UNIVERSITI PUTRA MALAYSIA

FACTORS AFFECTING ICT USAGE FOR THE DEVELOPMENT OF SMALL AND MEDIUM AGRO-BASED ENTERPRISES IN SELANGOR, MALAYSIA

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IBRAHIM ADAMKOLO MOHAMMED

Thesis submitted to the School of Graduate Studies, Universiti Putra Malaysia, in fulfillment of the Requirements for the the Degree of Master of Science

May 2017

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DEDICATION

This thesis is dedicated to my dear mother, Malama Sa'adatu 'Yar-Mallam Ibrahim Jinjiri, my dear father, the Late Mallam Ibrahim Alhaji Jinjiri (may Allah bestow rahmah on him), my dear guardians, the Late Baba Adamkolo Snr. (may Allah bestow rahmah on him) and Malama Amina Goniram, my dear wife, Amina Adamkolo, my dear children, Khaleel and Hauwa and my dear Supervisor, Prof. Dr. Md. Salleh Hj. Hassan.

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Master of Science

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May 2017

Chairman : Professor Md. Salleh Hj. Hassan, PhD
Faculty : Modern Languages and Communication

Information and communication technology (ICT) has been identified as a mean that has great potential to spur innovative development in small and medium-scale enterprises (SME). This study adopted the Unified Theory of Acceptance and Use of Technology (UTAUT) model perspective to investigate factors affecting ICT usage by agro-based SMEs in Selangor. This study aimed to achieve four specific objectives as follows: to identify the ICTs predominantly used by the agro-based SMEs in their businesses; to determine the factors that affect ICT usage among the agro-based SMEs; to determine the relationship between performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), SME organisational size (SOS) and managerial creativity and innovativeness (MC&I) and ICT usage (IU); and to determine the moderating effect of gender, age and experience on the relationship between PE, EE, SI, FC, SOS and MC&I and IU.

The UTAUT Model was adopted with some modifications by integrating two externally derived constructs, SME managerial creativity and SME organisational size as predictors. Furthermore, the behavioural intention dimension, which is also theorized to predict direct ICT usage, was dropped because many past studies have supported the claim that when a behavior becomes routine, it translates to habit, which is tantamount to automaticity. The moderation influence of only gender, age and experience was investigated as voluntariness of use was also dropped for convenience reasons. A questionnaire containing 132 items was administered to 400 workers (including managers). The workers were selected using purposive sampling from 43 agro-based SMEs in Selangor.

After data collection, 395 completed questionnaires were retrieved successfully. The data was analysed using Statistical Package for Social Sciences (SPSS) version 22 and Structural Equation Model -Analysis of Moment Structure (SEM-AMOS) