified as an SME in Malaysia, if it meets either one of the two set criteria. SMEs in the country are further distinguished into Micro, Small and Medium firms. Particularly for the Manufacturing sector, firms are classified as SMEs when the concerned establishments having less than 150 full-time workers or the annual sales turnover fewer than RM25 million. As for the Non-Manufacturing sectors, the definition of SMEs comprises of establishments with less than fifty full-time workers or the annual sales turnover fewer than RM5 million. In Malaysia, previously a specialized agency called Small and Medium Industries Development Corporation (SMIDEC) was responsible to enhance the development of Malaysian SMEs by providing advisory services, financial assistance, market access, infrastructure facilities, and other supportive programs (SME International Malaysia, 2013).

However, in 2004, the establishment of the National SME Development Council (NSDC) initiated a new chapter in SMEs development of Malaysia, as the supreme policy-making body in regard to Malaysian SMEs. The role of NSDC was to devise strategies relate SME development through different economic sectors and liaising Ministries and Agencies simultaneously to ensure successful operation of the overall SME development initiatives in Malaysia. In 2007, this entity resulted to appoint a single and dedicated agency to integrate all programs through related Agencies and Ministries to formulate overall strategies and policies for Malaysian SMEs. Thereby, SMIDEC was formed and tasked to carry out this role and hence officially transform into SMEs Corp. Malaysia (Small and Medium Enterprise Corporation Malaysia). At present SMEs Corp. is the central point of reference for both advisory services and information in regard to all Malaysian SMEs (Smecorp, 2014).

2.2 The concept of Business Stress

Stress could be defined as the emotional and physical reactions created by problematic conditions for example: oppression, imposition, and also uncertainty (Daft, 1991). In terms of business organizational stress could be referred to the emotional and physical reactions caused when the work requirements are unable to compliment the capacity, needs and ability of the employees (Goksel et al.,
2017). According to Demirkıran & Taşkaya (2016) stress refers to the fact that an individual suffers physical and behavioral changes as a result of psychological or physical effects caused by him or his surrounding, involving the power, the physical, and psychological effects of which could be observed causing organisms that are affected. The source of business stress experienced is associated directly with businesses or the surrounding business environments, wherein organizational stress arises in case the employees are unable to meet certain expectations regarding the business (Tonus & Oruç, 2012). According to Luthans (1992), organizational policies, physical conditions, structural characteristics of the organization, and organizational processes, are the four clusters of factors that cause organizational stress, while according to Price (2003), role conflict, workload and ambiguity lead to organizational stress.

2.3 Job Satisfaction and its antecedents

Job satisfaction among employees leading to employee commitment towards organizations is a continuing and significant topic of research (Daneshfard & Ekvaniyan, 2012). The concept of satisfaction refers to the extent to which an employee feels negatively or positively about their job, as a result of the evaluation of one’s job in achieving or aiding the achievements of one’s job value and recognition (Jenaibi, 2010). According to research factors, such as productivity, efficiency, relationship among employees, burnout, and absenteeism have evolved as crucial antecedents of job satisfaction among employees (Mehrad et al., 2015). Other empirical studies have confirmed that morality, relationship between co-workers, students, sense of community, work atmosphere, and work stress affects job satisfaction (Kztepe, 2008).

2.4 Workers’ Performance

Performance, in context of present study could be defined as the serving of a target level of conducting events within a specified time (Goksel et al., 2017). According to Suliman (2001) performance is perceived as proper behaviors and could be measured according to the level of contributions projected by workers for organizational purposes. Performance of employees is significantly important in effectiveness, performance, and overall success of the firm (Goksel et al., 2017).

2.5 Business Stress, Job Satisfaction and Performance

There are several factors in business environment on which business stress can develop an effect and two of such factors are job stress and employees’ performance. Empirical evidence indicates that work stress affects job satisfaction (Kztepe, 2008). It is perceived that escalated work stress results in declining levels of job satisfaction and morale, which effects work performance negatively (Noordin & Jusoff, 2009). In terms of job satisfaction together with performance, both social and behavioral science research indicates that satisfaction and performance of the job are correlated positively (Bowron & Todd, 1999). Recent empirical evidence conveyed that employees exposed to constant organizational stress are more likely to have difficulties in their daily life that would negatively affect the performance (Goksel et al., 2017). According to Demirkiran & Taşkaya (2016), business stress caused by the above-mentioned factors lead to various problems in employees’ daily life, family life, health, and business life. Decreasing performance, deterioration of relations with colleagues, formation of mental anxiety and distress related disorders, and increasing occupational accidents have been recognised as some of such business-stress related problems that lead to the issues of absenteeism and increased staff turnover rate (Chao et al., 2015; Demirkiran & Taşkaya, 2016; Scanlan & Still, 2013).
3. Theoretical Perspective and Conceptual Framework

3.1 Underpinning Theory

The theoretical foundations for the present study can be traced back to Maslow (1954), who forwarded the Motivation and Personality theory that explains how a person achieves satisfaction with a diversity of personal requirements in the context of employment. Maslow divided requirements into five categories as follows: Level 1, psychological; level 2, security; level 3, social; level 4, esteem; and level 5, self-actualization (Maslow, 1998). Later in 1959 Herzberg added two new and essential factors called intrinsic and extrinsic elements to the job satisfaction paradigm. The scholar posited that intrinsic elements include actual content of work namely achievement, responsibility, and recognition and are referred as ‘motivational’ factors that have a strong relationship with job satisfaction. Meanwhile, the extrinsic factors normally refer to the work environment, salary, size of the class, assessment of the staff, and benefits. All these elements are known as the ‘hygiene’ factors in relation to job satisfaction and performance. Herzberg’s findings indicated that motivational factors can lead to satisfaction and hygiene factors can lead to dissatisfaction when people do not fulfill or meet the requirements made by the company they work with (Herzberg, Mausner, & Snyderman, 1959).

3.2 Conceptual Framework

Based on the theory, existing literature, and discussions above, the following figure is posited as the conceptual framework connecting the concepts of business stress, job satisfaction, and workers’ performance:

![Conceptual Model](image)

3.3 Hypothesis

Based on theory, existing literature and relationship articulations between the constructs of the study, as above, the following hypotheses are conceptualized:

H1: Business Stress negatively and significantly affects Workers’ Performance among SMEs in Malaysia.

H2: Business Stress negatively and significantly effects Job Satisfaction among SMEs in Malaysia

H3: Job Satisfaction positively and significantly affects Workers’ Performance among SMEs in Malaysia.
4. Conclusion

Business stress is a problem confronted by all employees in every organization, which is why it is significant to be aware of the issue, as existing literature reveal that organizational stress negatively effects employee performance, which in certain sectors (example: health care) could have serious consequences. On the other hand, in terms of job satisfaction, it is perceived that if organizations are able to provide satisfaction to their employees, it not only improves the image of the respective organization but also increases the productivity and motivation of employees resulting in enhanced customer satisfaction and thereby ensuring organizational sustainability. The present study attributes to existing literature by providing in depth reference in regards to the concepts and relationships of organizational stress, job satisfaction, and employee performance in the field of SMEs in Malaysia and thereby positing a model for future research to carry out empirical ventures. It is expected that this study would be significant in terms of the workers to be aware of organization stress that they carry at work and understanding how such stress potentially influence their work satisfaction and performance. It is recommended that future work could focus on stress and satisfaction related factors as identified in present study, and accordingly practical implications could be drawn to maximize employee performance.
References


COPING WITH RETIREMENT CRISIS: ARE SMALL MEDIUM ENTERPRISE READY TO FACE UNCERTAINTY OF GLOBAL ECONOMIC

Wee Bee Fong¹

¹ Malaysian Graduate School of Entrepreneurship and Business, Universiti Malaysia Kelantan, Malaysia

Abstract: This study is about creating new knowledge and better understanding on the important of financial literacy awareness towards a comfortable retirement planning among employees of small medium enterprise (SME) at Kelantan. The objectives of the current study is to examine the relationship between financial literacy and retirement planning among employees of small medium enterprise (SME) at Kelantan. To identify the relationship between awareness and retirement planning among employees of small medium enterprise (SME) at Kelantan. To investigate factors that effect on the retirement planning among employees of Kelantan. This study is focuses on private sector which are small medium enterprise (SME) at Kelantan to examine the important of financial literacy of retirement, as we know that many of them saved little and will face financial insecurity in their old age. This study also to enhance financial literacy skill, knowledge and financial decision to manage their own financial in smart and effectively. In order to create awareness in financial literacy toward retirement planning this study suggest that retirees should have early planning stage and be clear on goals setting in their future. As saying goes If you fail to plan, you are planning to fail by Benjamin Franklin (1790).

Keywords: Effectiveness, retirement planning, Employees, Small Medium Enterprise (SME), Kelantan

Introduction

In this globalization and uncertainty of our country economy a well financial planning process is important nowadays in order to achieve financial freedom in the future. Individual should start plan their own financial in early because the earlier they start planning the easier for them to put their money aside to save for their retirement need. According to Guillemard and Rein (1993), retirement can be define individual who is stop working and is out from the labor market.

Furthermore, financial literacy also as important tools in order to have a good financial planning. Financial literacy will give positive effect for their own financial planning (Lusardi & Mitchell, 2011; Hilgert, Hogarth & Beverly, 2003). Person who is highly financial literate and able to manage their own wealth using variety types of financial product that available in the market today. As a result for those have high financial literacy they can achieve their financial goals that has been set before and at the same time increase the standards of living.

In Malaysia Employees Provident Fund (EPF) goals is to ensure our Malaysian can enjoy their retirement consequently those employees and employers is working with private sector are required to contribute 13% from employer and 11% from employees of their salary to EPF for their retirement. Even there have EPF fund but Malaysians nowadays still short of money while in their retirement age and some retirees need to working as a part time due to lack of retirement fund and burden of high cost of living. In conjunction with, those who is lack of retirement planning will facing difficulty to sustain in their life after they retirement (Eugene & Wong, 2013). Age of
retirement men and Women in Malaysia averaged 57.78 from 2009 until 2017, reaching an all-time high of 60 in 2013 and a record low of 55 in 2010.

According to Nornisah (2016), said that member who withdraw 70% from their The Employees Provident Fund’s (EPF) saving spend all within 30 days that a serious problem occurred in Malaysian. Narayanan (2002), argues EPF fund insufficient for retirees to support their golden age due to longer life expectancy. Majority of our Malaysians is over depend on Employee Provident Fund (EPF) for private sector and for public or government sector they will depend on the pension that government give every month when they retire. In their opinion that is enough for them but in fact that is not enough to survive in volatile economic environment todays. (Zabri, Ahmad, & Lian, 2016).

Majority of our Malaysian people didn’t have enough for their income even they contribute using mandatory contribution to Employees Provident Fund’s (EPF) for their future nest egg. From the annual report 2016 EPF have 14.80 million members only 6.88 million member actively and consciously contribute in their EPF (EPF Annual Report, 2016). In conjunction with, in annual report we can seem that active member have less than RM500,000 in contribute their EPF saving which is insufficient for them to cover their expenses when retire. (Ibrahim, Isa, & Ali, 2012). Below Table 1.3 show the average of their member at 54 years old of the age meaning that is 1 year before their member are entitle to make a full withdrawal.

Another key point is, 92% of Malaysians start to worry over retirement fund on their financial health and needs when they are in old age that have been mention by assistant Bank Negara Malaysia. In generally, most of our Malaysian popular strategies for their retirement is over depend on their children or partner, they continue working after retire and relying on government financial assistance (Jessica, 2016).

Important to realize that nowadays generation Y young adult think that retirement planning is too far for them due to their life style different and different perception of thinking (Joseph, 2010). According with the result of finding AXA Retirement Scope 2010 conduct a global retirement study across 27 countries about related issue on retirement. Based on the study only 48% said they are no problem in manage their standard of living after unemployment.

From this point of view shown that our Malaysian’s level of awareness financial literacy in retirement planning is low. Furthermore, age of retirement in Malaysia is keep increasing from 55 to 60 years old. As we all know that Malaysian’s life expectancy is increasing to 74.7 year in 2016 Department of Statistic,(2016). These figures shown that Malaysian’s will reach retirement age with longer life expectancy then will burden with high inflation rates and suffered high medical cost in healthcare that why they need well prepare for their retirement to ensure no worried about saving money. From current issues on poor and lack of retirement planning behavior will affect contribution the life of retirees when they retire soon. Below figure 3 shown life expectancy at birth, Malaysia,2010-2016.

Malaysian life expectancy increasing to 74.7 if they retire on 60 years old how they going to survive for another 15 year if average life expectancy 74.7. In this 15 years retirees need some money to cover expenses for instance healthcare, food, and other expenses. In this globalization environment in Malaysia, inflation rate keeps on increasing. Based on this worrying situation, how can our Malaysians hedge against the skyrocketing inflation rate nowadays? From this current situation, how can we cope with this problem?

This is a very alarming problem that occurred in Malaysia. According Fiona Ho,(2016) indicated that 9 in 10 of Malaysians are having zero savings which is a sad news fail to plan for their financial. Miserably that one in three Malaysians do not have savings account and majority of them cannot survive more than 5 years post retirement. As a result, this research is to create awareness on how
to start planning for their retirement and when is the right time to start planning for a comfortable retirement.

In addition, studies that have been conducted show that only 22% have their retirement plan. Meaning to say that other 78% of them is not ready financially for their retirement. Most of our Malaysian people are not having a proper financial planning for their retirement years (AndyChua, 2015).

Furthermore, Malaysian nowadays also alarming with serious of bankruptcy. The Malaysia Department Of insolvency declare that cases of bankrupt consistently keep increasing year by year due to the lack of financial literacy the ability to handle their personal financial well. Most of the Malaysian especially graduates will facing bankruptcy problem due to their own lifestyle which mean they are live in lavish lifestyle. Another reason cause of bankruptcy due to high cost of living and high cost of food (Isabell, 2014).

**Literature review**

**Awareness**

Lack of Awareness can be from various neurological insult for example cause by stroke, traumatic brain injury or dementia (Fleming & Strong, 1999). For instance individual who is suffer with Alzheimer’s disease their awareness in cognitive function is slightly declines this will be limitation in alertness of important issues have been rise recently (McDaniel, 1995). In this study if individual who is suffering neurological problem they unable to think deeply and automatic their awareness level will be declines on the current issues that happen surrounding them.

A research study by Rooij et al (2007), and Almenberg and Dreber (2012), argued that women who is lack of financial awareness will give impact on their financial decisions. Financial awareness is important because they deal with their own money so they need handle it carefully before made any decisions.

Fact that is brought by Albert (2011), mentions about the level of awareness of the respondents will give impact on the types of investment they made. In this study also emphasize on level of awareness that will determine their type of retirement planning vehicle they choose. (Tina Vohra & Mandeep Kaur, 2016).

There are few research that has been carry to investigated youth awareness on financial product that available in market due to seldom they will involve and buy for their self because retirement planning still early for them to plan but day by day they are burden with high cost of living that they didn’t realize (Harrison etal., 2006).

There are two reason for awareness in financial awareness skill that people tend to make mistake due to low awareness and will effect on the decision making and risk involved in their financial decisions so a positive awareness is need to avoid they are fail for their retirement planning (Cramer, Tuokko, Mateer, & Hultsch, 2004).
Financial Literacy

According to Garman and Forgue (1999), financial literacy can be defined as “the sufficient knowledge regarding their personal finance fact and also was the key in their personal financial management. Besides that, in their discussion the lack of financial literacy and time constraints in learning about personal finance is consider a stress or barrier for them to make decision on the their personal finance due to a lot of product choice in the market nowadays. Financial literacy is important among Malaysian today because it will be useful for them in panning their own financial with a smart way.(Fisher, Hayhoe, & Lown, 2015).

On the other hand, Micheal (2009) indicated that financial literacy is about the education or knowledge skill and understanding on their own finance manage their own financial in well informed and plan carefully with smart way. A poor financial literacy or lack of financial literacy will effect on the decision making in handle their own finance.

Individual that have ability on knowledge and skill in financial will manage their life time financial well-being effectively using all resources provided for their happy life in future (Suwanaphan, 2013). Retirees need have some knowledge or skill in handle or planning for their retirement to ensure that they are happy while they retire.

Sabri & Juen (2014), said that people who are financial literate and financial educated will have basic understanding on some financial concept for instance our current inflation rate, interest rate, risk reduction, compounded interest and diversification in their financial. Nowadays inflation rate is keep increasing so is the time for those who is educated will start their planning as fast as possible.

From this view people who are financial literate and have better understanding on financial concept capability and high confidence will manage their personal finance. This financial literacy level is able use in short term decision making and long term for retirement planning (Remud,2010).

Individual that who is low level of financial literacy is one of the main reasons that will cause financial crisis in their retirement in future (Atkinson and Messy,2011). Furthermore according to Lusardi and Mitchell (2011), nowadays individual need to be knowledgeable in financial in order to survive in volatile economic environment like our country Malaysia.

According Harnish (2010), all individual should have financial literacy awareness consequently they will make up their mind regarding on their budget and start planning for their future.

The Credit Counselling and Debt Management Agency(2016), mentioned that lack of financial knowledge in finance literacy awareness this is the main reason that why individual having a lot of debt especially youngster that having loan and using credit card that is the main causes of bankruptcy. Every month there a lot of the number of bankruptcy. Hopefully after done this research it will reduce the number of bankruptcy in Malaysian especially happen on youngster nowadays (Azaddin,2016).

Mak and Braspenning (2012), said that mostly consumer do not have sufficient financial literacy so it will effect on decision making biases. Compare with people who is low financial literacy they will late make decision in their retirement planning.

Researcher argue that person who is financial literate able to manage their money and grow money value by investing in right place or save in the right place. Let their money work for them instead they work for money by using their expertise in analytical skill. This kind of people will be responsible on their financial (Beal,Depschtray,2003).
Hogarth (2002), said that financial literacy is about to describe how well their knowledge and understanding the concept of financial concept then use their expertise plan and managed their own financial and decision making.

In addition, by individual that having positive mind set or attitude outcome of this positive impact is they will be more confidence on their retirement if they have a strong financial literacy awareness (Kim, Garman & Quach, 2005).

**Saving behavior**

According to Lawson (2006), saving behavior is important in planning for their own financial planning due to balance their saving, expenses and budget for their retirement. Besides that, Lawson (2006) also encourages student start save early to ensure that they can have a healthy lifestyle if they plan well in their financial. Moreover, it is important too to identify between need and want which is more important due to decide whether to use cash to buy or should use purchase on loan credit card. Think widely and smartly before take an action.

Ekerdt (2001), saving behavior could be reacting with the retirement plan. If people who has saving behavior will plan for their retirement due to their view on retirement in another prospective. So they will start to plan and design their own retirement plans in future. For those who is high level or high educated and discipline mostly they will have their own financial behavior and will try plan for their own financial planning in order to maximize the profit.

Deway (1910), decision making of the individual behavior will effect on the retirement planning that they have make and choose either in financial product that available in the market for instance mutual fund, pension fund, insurance and invest in stock market. People who was saving habit will definitely grow their money by choosing some product in the market and let it grow over the long term. Hence, let your money work hard for you rather than you work hard for money by choosing the right retirement vehicle that available in the market and practice the right strategy is essential.

Hogarth et.al (2003), found that if households have any saving goals definitely it will influents saving behavior. Setting the right financial goals is important for household in order to plan for their future and will automatically lead their saving behavior to achieve their goals.

**Retirement Planning**

Retirement planning is the most highlighted concern issues today. Retirement can be define individual that who is permanently stopped working in their career or profession. Our Malaysian labor law retirement age for Malaysian is at age of 60 years old. Nevertheless, there a big issues while reach retirement retirees whether in government or public sector they have their own support fund but fund is not enough to cover their retirement days. Mostly our Malaysians stylish today more relying on the Employee Provident Fund (EPF) saving and didn’t think on how to diversification their saving to maximize profit for their retirement In our eyes think that retirement is still far away from now but it need well financial literacy to well organized their retirement saving plan for future(Merriam-webster, 2014)
Kim, Kwom and Anderson (2004), person that who have plan for their retirement tend have high confidence in their retirement. They will calculate how much it need while reach in retirement age in order to life without worried about the money.

Malaysian’s life expectancy improvement from 72.2 year in 2000 to 74.7 year in 2016 (Depart of Statistic, 2016). As result this the longer life expectancy the more expenses need to cover our life during retirement. Retirees will be burden on high cost of expenses in medical cost and healthcare cost due to medical cost is keep increasing nowadays.

Retirement planning will be plan based on their goals clarify what they need in the future. The importance of setting goals for future is a must due to it will determine planning practice and planning will be turn into the saving habit that will be advantages for their golden age (Stawski et al., 2007).

Joo and Pauwels (2002), Gen-Y who is well educated tend to have high retirement confidence. Consequently Gen-Y generation will plan early their retirement planning by diversification their financial into other useful resources for instance involve in investment for long term to maximize their money. Lee & Law (2004), argued that the is importance to having retirement planning due to lack of the retirement planning will lead some people end with disappointed during retirement. As a result, preparation for a retirement task is not an easy some of them didn’t alert of this planning.

**Life Cycle Hypothesis Theory**

The life cycle hypothesis was formalized by Madigliani and Brumberg (1950), the purpose of this hypothesis is to better understanding individual saving plan for their retirement life span. Actually life cycle hypothesis is the main motivation and encourage individual for saving and using their saving money in their future retirement age.

There are different perceptions between young and old individual. For young people there are positive perceptions on saving while they are working in their younger age. However, for those old individual that going retire they will give negative perception on saving and start to enjoy their retirement with the money they have save before.

Angus (2005), argued that in economy perspective the population is growing and income also growing year by year this generation will be better their parent. As a result, population continuously growth there are more young people around this will give positive impact on saving compare with old individual meaning that more young people will save than are dissaving.

The life cycle hypothesis theory is explain how people divide their income between spending, saving and borrowing. From beginning of the working life income is low and incomes start to increase by middle age until retirement. In contrast, when people in low income they will save a small portion from their income when their income start increasing they will save more to deal with uncertainty of economic when they retire. That is an ideal way for putting aside small amounts of salary or money today you will be in good at a later age.
Madigliani and Brumberg(1950), life cycle theory can be explain from this graph. From the above graph shown the individual starts save from 20 to 65 years old. These theories mention that individual is seeking to smooth consumption over the course of a lifetime. In the early stage 20 years old example as a student the need to borrowing loan for instance like PTPTN for their education fund so they are dissaving. After graduates from university they are in working life and start pay the loan and start saving for their retirement in future. When saving in working life it would be hardly for then to maintain similar income during their retirement.

**Theoretical Framework**

This research study using theoretical framework. Most of the retires hope that they can achieve financial freedom while they retire. Madigliani and Brumberg(1950), life cycle hypothesis is adapted for this study to tested their saving towards a comfortable retirement planning in Kelantan. As an outcome researcher have identify independent variable for this study is awareness, financial literacy, and saving behavior. This study is to focus on among this three independent variable which one is the most that will give effect on comfortable retirement planning in Kelantan.

Comfortable retirement planning among Kelantan is the main dependencies variable in this study. Saving behavior is independence variable in this study due to the behavior combine of cognitive psychological to overcome the financial decision making. In this study saving behavior is the way or action that how they manage their own financial based on their financial background. Moreover, financial literacy awareness also important to make sense that there are insufficient of saving while retire that is the point that to create awareness of financial literacy among Kelantan.

Beside that independence variable retirement plan that available in market. Nowadays there are a lot of retirement plan in market such as invest using EPF in unit trust company diversified their saving as a saying goes don’t put all egg in the basket or invest using cash scheme to maximize the return and gain profit. Financial education is also considered as a independence variable that will also will cause the awareness of the financial literacy.
Methodology

According Sekaran & Bougie (2013), research design is a blueprint for the collection, measurement, and data analysis that is based on the research question that have been develop by researcher. There are two research methods which is qualitative and quantitative research. In this studies researcher using quantitative approach to measured three independent variables. Where by three independents variables is about respondents saving behavior, financial literacy and retirement planning that respondents plan and action taken. Furthermore, researcher using survey method by distribute questionnaire due to examine the relationship between independents variables and dependents variables. However, the most effective way to help researcher gather and gain more data collection is using questionnaire.

Conclusion

From this study contribution for individual of the important of planning for their postretirement in order to have a comfortable retirement when their old age. This study will help policy maker, government and society to make improvement on how to help them achieve financial freedom in their retirement age to hedge against inflation nowsaday that is keep increasing.

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MODEL INTEGRASI PEMBELAJARAN KEUSAHAWANAN BERASASKAN PENGALAMAN (i-ICE) MENERUSI PROGRAM PERINTIS KEUSAHAWANAN EKONOMI KREATIF

Nik Zulkarnaen Khidzir 1,2,5, Khairul Azhar Mat Daud 1,4, Siti Aisyah Attaullah 1,3, Hazrina Hasbolah 1, and Nik Mohd Firdaus Nik Zainal Abidin 1

1 Faculty of Creative Technology and Heritage, Universiti Malaysia Kelantan
2 Global Entrepreneurship Research and Innovation Centre, Universiti Malaysia Kelantan
3 UMK Entrepreneurship Institute, Universiti Malaysia Kelantan
4 Institute of Poverty Research and Management, Universiti Malaysia Kelantan
5 Centre of Computing and Informatics, Universiti Malaysia Kelantan

Abstract
i-ICE merupakan model Integrasi Pembelajaran Keusahawanan berasaskan pengalaman yang dibangunkan hasil dari pelaksanaan projek rintis Program Perintis Keusahawanan Ekonomi Kreatif menggunakan pendekatan yang unik secara inovatif dalam melatih bakal usahawan muda dalam proses pemindahan kemahiran dan kepakaran dalam menjalankan aktiviti keusahawanan industri ekonomi kreatif. Secara konsepnya, model i-ICE ini dilaksanakan menerusi tiga fasa yang menekankan aspek yang berbeza dalam proses pemindahan kemahiran keusahawanan. Fasa pertama adalah Fasa I-Engaged, dimana bakal usahawan yang mempunyai idea perniagaan yang berpotensi akan dikenal pasti untuk di bantu secara intensif oleh jurulatih keusahawanan. Fasa I-Connect, dimana pada fasa ini, usahawan akan mendapat sebahagian keuntungan dari hasil penglibatan mereka dalam projek ekonomi kreatif pada skala industri dan pada masa yang sama, mereka dapat mempelajari kemahiran menerusi kehadiran pembelajaran berasaskan pengalaman sebenar di industri. Fasa yang terakhir adalah Fasa I-Income, dimana pada fasa ini, usahawan akan mendapat sebahagian keuntungan dari hasil penglibatan mereka dalam projek ekonomi kreatif pada skala industri dan pada masa yang sama, mereka dapat mempelajari kemahiran menerusi kehadiran pembelajaran berasaskan pengalaman sebenar di industri. Proyek rintis ini secara langsung memberi pendedahan yang sebenar kepada bakal usahawan sebelum terlibat secara langsung dalam aktiviti keusahawanan ekonomi kreatif yang mempunyai potensi besar dalam mewujudkan peluang pasaran pekerjaan pada masa akan datang.

Keywords: Pendidikan Keusahawanan, Ekonomi Kreatif, Jurulatih Keusahawanan, Model i-ICE, Pelan Perniagaan

1. Pengenalan

2. Konsep Perlaksanaan Pembelajaran Berasaskan Pengalaman Menerusi Program Perintis Keusahawanan Ekonomi Kreatif (Model i-ICE)

Universiti Malaysia Kelantan (UMK) mempunyai program-program yang berdaya saing dan berkemampuan untuk melahirkan graduan-graduan yang berpotensi untuk menceburi kerja sebagai usahawan. Pengajaran dan pembelajaran telah menerapkan subjek-subjek keusahawanan dan menjadi salah satu fokus penting kepada universiti untuk menyediakan platform kepada bakal graduan di dalam bidang yang bakal menjadi keparakan terutama kepada pelajar yang mengikut program-program yang mempunyai elemen – elemen kemahiran dalam menghasilkan produkproduk sendiri. Justeru program ini direka sebagai peluang kepada pelajar untuk mempunyai pengalaman sebagai usahawan di dalam industri sewaktu masih di tahun akhir universiti, dan bukan hanya program sangkutan industri yang biasa. Program ini dibina berdasarkan keperluan pelajar dan kepakaran fakulti – fakulti untuk menjalinkan hubungan jaringan industri dengan Industri Kecil dan Sederhana (IKS) dengan memastikan penciptaan pekerjaan melalui proses keusahawanan. Perbezaan program ini dengan konsep mencari pekerjaan dan mencari pasaran bagi produk pelajar, program ini berinisiatif menceburkan para pelajar pada semester 6 untuk memasarkan produk dan merealisasikan idea perniagaan dengan bimbingan pihak industri sebagai Mentor (usaha sama) dan penyediaan dana kewangan dan soft skills dari pihak universiti (fakulti). Konsep perlaksanaan program ini secara ringkasnya digambarkan oleh gambarajah dibawah:

Gambarajah 1 : Model i-ICE

Pelaksanaan program ni akan meliputi tiga fasa iaitu i-engaged, i-connect, dan i-income yang meliputi masa 6 bulan yang akan melibatkan proses pelaksanaan dari individu pelajar menjadi usahawan melalui dana dan latihan yang disediakan oleh universiti. Program ini berfokus pada pelaksanaan dari individu pelajar menjadi usahawan melalui dana dan latihan yang disediakan oleh universiti (fakulti), usahawana pelajar dan Mentor dari industri dan akhirnya meneruskan daya saing di dalam industri. Seramai 100 pelajar tahu akhir akan diberi peluang untuk menyediakan proposal dan sebanyak 45 individu terpilih berdasarkan kriteria yang ditetapkan. Program ini bakal menyokong konsep kelestarian ekosfera keusahawanan Fakulti Teknologi Kreatif dan Warisan (FTKW) dengan menjalin hubungan dinamik antara graduan dan industri dan seterusnya menjana pendapatan dan hubungan industri untuk membentuk jalinan hubungan industri kreatif.
3. Objektif Program dan Aktiviti : Pembelajaran Berasaskan Pengalaman Menerusi Program Perintis Keusahawanan Ekonomi Kreatif (i-ICE) di Universiti Malaysia Kelantan

Menerusi perlaksanaan pendekatan Model i-ICE ini beberapa objektif yang bakal dicapai termasuk:

a) Mengenalpasti Rancangan Perniagaan (RP) daripada mahasiswa UMK yang mempunyai ciriciri inovasi, kreatif, berdaya saing dan seterusnya mampu dikomersialkan disamping melahirkan peluang pekerjaan (Job Creator) di masa akan datang melalui Business Plan Competition (BPC).

b) Melatih mahasiswa dan graduan UMK ke arah menjadikan keusahawanan sebagai platform dan peluang kerjaya dengan menerapkan set minda dan ciriciri usahawan dalam diri mahasiswa UMK yang seterusnya membantu memperkasa dan memantapkan fungsi Unit Keusahawanan di FTKW Universiti Malaysia Kelantan.

c) Menghasilkan ekosistem melibatkan pihak industri sebagai sebahagian daripada proses pengalaman menyertai industri yang seterusnya dibantu oleh tenaga pengajar Universiti Malaysia Kelantan dari segi ilmiah dan kepakaran fakulti.

d) Menyokong program berimpak tinggi yang dianjurkan oleh Kementerian Pengajian Tinggi Malaysia dengan menyediakan mahasiswa dan mahasiswa bergraduat ke arah bidang keusahawanan, seterusnya mengenalpasti mahasiswa yang mempunyai kecenderungan yang tinggi dalam menjadikan usahawan sebagai kerjaya di masa hadapan.

e) Mengetengahkan budaya usahawan di peringkat Universiti melalui sokongan usahausaha dan nilai-nilai keusahawanan di kalangan mahasiswa dan graduan secara praktikal dengan menggunakan instrumen dan proses yang bersesuaian, sekaligus melatih mahasiswa berdikari di dalam industri.

f) Melibatkan graduan secara aktif dalam bidang keusahawanan untuk membantu dan meningkatkan ekonomi komuniti setempat.

4. Kumpulan Sasar Projek Rintis i-ICE : Pembelajaran Berasaskan Pengalaman Menerusi Program Perintis Keusahawanan Ekonomi Kreatif

Pelajar UMK di Kampus Bachok, iaitu mahasiswa dari Fakulti Teknologi Kreatif dan Warisan. Program ini menyediakan peluang kepada pelajar dalam mengembangkan bakat potensi diri dan minat dalam keusahawanan sekaligus menceburi industri yang dipilih berteraskan ekonomi kreatif untuk proses berdikari sebagai seorang usahawan sewaktu pada tahun akhir ijazah. Proposal dan idea yang disediakan akan menggunakan keperkasaan pelajar di dalam bidang dan diselarikan dengan minat untuk berdikari dan menjadi usahawan.

5. Kaedah Perlaksanaan Projek Rintis i-CE : Pembelajaran Berasaskan Pengalaman Menerusi Program Perintis Keusahawanan Ekonomi Kreatif

Program ini menitikberatkan kerjasama antara pihak universiti dan pihak industri dengan memberi peluang kepada pelajar yang telah mempunyai idea dan produk untuk terus dipasar-kan dan dilaksanakan di dalam dunia perniagaan. Penglibatan dan kerjasama ini bakal membantu bimbingan yang kuku kepada pelajar untuk bergiat di dalam industri sebagai usahawan agar pengalaman ini membuka peluang dalam menjalankan hubungan industri sekaligus merebut peluang perniagaan yang wujud di dalam industri kreatif.

Untuk memastikan proses pelaksanaan dijalankan dengan teratur dan menepati objektif keseluruhan program, Program ini telah dibahagikan kepada tiga fasa iaitu (i-engaged, i-connect dan i-Income) yang akan dijalankan mengikut jangka masa selama setahun seperti didalam jadual 1.
Jadual 1: Fasa-Fasa Perlaksanaan Program berdasarkan Model i-ICE

<table>
<thead>
<tr>
<th>Fasa</th>
<th>Jangka Masa (Bulan)</th>
<th>Persekitaran</th>
</tr>
</thead>
<tbody>
<tr>
<td>i-Engage</td>
<td>Jan-Feb (2 Bulan)</td>
<td>Universiti</td>
</tr>
<tr>
<td>i-Connect</td>
<td>Mar-Sept (6 Bulan)</td>
<td>Industri</td>
</tr>
<tr>
<td>i-Income</td>
<td>Okt-Dis (3 Bulan)</td>
<td>Komuniti</td>
</tr>
</tbody>
</table>

Perusahaan Kecil dan Sederhana (IKS) yang sedia ada dalam membantu mahasiswa dalam mengembangkan nilai-nilai keusahawanan didalam diri mereka melalui khidmat nasihat dan bantuan lain yang fleksibel dengan perniagaan mahasiswa tersebut. Faedah yang diperoleh hasil daripada sasaran ini adalah jalinan dan rangkaian industri wujud di antara mahasiswa, universiti, industri dan juga komuniti kampung sekitar Kelantan.


5.1. Fasa Pertama : i-Engaged (i-E)

Fasa pertama bertujuan mengenalpasti individu-individu yang telah mempunyai idea dan produk untuk dipasarkan dan kategori yang disenaraikan yang meliputi program setiap cluster iaitu Multimedia dan Komputeran Kreatif, Warisan, Teknologi Kreatif, Rekabentuk Industri dan Artistik yang merupakan program yang menjana ekonomi kreatif.

Hebahan dilakukan kepada para mahasiswa tahun tiga (3) iaitu semester keenam yang ber-minat melalui pelbagai medium. Penyertaan adalah berdasarkan kumpulan bagi setiap cluster di FTKW bersyarat di mana setiap mereka mestilah mendaftar dengan Suruhanjaya Syarikat Malaysia (SSM) dan berminat menjana pendapatan melalui kepakaran dan produk berinovasi.

Pemilihan rancangan perniagaan yang terbaik dinilai oleh panel penilai berdasarkan kategori yang disebutkan dan kategori perniagaan adalah keaslian idea, misi dan visi perniagaan tersebut disusuli dengan kesesuaian hasil yang diperuntukkan yang mana tidak melebihi RM200,000.00 (100 peserta).

Sebanyak tiga proses yang terlibat di dalam proses tersebut iaitu Penjanaan Idea, Pemilihan Idea dan sesi perbentangan. Hanya 100 peserta sahaja yang terpilih berdasarkan kriteria-kriteria yang ditetapkan termasuklah persediaan, kelayakan, dan peluang idea-idea itu dil-aksanakan di dalam industri.

Proses penyesuaian pemilihan mentor akan dikendalikan oleh fasilitator dan pensyarah kerana mereka lebih arif mengenai pakar-pakar mahupun syarikat-syarikat besar dan berpotensi tinggi untuk menjadi mentor perniagaan kepada peserta mengikut bidang kepakaran. Setelah selesai proses pemilihan dan penyuaipadan antara peserta dan mentor dan fasilitator, fasa kedua diteruskan.
Dana hubungan industri RM30 000 diwujudkan untuk memastikan semua maklumat syarikat dan pakar-pakar dapat dikumpul dan untuk menjemput pakar-pakar industri menjadi panel pemilihan kertas kerja yang kreatif, berinovasi, mempunyai peluang dan boleh dilaksanakan.

5.2. Fasa Kedua : i-Connect (i-C)

Fasa kedua adalah fasa di mana peserta yang terpilih akan menceburi industry yang dipilih untuk menjalankan aktiviti sebagai usahawan seperti mana di dalam idea yang telah dipersetujui sewaktu pemilihan. Mentor yang dipilih berdasarkan kelayakan dan kejayaan di dalam bidang usahawan akan menjalankan usahamanya dari segi idea, pengalaman dan peserta dianggap sebagai perintis kepada inovasi baru dalam industry tersebut. Peserta akan menjalankan proses produksi, pemasaran dan pembelajaran melalui pengalaman yang akan meru- juk kepada pengalaman dan selok belok di da-lam industri tersebut.

Di samping itu, Universiti akan menyediakan kursus pemantapan keusahawan yang menekankan konsep pengurusan kewangan dan pengurusan sumber dan sumber manusia dalam syarikat. Kursus 3 hari 2 malam tersebut akan memberi panduan asas dalam mengendalikan dan mengurusi perniagaan, kemahiran negosiasi, pengurusan sumber manusia dan kursus pemantapan emosi dan Dana peruntukan tambahan sebanyak RM50000 juga disediakan untuk peserta memohon seb- arang kursus-kursus keperluan yang memohon untuk menyertai seminar untuk mendapatkan hubungan dengan pakar-pakar dalam industry yang dipilih. Dana ini akan digunakan untuk membangunkan kepakaran dan kebolehsaraan produk dan syarikat peserta.

5.3. Fasa Ketiga : i-Income (i-I)

Fasa ketiga merupakan fasa di mana peserta yang telah berkecimpung dengan industri selama 6 bulan akan melibatkan diri untuk bekerjasama sesama peserta lain untuk berganding bahu melaksanakan satu projek di kampung terpilih dengan menyumbangkan kepakaran mahupun keperluan kepada projek tersebut. 10 peserta membentuk 1 kumpulan dan memilih salah satu kampung yang dicadangkan dan kemudiannya mengambil pasti masalah mahupun keperluan pembangunan di kampung tersebut. Setiap projek dibayai sebanyak RM20000 dan terpulang kepada inisiatif kumpulan untuk menjana dan mendapatkan dana tambahan untuk melaksanakan projek. Kumpulan perlu melaksanakan Projek dalam 3 bulan dan sebelum tamat program tersebut. Setiap aktiviti dan pelaksanaan perlu didokumentasi dalam format video untuk penilaian. Pemenang akan dianugerahkan award pada malam kemuncak program di mana semua pihak terlibat akan dijemput untuk merakam majlis dan mendapat sijil dan anugerah bagi graduan terbaik.

6. Hasil dan Impak Perlaksanaan Model i-ICE: Pembelajaran Berasaskan Pengalaman Menerusi Program Perintis Keusahawanan Ekonomi Kreatif

Program ini akan dapat mengenalpasti Rancangan Perniagaan (RP) daripada mahasiswa UMK yang mempunyai ciri-ciri inovasi, kreatif, berdaya saing dan seterusnya mampu dikормesialkan disamping melahirkan peluang pekerjaan (Job Creator) di masa akan datang melalui Business Plan Competition (BPC).

Program ini berupaya menyumbang kepada pencapaian Dasar pembangunan Keusahawanan negara bertujuan untuk menggalakkan dan memantapkan pembangunan keusahawanan yang lebih terancang dan holistik di kalangan IPT tempatan.
Program ini merupakan salah satu cara meningkatkan kesedaran pelajar tahun akhir mengenai konsep keusahawanan sebagai peluang pekerjaan terutama kepada graduan yang berunsurkan ekonomi kreatif yang berpeluang menjadi perintis kepada idea-idea dan produk-produk berinovasi tinggi. Kesedaran dapat di tingkatkan kepada peserta yang telah di panggil untuk pemilihan fasa pertama. Program ini juga menunjukan sokongan universiti dan kementerian dalam menyokong usaha pelajar dalam menceburi bidang ini dan aktiviti keusahawanan.

Program ini juga telah direka agar proses permulaan perniagaan peserta diberi bimbingan di samping member peluang kepada peserta untuk menjadi kreatif dan inovasi di samping berpeluang menjana pendapatan di industri. Proses permulaan merupakan salah satu fasa penting kerana perancangan yang teliti dan mendapat pendapat dari pakar adalah penting untuk pelajar mengelak kesilapan-kesilapan kecil yang bakal melunturkan minat pelajar terhadap aktiviti keusahawanan.

Seramai 100 orang peserta yang terlibat akan dapat menceburi diri dalam bidang perniagaan sewaktu di dalam pengajian tanpa bekerja di syarikat mentor, sebaliknya lebih kepada konsep usahasesa dan hubungan strategik untuk memperoleh hubungan jaringan yang baik dan lebih setara. Ini memberi impact seramai 100 peserta diberi peluang menjadi usahawan di dalam industri kepelbagaan dan sekaligus menggunakan sumber dari universiti (kepelbagaan dari pengetahuan) dan industri (kepelbagaan dari pengalaman) dan seterusnya mendidik peserta agar sentiasa menjaga kepelbagaan komuniti dan masyarakat dalam proses membangun. Hal ini adalah penting dalam membangunkan budaya kepelbagaan usahawan di kalangan usahawan-usahawan.

Dari peluang pekerjaan, 100 pekerjaan akan disediakan iaitu bilangan peserta mana-kala jika setiap peserta berjaya mengekalkan perniagaan dan mencipta satu jawatan kosong, ini akan menghasilkan 100 pekerjaan secara langsung. Program ini juga menggalakkan usahawan mengambil pelajar dari universiti untuk latihan praktikal dan ini akan merapatkan hubungan di antara alumni dan pelajar sekaligus membentuk pasukan industri yang bersatu dan saling bekerjasama. Memberi impak kepada komuniti daripada aspek ekonomi & sosial melalui sumbangan mahasiswa dalam membangunkan komuniti sebagai contoh menyediakan peluang pekerjaan dalam masa yang sama meningkatkan taraf hidup masyarakat setempat.


7. Kesimpulan

Konsep Pembelajaran Berasaskan pengalaman menerusi Program Perintis Keusahawanan Ekonomi Kreatif merupakan platform yang dirangka khusus bagi pembangunan kemahiran keusahawanan ekonomi kreatif. Menerusi pendekatan ini, proses pemindahan kemahiran dan kepakan dalam menjalankan aktiviti keusahawanan industri ekonomi kreatif dapat di laksanakan secara sistematik dan menyeluruh. Kaedah ini dilaksanakan menerusi tiga fasa yang berasingan mempunyai tujuan dan objektif yang khusus dalam memberi impak optimum terhadap hasil program dalam sesuatu proses pemindahan ilmu kemahiran keusahawanan. Fasa I-Enggaged, Fasa I-Connect, dan Fasa I-Income yang dirangka bertujuan dalam melahirkan usahawan ekonomi kreatif yang berdaya saing serta mampu menghadapi cabaran...
dalam perniagaan di industri sebenar. Pendekatan ini mampu memberi pendedahan yang sebenar kepada bakal usahawan sebelum terlibat secara langsung dalam aktiviti keusahawan ekonomi kreatif yang mempunyai potensi besar dalam mewujudkan peluang pasaran pekerjaan pada masa akan datang. Program ini merupakan satu platform keusahawanan sebagai satu kerja yang disokong oleh pihak universiti dalam memastikan graduan kepakaran teknologi kreatif menjadi perintis di industri ekonomi kreatif yang bakal membantu dalam membangun dan menyediakan negara ke arah negara maju pada tahun 2020.

8. Penghargaan

Terima kasih kepada Kementerian Pengajian Tinggi Malaysia kerana membiayai projek rintis program keusahawanan berimpak tinggi yang menjadi asas kepada pembangunan model integrasi pembelajaran keusahawanan berasaskan pengalaman dalam pembangunan ekonomi kreatif. Terima kasih juga kepada Fakulti Teknologi Kreatif dan Warisan, Universiti Kelantan yang memberi sokongan kepada kejayaan projek ini.

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Perceptions of Tertiary Student’s towards a Career In Hospitality & Tourism Industry

Nik Mohd Sallehuddin Bin Nik Abd Razak
Universiti Malaysia Kelantan

Abstract

This study aims to look at the perceptions of tertiary students towards career paths in the hospitality & tourism industry. The hospitality and tourism industry has contributed significantly to the country and the people involved in the industry. In order to move the industry more productively and efficiently, it would require a highly skilled workforce in order to provide the best services to travelers and hotel guests. The industry's internal environmental factors also play an important role in attracting attention, especially those of high school students taking hospitality and tourism programs / courses to survive in this career thus contributing significantly to this industry. The hospitality and tourism field is an exciting career for those who have the characteristics of providing customer service, but the internal affairs of this hospitality and tourism organization have made this career less desirable, temporary work and looking at it have no stability in terms of future careers. This study was conducted to identify the perceptions of students of hospitality and tourism programs as to what attractiveness and factor factors make them want to work in this industry.

Keyword : student practical, perceptions, commitment, working condition, salary

Introduction

The hospitality and tourism industry are well known worldwide including Malaysia. It has been facing with the problem of fascinate and maintaining employees quality which has lead to a shortfall of skilled personnel to staff the always growing number quantity of tourism and hospitality businesses.

According to Awang, Ishak, Radzi and Taha (2008), hotel industry in Malaysia plays important part in tourism industry as it provides accommodation to travellers and tourists. Nevertheless, hotel industry has been a major role in the growth of the Malaysian economy, which grants approximately 50 percent of the nation's real GDP. For Malaysia economy, a higher total of GDP is recorded, and need more employment should be supply.

Hospitality and tourism as a key sub-sector to services industry and these social responsibilities opportunities should not be overlooked by hospitality and tourism organization in Malaysia.

Malaysia’s tourism sector has been recognizing as one of the major contributors to the nation’s economic success. This sector has achieved many meaningful achievements at local and international level. In addition Malaysia country is top 10 ranking among tourist destinations in the world. Malaysia also had been recognised as the World’s 5th Best Shopping Destination by Expedia UK in 2016.

In academic term, tourism is known as activities with people travelling and stay at places outside from their usual environment for leisure, business or other purposes.
Hospitality is the friendly and generous reception and entertainment of guests, visitors, or strangers.

“Hospitalitem” is coming from Latin word meaning “friendliness to guests” and showing hospitality involves making the outsiders are feeling comfortable, pleasure and welcoming to our home, hotel, city or country.

Most of the college or university required their student to do a practical training as early stage for their exposure in hospitality career. From here they get real exposure before graduating and will decide whether to work in the hospitality and tourism sector or change direction towards other careers that are not related to hospitality and tourism career. With a preliminary exposure in the industry will change the perceptions of undergraduates pursuing a career in this hospitality field whether or not they are in line with their attitude and interest in this industry.

Industrial Training or internship is part of subject requirement in hospitality and tourism program in each university and college for their students’. The duration of practical training or internship ranges between 12 weeks to 24 weeks.

The main objectives of this practical training or internship are:

i. To improve student learning skill by doing practical training in hotel or tourism organization.

ii. To helps them to gain extra knowledge from the hotel or tourism organization to do better in practical training.

iii. To helps them gain work related skills and expertise related to their future careers.

iv. Real work situations enable them to see clearly about their career path after graduation.

v. It helps them to know deeper about the hospitality and tourism career through practical training experience and not only depend on theory that they learn in class at university and college.

Source: Kiran Mayi Immaneni & Dr. Vedala Naga Sailaja (2017)

According to Srinivasan and Rajeshree (2014), industrial training or internship is part of hotel management education curriculum, as perceived by industry and students. It is requirement in syllabus for in hospitality and tourism program at university and college.

It is also as a requirement by the hospitality and tourism program at university and college that their student to do practical training especially during last semester duration between 12 – 24 weeks as a part of the subject fulfilment in this program to get early exposure and minimum working experience before they graduated.

Hospitality and tourism organization need a trained student to be as part of their members by giving them early exposure such as practical training.

Industrial training is one of the methods to help student to get familiarized with what they done in their university and college before going for internship. Industrial training
is very useful to hospitality and tourism students in terms to get practical knowledge and develops their skills and knowledge into professional level.

During practical training, most of the hotel and tourism organization pay the allowance for the student, providing hostel for their stay and staffs meal during on duty as equal with other employee. Even though the allowances receive by practical student is low rather that fixed salaries that employee receive, but it is a consolation pay by hospitality and tourism management organization as appreciation for the student contribute their commitment during practical training.

Most of the hospitality and tourism organization offer a job for the internship student once they completed practical training if their work quality and commitment are good. The academic definitions are taught in university and college for students to acquire general knowledge, which is compulsory to surpass in any career that they involved.

The jobs also need particular knowledge and technical skills, where it can be earned through formal training. According to Daskin and Kassim (2015) Lau (2005) “Malaysia Association Hotel (2005) Salleh (2010) and Mahony (2011) Malaysia has become an attractive tourism destination over the last two decades” However, studies on tourism and hospitality research in Malaysia have often highlighted high-staff turnover rate, insufficient of skilled employees that results in poor service quality, a lot of workloads, role stressors, limited pay and promotions, and customer’s service breakdown as the industry's main problems. These factors include young transient workforces, low pay, long hours working per day (outside normal office hours), negative image in perspective for future employees, poor application of student labour (Deery & Shaw 1999) (Freeland 2000) (Brien 2004) (Baum 2006)

These include general perceptions of successful for their future career in hotel and tourism. Such as skills that they had learn and get not only at their respective university or college, but also at industrial training place. Students are expected to have good working environment good salaries, good training, efficient staffs to work with and ability to use the skills that they had learn to contribute for the hospitality organization.

According to Purcell and Quinn (1987) a lot of hospitality and tourism management graduates fail to work in this industry because of low job satisfaction and poor working condition and employment. Working experience contribute the most factor influence the undergraduate either to chose hospitality and tourism career or chose another field as their job after graduate from respective college or university. Working experience was known as tremendous influence on career decision of promising hospitality workers. It based on work-based learning either structured or unstructured that contribute important role in hospitality & tourism student’s attitude towards pursuing career in this industry when they completed their study.

1.2 Background Of The study

As Malaysia is prepared on the way to the progress in human capital, this issue will affect the service delivery to the hotel customers especially for tourists (Taib 2010). At macro level government should strengthen more professional in education for the hotel industry.
By using this method, Malaysia will have professional hotel employees. Perceptions of the working environment and condition while working in the hotels must be taught at the Faculty Of Hospitality & Tourism students so that they will have a clear picture in their mind on the commitment level they need show when working in the hospitality industry.

Hotel industry plays a meaningful part in fulfil tourism as it provides accommodation to travellers and tourists. According to Awang, Ishak, Radzi, & Taha (2008), the hotel industry has been a major contributor in Malaysian economic success, which contribute almost 50 percent of the nation's real GDP.

The hospitality industry is a broad category of fields within the service industry that includes lodging known as hotel, food services, event planning, theme parks, transportation, cruise that related within the tourism industry.

The main of this industry objective is focused on customer satisfaction and at a same time gain profit through product and services that hospitality offered to the customers. This industry depends absolutely on customers’ satisfaction. This is because this business is based on providing luxury services.

For the early exposure in career hospitality and tourism industry, Students where they are undergoing practical training or known as an internship. They will place either at the hotel or travel agents It involves students from various levels of education ranging from diploma and degrees in their respective places of study.

Once they are going for industrial training, it exposes the student into the reality of working in hospitality and tourism industry.

Their experience will change their perception of this career, whether they will pursue their commitment in this industry or not after graduate. It depends on the way the hospitality organization treats them either good or bad, the policy of workplace and wages paid, working hours, nature of works and the condition of workplace.

Literature review

According to Jiang and Tribe (2009) student direct experience in this industry can lead to negative toward hospitality & tourism job. This statement supported by Richardson (2010) approximately 40% those who already had working experience in this industry declare that they would not seek employment in hospitality & tourism after graduation.

In the study of Gu (2007) student believed that career development in the hospitality and tourism was not adequately promising. Students tend to select other industries upon graduation because they believed that salaries in other industries were more higher rather than in the hospitality and tourism sector.

According to Kusluvan & Kusluvan 2000, commitment decrease to the industry were linked with the nature of work such as compacted and the fatigue nature of work itself, failing to reimburse employee for achievement, long hours in duties, insufficiency of family life, employment uncertainty and low expectation and promotions.

According to Aksu and Kokal (2005) stated that the individual commitment of the student is another factor that outlines the image of the tourism industry in a positive path. An ambition to study hospitality & tourism at university, and readiness to work in hospitality & the tourism industry after graduation grant a positive,
comprehensive the industry image sees the jobs as a waiter or waitress do not require high academic qualification.

It is widely accepted that the typical of the industry such as long working hours, poor working environment, lack of pay, salary, wages and benefit had build poor image and reputation of the hospitality & tourism thus decrease the commitment level of the students. (Roney & Oztin 2007)

According to Sowmyaand Panchanatham (2011) recognize that “the cause determine job satisfaction were pay and promotion, organisational factors, supervisor’s behaviour, job and working condition, co-worker’s attitude, etc. They identified that all these causes are important for employee job satisfaction”.

According to Roney and Oztin (2007) “the organization can give the student a task that appropriate to their passion, by this it can build up their working experience. Usually students who go for practical training have a passion to try on the thing that interests them. In addition, the organization should have a good supervisor as they can really train and supervise the student during practical training”.

Research Methodology

This research is based on descriptive that already applied and conducted by previous researcher. Data are collected through questionnaire delivered to hotel and travel agency to be filled up by the respondent those who are in progress with industrial training or known as practical training.

The method using is quantitative by distributing questionnaires for practical student at hotel and travel agency. There are about 150 questionnaires are distributed and only 130 are returning back, from 130 sampling, only 108 relevant to use.

Type of sampling researcher used is non – probability technique. Researching used convenience sampling technique where subjects are selected because of their convenient accessibility and near of the researcher to get the information Student who is undergoing practical training at hotel / travel agency.

According to Sekaran and Bougie (2013) “the research design is a structure based on the collection, analysis and measurement of data that answer the main and sub research questions.

Research design is a blueprint for the collection, measurement and data analysis based on the research question that had been developed by researchers”. The researcher uses the quantitative method to study and measure the relationship between the dependent variable (commitment to the industry) which contains five independent variables such as work nature, social status & industry – person congeniality, physical working conditions & pay / benefit, promotion opportunities and co-worker and manager.

The researcher used the survey method to distribute the questionnaire to test the relationship between independent variables and the dependent variable. Thus, considered the questionnaire is the most effective way to help the researcher to collect data from the target respondents which they represent the tertiary education student especially in Hospitality and tourism management.

Researcher visited the hotel around Kota Bharu and distributed questionnaire. Human Resources Manager acted as a medium to distribute the questionnaire among practical training at their hotel or travel agency. The researcher also contacted a student who practical outside Kelantan to get more responses to answer a questionnaire of this research such as in Pahang, Terengganu and Perak.
Questionnaire had been made in two language Malay and English and divide into seven sections. According to Cooper and Schindler (2014) Likert scale is an outline valuation scale formulate to show either a positive or negative approach towards the subject of interest and increasing the number of scale leads measure reliability accordingly. The researcher use questionnaire in order to measure the factors such as demographic variable, commitment to industry (dependant variable) and five independent variable such as nature of work, social status & industry – person congeniality, physical working conditions & pay / benefit, promotion opportunities and co-workers & manager. The questionnaire has seven (7) sections, one demographic section, one section for dependant variable and five sections for independent variable. The questionnaire consist 74 question divided into 7 part.

It contains close-ended in order to create less time consuming when the respondent fill up the questionnaire form and Likert Scale from 1 to 4 only. The questions only have 4 rating Likert such as 1 - Strongly Agree, 2 - Agree, 3 - Disagree and 4 – Strongly Disagree. There is no mid scale for either agree or disagree because researcher want respondent to give their opinion either agree or disagree and not in neutral situation. The sources are from Wylie R.C (1974)

**Method Of Analysis**

From 108 respondents, there are 34 male students with percentage 31.5% and 74 female student with percentage 68.5% as a sampling for this research. For the education background, the researcher took 2 levels of studies beginning from diploma and Degree from respondent. There is 85 Diploma students contribute the most respondent with 78.7%) and degree only 23 (21.3%) For year of study, most of the student are comes from third year with 95 (88%), 12 student from fourth year (11.1%) and 1 only at second year (0.9%) All the respondents are full time in study mode.

There are 81 respondents told that Hospitality & Tourism Courses are their first choice with 75% and only 27 (25%) respondents says that this course was not their first choice. There are 66 respondent has working experience with 61.1% and 42 with 38.9% respondent has no working experience in Hospitality & Tourism industry.

There is two type of higher institution learning either under government or private. 3 government universities such as UMK, UiTM and UUM, Others such as Kolej Vokasional, Kolej Komuniti and Polytechnic.

The private university and college such as Twintech University College, Kolej Bestari Setiu, KDU Penang, Ranaco Education & Training Institute, KPTM and Food Institute Malaysia (FIM) as a private higher institution learning.

All the 19 place of study has a Hospitality & Tourism courses from diploma to degree. For the private higher institution learning, Twintech with 30 respondent or 27.8% of them comes from three UiTM Shah Alam, Dungun and Penang with 21 students (19.5%)
<table>
<thead>
<tr>
<th>Commitment to industry (Dependant Variable)</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I AM HAPPY TO HAVE CHOSEN HOSPITALITY AS A CAREER</td>
<td>108</td>
<td>1.6111</td>
<td>.50849</td>
</tr>
<tr>
<td>2. I would like to work in hospitality after graduation</td>
<td>108</td>
<td>1.7130</td>
<td>.51248</td>
</tr>
<tr>
<td>3. I would recommended hospitality jobs to friends and relatives</td>
<td>108</td>
<td>1.7315</td>
<td>.60537</td>
</tr>
</tbody>
</table>

Likert Scale 1 (Strongly Agree) 2 (Agree) 3(Disagree) 4 (Strongly Disagree)

<table>
<thead>
<tr>
<th>Nature of work</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. JOBS IN THIS INDUSTRY ARE INTERESTING</td>
<td>108</td>
<td>1.6111</td>
<td>.52655</td>
</tr>
<tr>
<td>4. Family life affects work in this hospitality</td>
<td>108</td>
<td>2.2500</td>
<td>.76274</td>
</tr>
<tr>
<td>5. Every day I learned a new thing in this industry</td>
<td>108</td>
<td>1.5833</td>
<td>.51383</td>
</tr>
</tbody>
</table>

Likert Scale 1 (Strongly Agree) 2 (Agree) 3(Disagree) 4 (Strongly Disagree)

<table>
<thead>
<tr>
<th>Social Status &amp; Industry – Person Congeniality</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My family is proud of my job in hospitality</td>
<td>108</td>
<td>1.7130</td>
<td>.47461</td>
</tr>
<tr>
<td>4. I get pleasure working in hospitality</td>
<td>108</td>
<td>1.7130</td>
<td>.49391</td>
</tr>
<tr>
<td>5. I LIKE TO SEE SATISFIED CUSTOMERS</td>
<td>108</td>
<td>1.5833</td>
<td>.51383</td>
</tr>
</tbody>
</table>

Likert Scale 1 (Strongly Agree) 2 (Agree) 3(Disagree) 4 (Strongly Disagree)

<table>
<thead>
<tr>
<th>Promotions opportunities</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Promotion is based on merit</td>
<td>108</td>
<td>1.7685</td>
<td>.48542</td>
</tr>
<tr>
<td>2. Promotion opportunities are satisfactory</td>
<td>108</td>
<td>1.8796</td>
<td>.60709</td>
</tr>
<tr>
<td>5. ACADEMIC QUALIFICATIONS ARE CONSIDERED</td>
<td>108</td>
<td>1.7315</td>
<td>.48542</td>
</tr>
</tbody>
</table>

Likert Scale 1 (Strongly Agree) 2 (Agree) 3(Disagree) 4 (Strongly Disagree)

I AM HAPPY TO HAVE CHOSEN HOSPITALITY AS A CAREER

I would like to work in hospitality after graduation

I would recommended hospitality jobs to friends and relatives

Likert Scale 1 (Strongly Agree) 2 (Agree) 3(Disagree) 4 (Strongly Disagree)

Nature of work

1. JOBS IN THIS INDUSTRY ARE INTERESTING
2. Family life affects work in this hospitality
3. Every day I learned a new thing in this industry

Likert Scale 1 (Strongly Agree) 2 (Agree) 3(Disagree) 4 (Strongly Disagree)

Social Status & Industry – Person Congeniality

1. My family is proud of my job in hospitality
4. I get pleasure working in hospitality
5. I LIKE TO SEE SATISFIED CUSTOMERS

Likert Scale 1 (Strongly Agree) 2 (Agree) 3(Disagree) 4 (Strongly Disagree)

Promotions opportunities

1. Promotion is based on merit
2. Promotion opportunities are satisfactory
5. ACADEMIC QUALIFICATIONS ARE CONSIDERED

Likert Scale 1 (Strongly Agree) 2 (Agree) 3(Disagree) 4 (Strongly Disagree)
### Physical working condition and pay / benefit

| 2. Considering long hours worked pay should be higher | 108 | 1.6759 | .54393 |
| 4. More penalty rates (i.e. overtime payment) should be paid | 108 | 1.5278 | .50156 |
| 5. Duty meals is an important in the salary package | 108 | 1.5185 | .50199 |

### Co Workers and manager

| 1. I CAN MAKE FRIEND EASILY WITH OTHERS | 108 | 1.6389 | .55465 |
| 2. Managers behave respectfully toward employees | 108 | 1.7500 | .64308 |
| 3. Manager provides vocational training | 108 | 1.8333 | .57193 |

### Likert Scale 1 (Strongly Agree) 2 (Agree) 3 (Disagree) 4 (Strongly Disagree)

<table>
<thead>
<tr>
<th>Dependant Variable</th>
<th>Coefficient</th>
<th>No of questionnaire</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitments to industry</td>
<td>.489</td>
<td>12</td>
<td>Poor</td>
</tr>
<tr>
<td>Independent Variable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nature of work</td>
<td>.621</td>
<td>8</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Social Status &amp; Industry – Person Congeniality</td>
<td>.623</td>
<td>11</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Physical Working Conditions &amp; Pay / Benefit</td>
<td>.563</td>
<td>10</td>
<td>Poor</td>
</tr>
<tr>
<td>Promotions opportunities</td>
<td>.474</td>
<td>9</td>
<td>Unacceptable</td>
</tr>
<tr>
<td>Co workers and manager</td>
<td>.528</td>
<td>17</td>
<td>Poor</td>
</tr>
<tr>
<td>TOTAL</td>
<td>67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Conclusion

Interestingly independent variables of nature of the work and the co-workers and manager had affected perceptions of hospitality and tourism students towards a career in hospitality industry. Even though the only moderate correlation with dependant variable commitments to industry, researchers found that most of the respondents are happy to work in this industry after graduation because of the job is interesting and learn a new thing every day. It supported by their colleagues at workplaces mentioned that they have a good friend and happy to work in this industry. Furthermore, most of the manager right now had changed their attitude by respecting the staffs and trainee. By respecting them, the manager will earn a respect too from staffs and trainee.

The manager also provides a training for the staffs and trainee student to make sure the effects and efficiency during on duty. Training also will increase the knowledge, especially in a Standard Operations Procedure (SOP).

The others matters in such as promotions, social status and physical working conditions in weak correlation with commitment with industry should be upgraded to attract new employees to work. Promotions should be based on merit and education qualification based on the answer from the respondent and they want fairness in promotions to higher positions.

According to Gan (2016) the career hospitality and tourism in Malaysia are looking unstable even the government introduce minimum wage policy, the confidence level of this career still low among the employees because of this industry itself. Hospitality workers in Malaysia had little confidence that even with the introduction of a minimum wage policy, salary levels and working conditions will not improve in the hospitality industry. Surprisingly even the image of the hospitality and tourism always seem to shadow with negative image and negative perception, but the result from the respondent seem quite good and they enjoying their internship at their hotel and tourism agency. Nature of work and co-workers and manager mostly show their interest and passion to work in this industry is still high even though a few negative elements still in hospitality and tourism.

Even the salary payment and benefit is still not satisfied level, the researcher found that the respondent quite happy during practical training because they have a friendly staffs to make a friends and good manager that give a training, guidance and motivation during on duty that make trainee interested to learn new thing in the hospitality and tourism organization. The students are motivated to go for practical during internship because they have friends (staffs) and happy to work together.

The university and college that offer hospitality and tourism program must have a good rapport with industrial people, so that the educators can develop new co curriculum that suitable with present situation in this industry. The syllabus should contain the latest information and new knowledge about the changing of technology or working system so that the student will get a clear picture before they go for practical training especially in last semester.
REFERENCES


ABSTRACT

This study outlines the knowledge and implementation of green practices at office among the Politeknik Kota Bharu staff. This study focuses on the green practice that was practiced at office. The respondents were among the Politeknik Kota Bharu staff. The objectives of this study is to know the level of green practice knowledge among the Politeknik Kota Bharu staff and the second objective is to know the level of green practice implementation at office among the Politeknik Kota Bharu staff. There are two methods to be consider in this study. The methods used are observation and questionnaires. For the purpose of this study, questionnaires are divided into two main category. Which is green practice knowledge and green practice implementation. The category of green practice implementation contains five main aspect that contributes the environmental problem. The aspects are the daily practices that can reduce the energy consumption, reduce solid waste generation, recycling practices among the staff, daily practice that will reduce the water used and the practice that will reduce emission to environment. This research analysis using descriptive analysis. Based on the results, the terms used at each points on the level measure were “1” = strongly disagree, “2” = disagree, “3” = neither disagree nor agree, “4” agree and “5” = strongly agree were adopted. The result shows that respondent have a good level in green practice knowledge with score mean 4.00 and moderate level of implementation in green practice with average score mean 2.54 for five aspects listed. Daily practices that will reduce water use shows the quiet good implementation in Politeknik Kota Bharu with score mean 3.87. The daily practice that will reduce the generation of solid waste is at moderate level with score mean 2.82. Paper is the main office waste are generated in PKB. The result shows that waste of paper occured during the printing process. However, the aspects of daily practice that will reduce the emission and energy consumption are at low level. From the findings, recycling practice also do not implement properly by the staff.

Keywords: Green practice, Solid waste generation, Reduce Energy Consumption, Recycle, Reduce water use, Reduce Emission
1.0 INTRODUCTION

The word of Green Technology is relatively new. Having been adopted just over the last couple of decades, green is the way to go today. The green technology definition means the technology which is environmentally friendly, developed and used in such a way so that it doesn’t disturb our environment and conserves natural resources. Green technology also referred to as environmental technology and clean technology. In the stages of its development, the future only promises to bring bigger and better things for this field. It will in fact be a necessity of the future.

Green technology practice is the way will reduce pollution and improve the cleanliness as well. Today developed as well as developing countries are turning to green technology to secure the environment from negative impacts. Actually, Green Technology gives us an idea about the messing up of the environment due to human intrusion and the important need to slow down and adopting healthier ways towards life. By adopting green technology wisely, the earth can be protected against environmental pollution.

Sustainable building practices are the wave of the future. Going “green” is good for the environment and can be very good for our socio-economic. Nowadays, the demand for eco-friendly building practices is high and the people are willing to pay more to waste less. Going green is not as simple as using a few green products in the places that you build but it will look at the entire project which including integrate the various sustainable options to provide a full green package.

The impact of our daily activities on the environment and the desire to go green has expanded form just individuals to organizations (Shweta and Dr. Vivek, 2018). Some of organizations were volunteered to operate in a more environmentally responsible way on their buildings. In the future, “going green” could be normal practices not only at homes but also in workplace to increase the good health for the employees. Henricks, Mark. (2008) in Shweta and Dr. Vivek (2018), wrote an article about how green practices implementation can cut down global warming.

2.0 PROBLEM STATEMENT

Humans impact the environment in several ways. Common effects include decreased water quality, increased pollution and greenhouse gas emissions, depletion of natural resources and contribution to global climate change. Some of these are the direct result of human activities, whereas others are secondary effects that are part of a series of actions and reactions.

3.0 OBJECTIVE

- To know the level of knowledge in green practice among the PKB staff
- To know the level of implementation in green practices among the PKB staff
4.0 RESEARCH SCOPE

This study focuses on the green practice that was practiced at the office. The respondents were among the Politeknik Kota Bharu staff.

5.0 IMPORTANCE OF STUDY

This study was conducted to expose the importance of green practices among PKB staff. This study is the early step in applying the concept of green practice in everyday life especially at offices and general at homes. In addition, this study hope will be a step in preserving and conserving the environment.

6.0 LITERATURE REVIEW

6.1 Definition of Green Technology

Environmental technology, green technology or clean technology is the application of one or more of environmental science, green chemistry, environmental monitoring and electronic devices to monitor, model and conserve the natural environment and resources, and to curb the negative impacts of human involvement.

6.2 Definition of Green Initiative

The Green Initiative has as its main objective the offsetting of Greenhouse gases emitted by human activities that can range from complex industrial production processes to simply driving a car, with reforestation projects in riparian areas that need to be recovered. The trees planted will absorb carbon dioxide from the atmosphere and provide, as well as environmental benefits, such as water and air quality preservation, and biodiversity protection.

6.3 Sustainability of building

Sustainability can be defined as an ability to carry forward, support, or maintain a practice or situation for a prolonged period of time, approaching perpetuity. When this concept is applied to the built environment, it can be viewed in the context of “green” or environmentally sensitive and conscious design and construction practices. Sustainable practices specifically consider a building project’s long term impact on the environment. Buildings are consuming significant amount of the world’s energy.

6.4 Green Practice in Workplace


6.4.1 Recycling
United States Environmental Production Agencies (EPA) defined recycling is the process of collecting and processing materials that would otherwise be thrown away as trash and turning them into new products. It is an alternative to "conventional" waste disposal that can save material and help lower greenhouse gas emissions. Recycling is a key component of modern waste reduction and is the third component of the "Reduce, Reuse, and Recycle" waste hierarchy.

6.4.2 Energy Conservation

The lighting in the workplace is very important but involves the use of electrical energy that a lot throughout the period of working hours. This does not include the use of other electrical appliances. To achieve the use of sustainable energy, efficiency of energy consumption very needed in workplace. Efficiency energy use for building systems could be achieved by implementing green technology concepts. Efficiency is not the main factor in reducing energy consumption. While it seems only logical that rising efficiencies will result in reduction in demand, the truth seems to be that increasing efficiency actually increases demand. The only way that consumption will ever be reduced is by raising the price of energy used. Because efficiency gains result in increased energy consumption, it’s up to the government to tax consumption to the point where people use less energy.

6.4.3 Water Consumption

Usually the most significant savings for a green building associated with water efficiency results from reduced energy costs. By reducing the amount of water that must be treated, cooled / heated, and distributed reduce the amount of energy needed to perform these task which in turn reduces costs. There are many studies that showed up to 15% of a commercial building’s energy consumption comes from water heating.

6.5 Sustainability Initiatives In The Workplace

Megan (2009) said that much research has been done to demonstrate that workplace productivity is influenced by the work environment itself. Since the cost of labor can be a significant portion of an organization’s expenditures, it makes sense to make efforts that will maximize workforce productivity and minimize absences. One potential way to do so is to incorporate sustainability initiatives in order to not only lessen the negative environmental impact of operations, but also to enhance the atmosphere and wellbeing for the building occupants (Megan, 2009).

7.0 RESEARCH METHODOLOGY

There are two method to be consider in this research. There are observation and questionnaires.

8.0 POPULATION AND SAMPLING PROCEDURE

For the purpose of this research project, the target population consist all the PKB Staff. For the sampling, every department become a respondent. There are 50 respondents were monitored and given a questionnaires. The respondents consist the lecturers, supporters staff and technician.
9.0 QUESTIONNAIRE DESIGN

For the purpose of this research, questionnaires are divided into 2 categories:
- Part A is a knowledge of green or daily practice among the PKB staff.
- Part B is a implementation of green or daily practice among the PKB staff.

10.0 DATA PROCESSING AND ANALYSIS

Complete questionnaire were inspected and edited, and the data were transferred to SPSS spreadsheet. The data were analysed by SPSS statistical software package. The techniques used during the data analysis stage of the research project include descriptive statistics. The data are analyzed and categorizes based on the performance indicator and the level of tendency are shown in Table 1 below. Table 2 show the analysis method for each category list in questionnaire.

Table 1: Performance Indicator and Level of Tendency Based on Score Mean Value

<table>
<thead>
<tr>
<th>Score Mean</th>
<th>Performance Indicator</th>
<th>Level of Tendency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00 – 2.33</td>
<td>Not Agree</td>
<td>Low</td>
</tr>
<tr>
<td>2.34 – 3.66</td>
<td>Neutral</td>
<td>Moderate</td>
</tr>
<tr>
<td>3.67 – 5.00</td>
<td>Agree</td>
<td>High</td>
</tr>
</tbody>
</table>

(Source: Mohd Najib, 2003)

Table 2: Analysis Method for Each Category

<table>
<thead>
<tr>
<th>Category</th>
<th>Item</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part A</td>
<td>Knowledge of green practice</td>
<td>Score Mean</td>
</tr>
<tr>
<td>Part B</td>
<td>Implementation of green practice</td>
<td>Score Mean</td>
</tr>
</tbody>
</table>

11.0 FINDINGS

11.1 Level of Knowledge in Green Practices among PKB Staff

Table 3 : Score Mean For Level of Knowledge in Green Practice Among PKB Staff

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Score Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Green practice is a good practice to protect the environment</td>
<td>4.40</td>
</tr>
<tr>
<td>2</td>
<td>Greenhouse gas will affect the global warming</td>
<td>4.00</td>
</tr>
<tr>
<td>3</td>
<td>Global warming happens caused of depletion of the ozone layer</td>
<td>3.94</td>
</tr>
<tr>
<td>4</td>
<td>Human activities will contribute to the increase of greenhouse gases and the depletion of ozone layer</td>
<td>4.0</td>
</tr>
<tr>
<td>5</td>
<td>Green practice is an alternative introduced by the government to get the solution of weather change phenomenon</td>
<td>4.0</td>
</tr>
<tr>
<td>6</td>
<td>We are responsible to make our earth &quot;a better place to live in&quot;</td>
<td>4.1</td>
</tr>
<tr>
<td>7</td>
<td>Green Technology is to conserve our environment</td>
<td>4.1</td>
</tr>
</tbody>
</table>
8 Carbon dioxide is the largest contributor to greenhouse effect 3.88
9 Natural disasters such as hurricanes, ice melts in the North and South Pole, rising sea levels and temperatures, extinction of flora and fauna are the effects of global weather phenomenon 4.42
10 We as a consumer are the largest contributors in greenhouse gas emissions through our daily activities 4.00
11 Daily activities that contribute to global climate change is fuel combustion from vehicles, electricity, chemicals use such as insecticides, chemical fertilizer and others 4.06
12 Green practice will contribute to improve the quality of human life and environment 4.00
13 Air pollution, water pollution, noise pollution and so on will affect the quality of life and environment 3.44
14 We should practice green practices as possible as we can do 4.10
15 Lifestyle and mind changes will move towards for awareness and practicing of green technology 3.56
16 The small changes that we make will give a good impact in the future 4.04

Average Score Mean 4.01

11.2 Level of Green Practice Implementation among PKB Staff

11.2.1 Green Practices That Will Reduce The Energy Consumption

Table 4: Score Mean For Green Practice That Will Reduce Energy Consumption

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>ScoreMean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I do not switch on the computer system until I really need it</td>
<td>3.56</td>
</tr>
<tr>
<td>2</td>
<td>I always switch off my PC system whenever I plan to be away from my desk</td>
<td>3.12</td>
</tr>
<tr>
<td>3</td>
<td>I always switch off the printers at the end of the work day</td>
<td>2.00</td>
</tr>
<tr>
<td>4</td>
<td>I always switch off the lights if I was the last one out of my office</td>
<td>2.12</td>
</tr>
<tr>
<td>5</td>
<td>I always open the window to get natural lights for indoor lighting</td>
<td>1.56</td>
</tr>
<tr>
<td>6</td>
<td>I always turn off the lights every time I leave my office</td>
<td>1.00</td>
</tr>
<tr>
<td>7</td>
<td>I do not leave the refrigerators door open</td>
<td>2.76</td>
</tr>
</tbody>
</table>

Average Score Mean 2.30

11.2.2 Green Practices That Will Reduce The Solid Waste Generation

Table 5: Score Mean For Green Practice That Will Reduce Solid Waste

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>ScoreMean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I always choose an email whenever possible to send any document</td>
<td>4.60</td>
</tr>
<tr>
<td>2</td>
<td>I always keep mailing lists up-to-date</td>
<td>4.00</td>
</tr>
<tr>
<td>3</td>
<td>I always use paper already printed on one side for notepaper</td>
<td>2.30</td>
</tr>
<tr>
<td>4</td>
<td>I ensure use prints preview to check the document before printing</td>
<td>1.60</td>
</tr>
</tbody>
</table>
I always print or copy on both sides of paper 2.00
I’ll make sure to print a draft with single-sided waste paper 1.78
I only make a copies that i really need 2.96
I used a smaller font size especially for draft 1.04
I always recycle as many types of material as much as possible 2.00
I do not use non-disposable plate, glass and other utensil in my office 3.00
I always use my own mug 4.60
I choose paper bag to pack my own good at the office 4.00

Average Score Mean 2.82

11.2.3 Recycling Practices Among the Politeknik Kota Bharu Staff

Table 6: Score Mean For Recycle Practices Among PKB Staff

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Score Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I used recycle dustbin at my office</td>
<td>1.00</td>
</tr>
<tr>
<td>2</td>
<td>I always recycle the office paper and other paper products</td>
<td>2.90</td>
</tr>
<tr>
<td>3</td>
<td>I always buy a product mades on recycle materials</td>
<td>2.10</td>
</tr>
</tbody>
</table>

Average Score Mean 2.00

11.2.4 Green Practices That Will Reduce The Water Use

Table 7 : Score Mean For Green Practice That Will Reduce Water Use

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Score Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I don’t let the water run while i wash my hand</td>
<td>4.70</td>
</tr>
<tr>
<td>2</td>
<td>I don’t use much water for wudhu</td>
<td>3.74</td>
</tr>
<tr>
<td>3</td>
<td>I only turn on the faucet when needed</td>
<td>4.26</td>
</tr>
<tr>
<td>4</td>
<td>I always notify building maintenance if I find a leak</td>
<td>2.76</td>
</tr>
</tbody>
</table>

Average Score Mean 3.87

11.2.5 Green Practices That Will Reduce The Emission To Environment

Table 8 : Score Mean For Green Practice That Will Reduce The Emission

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Score Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I take a public transportation to work</td>
<td>1.00</td>
</tr>
<tr>
<td>2</td>
<td>I choose to walk around the campus to class, laboratory, library and canteen</td>
<td>2.60</td>
</tr>
<tr>
<td>3</td>
<td>I ride a bike around the campus to class, laboratory, library and canteen</td>
<td>1.04</td>
</tr>
<tr>
<td>4</td>
<td>I do not switch on the engine of vehicles in parking or waiting area</td>
<td>2.64</td>
</tr>
</tbody>
</table>

Average Score Mean 1.67

12.0 DISCUSSION
12.1 Knowledge Level of Green Practices among PKB Staff

The analysis finds the mean score of green practice knowledge among the staff of PKB. From the literature study, several items such as the benefit of green practice, effects of daily activities, human responsibility of environmental protection, lifestyle and so on are brought to this part. First, it was assume that the level of knowledge in green practice among the staff in a moderate or low level. But from the findings, staffs have a good knowledge of green practice at office with the average score mean of 4.00. This is due to staffs’ awareness to the current information from media such as television and internet. From the observation, there are a lot of campaigns to save our environment especially in internet. The construction of a green building is a good example for sustainable development that provides the best practice in implementing of green practices to Malaysian citizens. Hence, PKB also has conduct awareness campaigns and programs regarding to the green practices that need to be practiced to ensure the well-being of the organization.

Table 3 shows the mean score of green practices knowledge among the PKB staff. Data were analysing by SPSS using the descriptive analysis. From the data analysis, the level of knowledge show the score mean 4.00. This is mean, the knowledge of residents may be due to social media such as television, internet, newspaper and the changes that have been introduces in public to ensure the greening lifestyle in Malaysia. Hence, PKB is one of organization that always conducts courses, seminars and programs related to awareness of green practices in everyday life, especially the responsibilities as civil servant in the organization. This is the effort to prevent staff from living habit and development that ignores the environment and human health. It shows positive changes because the green practice approach is still new in our country. Based on the item in questionnaires, the respondents have awareness that the lifestyle is a main contributor to environmental pollution. As a human, the responsibility for supporting green practices is to ensure the well-being of the environment. Actually, the transition in our country to a green society is happening too slowly in many aspects especially a daily practice in commercial building, like office, factory and so on.

12.2 Practices Level of Green Practices Among The PKB Staff

12.2.1 Green Practices That Will Reduce The Energy Consumption

Based on data analysis, green practice implementation among the staff in PKB is divided into five categories. The first category is daily activities that can reduce energy consumption. There are 7 items list in the questionnaires including the daily lifestyle and activities that will reduce the energy consumption. The item that gives the high level is related to the use of computers. They only switch on the computer until they really need it. Hence, they always switch off the computer over lunch whenever they plan to be away from their desk. This is because the provided computer has been set in sleep mode after a few minutes is not in used. The sleep modes settings are also set to printers are provided. While the other items are in low level which is relate to the lighting use for indoor lighting. Majority of the staff do not practice to switch off the lights when leaving the office if they were the last one out of the office, unless at the end of office hour. From the observation, they let the lights on even though no one was in the office. The situation will cause the waste of electricity and energy because they
use a lot of energy for lighting inside the buildings due to the rooms’ space. The building also does not use natural light for indoor lighting.

From the data analysis, it shows that they have never opened the windows to get natural light for indoor lighting, although for a small space like meeting room. From the observation, they switch on the lights from 7.30am to 5.00pm or until all staff getting out of the building. From the interview session, they did not open the blinds or window because of the extra lighting from the sunshine will affect the indoor temperature. The indoor temperature will be higher. Therefore, it will increase the power of air conditioning system to stabilize the temperature in the room. The use of sunlight as an indoor lighting is one of the key elements of a green building. The whole buildings at PKB are conventional buildings. Because of that, some aspects such as building orientation, the types of glass mirrors that will control the amount of lighting are not considered during the design stage. This is the reason why the sunlight is not used as indoor lighting in PKB. An adequate indoor lighting is important to ensure the comfortably and effectiveness. Therefore, some initiatives should be taken to address this problem. Inefficient energy consumption is one of the causes of environmental pollution, so that we always exposed about energy saving for many times and everywhere we are. Among the steps that can be taken is installing the glass tinted which can control amount of natural light into a building, which limits the heat penetration into the building, as an energy saving of electricity consumption. To make the office more energy efficient, reduce or replace inefficient, out dated or excessive lighting within the building, replacing old lighting equipment with new the technologies equipment with energy saving and imposing fines or summons to those who waste energy such as not switch off the computer and plugging off when leaving the office.

12.2.2 Green Practices That Will Reduce The Solid Waste Generation

The second category is green practice that will reduce the solid waste generation. There are eleven item lists in the questionnaire including the daily lifestyle and activities that will reduce the generation of solid waste. It was found that the average score mean for daily practices that will reduce the generation of solid waste is 2.82. As we can see this value is not as good as expected. The high levels of score mean are related to the use of email for sending any documents such as letters, memos and so on. Majority of the staff use an email as a medium of communication in PKB. They always keep mailing lists up to date. This is a one of green practice that was implemented in PKB to reduce the use of paper. All letters or memos related to a meeting or course call are via email. However, there are still use letters by printing but for certain circumstances such as for claims and some official business that needs to be documented. They also use their own glass mug and non-disposable plate, glass and other utensil at the office. They only used the disposable plate, glass and other utensil for certain events or occasions which involves many invitations. But some of them are choose to use the disposable plate and glass because of water saving, but they forget that it will increase the generation of solid waste. For daily use, the organization has provided a non-disposable glass, plate and other utensils. The PKB also regularly conducts campaigns to reduce the use of polystyrene materials and encourage staff to use disposable materials from natural and recycle materials. The other items listed in this category are in low and moderate level score mean which is related to paper printing. Majority of staff take for granted when printing a draft document. They were ignoring the aspects of paper saving during the printing process. Some of them did not use paper already printed on one side for
notepaper or draft. They also not preview to check the document on the screen before printing. By using a small font is one of the paper saving tips that we have to do, but just a few of them used a smaller font size especially for draft. Hence, they have to make sure to print a draft with single-sided waste paper for more saving. However, a few of staff have printed the things that not supposed to be like unauthorized documents of employment and so on. It should not to be happen and must be avoided. Staff should have their own consciousness to care for and protect the property and the right of the government, because it is not a private property. Action should be taken to prevent this bad attitude among the staff. To reduce the generation of solid waste in the office, especially waste of paper, the authorities can limit the use of paper for a period. Additionally, imposing fine to who has printing a private material is one a good action should be taken. For innovation, it can also create a printer that can record the printed material and the owners make sure everyone uses the printer to the right things.

12.2.3 Recycling Practices Among the Politeknik Kota Bharu Staff

The third category is recycling practice among the staff in PKB. The average score mean of recycle practice is 2.00 which is at low level. Just a few of them always recycle as many types of material as much as possible. They do not recycle the office paper and other paper product unless during the “gotong-royong” activities. Usually, they just put the waste paper on the dustbin. PKB only provide the recycle dustbin at a public area, such as academic building, cafeteria, hostel and so on. Only some of them use the recycle dustbin as much as possible. To improve the recycle practices among the staff, PKB should provide a mini recycle dustbin inside the building, especially in all department or room staff and classroom. This will encourage the staff and students to practice the recycle as continuous practices wherever they are. Items from recyclable material are still new among the PKB staff. Therefore, the levels of recycling practice among the PKB staff are still at a low level. However, PKB staff always practice a reuse concept in daily activities. Each department is required to have a green corner. From the observation, all departments make a corner as place to store the binding strips and plastic cover of assignment sent by students. The binding strips and plastic cover will be removed and collected for resale to students at lower price. The proceeds are used for other green corner activities in their departments.

11.2.4 Green Practices That Will Reduce The Water Use

The fourth category is the daily activities that will reduce the water use. The average score mean for this category is 3.87 at a high level. Staff always concern with the water usage. They do not let the water run while they wash hands and do not used much water for wudhu’. They only turn on the faucet when needed only. However, in maintenance aspect, the score mean is quiet low compare to other item listed. Staffs always notify the building maintenance crew if they find any leak problems. But, sometimes the maintenance crew take a slow action. It will cause the water wastage. This should not to be happen because the leakage problems not only will cause the water wastage, but will affect the indoor air quality. This study shows that the implementation of daily practice to reduce water wastage is quite good. However, to improve the efficiency of water use and reduce water wastage, several steps may be taken. Tips for water saving in workplace are to being smart with way to use water because it makes great sense regardless of the amount of water use. Look for water leaks in fitting and use a water meter or flow restrictor where possible. Report the leaking taps, toilets and showers
immediately. Maintenance crew is those who need to expedite the action. Even a slowly dripping tap can waste 10,000 litres of water over a year. Then, replace single-flush toilets with dual flush toilets because most of the toilets in PKB are still use single-flush system. Regularly check for leaks and fix immediately.

11.2.5 Green Practices That Will Reduce The Emission To Environment

The last category is the daily activities that will reduce emission to environment. The average score mean is 1.69 and it shows that it still in low level. There are four listed item in this category related to daily practice that will produce emission to environment. No one of the respondent take a public transport to work because every staff needs their own vehicles while in campus to move from place to place. Only a few of them ride a bike around the campus to the class, laboratory, library and canteen and so on. Weather is one of the factors that prevent the bikers. Some of the staff chooses to walk around the campus to class, laboratory, library, canteen and so on. This is a good practice among the PKB staff. But some of them choose to use their own vehicle to go to anywhere in campus due to the hot weather and sweating which cause the discomfort. In reality, emission from the vehicles engine burning will affect the quality of environment. Air pollution is the current issues which cause the depletion of ozone layer. The habits of do not switch off the engine of vehicles in parking or waiting area is a common situation in PKB. They do not switch off the engine of vehicles while they stop their vehicles for thumbprint, waiting for class, waiting for food order, waiting for friends and others. Running the engine unnecessarily while vehicle is stationary pollutes the environment. An idling engine can produce up to twice as many exhaust emissions as an engine in motion. Exhaust emission contains a range of air pollutants such as carbon monoxide, nitrogen dioxide and particulate matter. These can affect the air quality of the surrounding environment and the air we breathe. By turning off the engine will improve air quality, reduce fuels cost and comply with the law. Several actions can be taken to minimize the problem. Carpool with friend instead of driving alone, drive efficiently and vehicle maintenance. Authorities need to intensify the awareness of the dangers of vehicles emission and promote healthy living by walking on campus. In addition, PKB may also restrict or ban the use of vehicles within the campus at certain times, for example in the morning between 8 am until 10 am.

12.0 CONCLUSION

For the conclusion, the average score mean for level of knowledge in green practice among the PKB staff is 4.00. This value shows that the knowledge about the green practice is quiet good among the staff. Green practice awareness and changing attitudes towards green consumption are becoming evident in community and country development. Today, we are a generation that will be ultimately in charge of ensuring the planets survival. Providing environmental education and awareness to the future generation can ensure conserving, preserving and sustaining the environment. With the knowledge and awareness, it that can be a starting point for a practice that can lead to the well-being of the nation. The average of score mean for green practice implementation among the PKB staff is 2.54. It shows that the level for implementation in green practice among the PKB staff in moderate level. This situation shows that the green practice level among the PKB staff needs a required improvement. Compared to
the high level of knowledge and awareness among the PKB staff, this situation should not be happened. Additionally, most of them are among the lecturers and the person who is responsible to show good manners to students. From the findings, there are three aspect of daily practice at low levels. The first aspect is the green practice that will reduce the emissions to the environment. It is aimed to the use of vehicles in campus area. The second lowest aspect is the recycling practice, involves the use of recyclable materials and recycling practices. The third lowest aspect is the daily practice that can reduce energy consumption. Energy consumption in this study is specific to the use of electricity especially for indoor lighting. However, the practice that contributes to solid waste generation is at moderate level. Paper is the main office waste PKB. Overall, the level of green practice in PKB needs to take action seriously.

13.0 RECOMMENDATION

- This study should take the awareness factor as a variables to the importances of green practices in our society
- Some variables need to be taken as a factor affected the implementation of green practice in our society
- This study need to use the observation and field study methods to get more precisely data and result

14.0 ACKNOWLEDGEMENT

We thank our family and members who provided insight and expertise that greatly assisted the research, although they may not agree with all of the interpretations/conclusions of this paper.

15.0 REFERENCES

FACTORS INFLUENCE ON ACCOMMODATION SELECTION AMONG GUEST IN KELANTAN

Amelia Binti Ahmad, Nor Hasniyah Binti Fadzilah Suhaimi, Nuur Shafiqah Binti Ahmad, Siti Khadijah Binti Khalid, Fadhilahanim Aryani Binti Abdullah

Universiti Malaysia Kelantan

Abstract

Accommodation is determined by the type of accommodation, the space and also the nature or environment of accommodation. Uncomfortable premises and unprepared room will lead to negative impact of accommodation selection among tourist. Guests are really cares about the quality of service which refers to the brand of the place. Thus, the aim of this is to identify the factors that influence accommodation selection among Kelantan guest. In this study the researchers will focus on service quality, attraction, facilities, environment, and price towards customer orientation on accommodation selection. An online survey will be conducted among 384 people who had been visit Kelantan. The methodology of this research are using simple random sampling technique and all the data will be analysed by using the SPSS software.

Keywords: Tourist satisfaction, accommodation selection, customer orientation, facility, service quality, environment, price.

Introduction

Tourism industry is one of the sectors that contribute to the GDP of Malaysia. Malaysia is one of the most that become a tourist destination (Alissa & Abd Al Khuja, 2014). Malaysia had received 25.7million tourist in 2015 and it has increase to 26.8million in 2016 (Tourism Malaysia, 2017) Tourism is a temporary movement of people to a destination outside their normal place of work and residence. The activities and facilities that provided are to fulfil their needs (Mathieson and Wall, 1982). When traveling, the guest needs a place to stay and rest so that they needs an accommodation. In order to make decision for selecting an accommodation, the guest will consider a few things such as the facilities that provide, service quality, attraction, price and the environment of the place. The accommodation selection will be made based on their needs and preferences.

The aim of this paper is to identify the factors that influence accommodation selection among Kelantan guest. There are several questions that held to answer in this research; i.e what is the factors that influence accommodation selection among the guest? What is the most influence factor in accommodation selection among the guest? What is the relationship between the factor influences with accommodation selection among Kelantan guest?

The objective of this paper is to identify the factors that influence accommodation selection among the guest, to identify the most influence factor in accommodation selection among the guest and to identify the relationship between the factor influences with accommodation selection among Kelantan guest. So, this paper
will give benefits to the person who are involve directly or indirectly in providing accommodation such as accommodation operator, guest, academia and government.

2 Literature Review

2.1 Overview of Accommodation

Accommodation is determined by the type of accommodation, the space and also the nature or environment of accommodation. It will relate with the value and volume of tourism at any place or destination (Henning & Willemse, 1999; Nuntsu, Tassiopoulos & Haydam, 2003). The sector of accommodation providing lodging and other services to the guests and it became a spine of hospitality industry (Jones, 2002). There are several types of accommodation classified whether the accommodation is under commercial, non-commercial and alternative accommodation (Sharpley, 2006). Then, commercial homes give a short-term basis to the guests who lodging. It refers to the place that guests willing to pay and act the place as their home and they can use private room with a host that usually living on the place (Stringer, 1981; Lynch, 2005; Lynch, McIntosh, & Tucker, 2009; McIntosh, Lynch and Sweeney, 2010). Hotel is an operation that running is intended to provide the accommodation and other services to the people that stay at their place (Jones & Lockwood, 2002). The services and facilities that provide is based on what kind of hotel that they choose to stay (Beech & Chadwick 2006, 380). The concept that established in homestay is to give the experience toward guest that willing to study the traditional life and how the guest adapt the routine or daily lives into host families (Zurina Nureen Noor & Nur Adilah as quoted in Mapjabil & Che Ismail, 2012). The resorts run the concepts that give a high quality accommodation towards guest, recreational facilities and the best service of quality (Gee, 1996).

2.2 Customer Orientation of Accommodation

A customer-oriented is one that seeks to understanding the needs of guests, both expressed and latent of its guests in order to more effectively respond to those needs (Slater and Narver 1999). When the employees totally satisfied guests at any level, loyal and act, accordingly it will lead to the loyalty of guests to the certain destination (Heskett, 1997). According to the Ruekert (1992:228) customer orientation is important in order to implement all the need and want of guests at a strategic ways and from them also they know about the accommodation obtains and uses information from the guests to develop a best services. It same goes to the guests' loyalty in industry when guests repeat to visit the same place, stay longer and also recommend that place to other people will drive it to the competitive market (Yoon & Uysal, 2005).

3 Conceptual Framework

Facilities

Malaysian offers a variety of uniqueness in homestay, resort and hotel that distinguish with other accommodation that have in country. The quality of service and facilities available will meet customer needs and wants. For example, indoor pool, gymnasium, private room, spacious room and common area. People nowadays love thing that give benefit to them even they need to pay for it (Chou, Hsu & Chen 2008;
People will choose an accommodation that provided full safety to them. For example, the safety facilities include electronic key cards and fire exits.

**Services Quality**

Services quality that provide will lead to the guest satisfaction, increasing the intention to repeat the same accommodation and encourages the employees to know the orientation of guest's needed. According to the Parasuraman et al. (1988) the evaluation of service quality is important component between the qualities of personal interactions with the employees. The previous study mentioned that, the service quality is related with some dimensions. There are reliability, responsiveness, understanding and know about the guests. Each of the accommodation has their own service that provided to the guests.

**Attraction**

A good attraction very important to guests to choosing a place they want to stay. Unique character; a sense of familiarity with accommodation, value added natural environment and whether the cultural traditional of the hosts are appealing can attract customer to stay at there. It will make customer satisfy when they choosing accommodation. According Teong-Jin, Ling and Fern (2016), state that the uniqueness, character, and individuality of the physical surrounding, natural setting, environment and package provided a part from more old-fashioned forms of accommodation.

**Environment**

The environment is the main reason visitors choose the destination that displays the environment completely (Haarhoff & Gany, 2017). Environment can include cleanliness, safety, accessibilities, friendly and others. Cleanliness, privacy and service mind also top criteria in kind upon guests to choosing accommodation. Safety environment especially the structure of establish very important for guests choose the place. Guests also will satisfy when they do a different activity around the place they stay but still related with real lifestyles including nice decoration as a theme, appealing to them who love to take photos. It shows that wonderful and varied views can attract both major guests and a person who cares about personal image.

**Price**

Prices are defined as' the summation of all costs made by a consumer in order to involvement the benefits of a product and service (Abdul Raji & Zainal, 2016). Customers will be satisfied when they get accommodation at a price appropriate to the payment. Each guest will compare the price of each existing accommodation based on their budget savings. Guest will be satisfied when the price of accommodation that provide meet with their satisfaction. So, even the accommodation is expensive the guest still willing to stay because they feel it is worth it and reasonable. According to Haarhoff & Gany (2017), the guest satisfaction will be judged on the basis of guest expectation towards the product or service at the level of temporary satisfaction. The perceived value can affect guest satisfaction. The market price of accommodation can be the predictor for customer satisfaction.
This framework is taken from several journals related to the factor of guest selection in the selection of accommodation. For dependent variables, it is available from several journals that see customer expectation and accommodation (Slater and Narve, 1999).

4 Methodology

In this research, the researcher decided to practice the quantitative research method. The quantitative method is the most suitable research medium to be used in gathering data to fulfil the objective of this research. The target population of this study is Kelantan Tourist. Based on statistics from Ministry of Tourism and Culture Malaysia on news article, Utusan (2017, Februari 28) the tourist arrival in Kelantan in 2017 was 5.8 million tourist. According to Krecjie & Morgan (1970) a total of 384 respondents is considered appropriate for this research as the total number of population is more than 1,000,000 people. The instrument that will be used in this research is online survey questionnaire. There will be three parts in the questionnaire which the first part is on demographic profile, second part is for dependent variables which the customer orientation on accommodation selection and the last part is for independent variables which is service quality, environment, price, attraction, and facilities. Before the questionnaire is finalized, a pilot test will be carried out in purpose to rephrase some questions that are difficult to understand by the respondent. A total of 30 respondents are select for the pilot test. When the data have been collected, all the data will be analysed carefully by the researcher to achieve a good result. The researcher will
conducted three types of data analysis which include reliability analysis, descriptive analysis, and regression analysis. All the data will be analysed by using the SPSS software (Statistical Package for the Social Science).

5 Conclusion

Tourism industry is one of the sectors that contribute to the GDP of Malaysia. The activities and facilities provided are to fulfill their needs (Mathieson and Wall, 1982). When traveling, the guest needs a place to stay and rest so that they need an accommodation. In order to make decisions for selecting an accommodation, the guest will consider a few things such as the facilities that provide, service quality, attraction, price and the environment of the place. The accommodation selection will be made based on their needs and preferences. What is the most influence factor in accommodation selection among the guest? What is the relationship between the factor influences with accommodation selection among Kelantan guest? The objective of this paper is to identify the factors that influence accommodation selection among the guest, to identify the most influence factor in accommodation selection among the guest and to identify the relationship between the factor influences with accommodation selection among Kelantan guest. So, this paper will give benefits to the person who are involve directly or indirectly in providing accommodation such as accommodation operator, guest, academia and government.

6 References


Tourism Malaysia. (2017). Malaysia’s 2016 tourist arrivals grow 4.0%.


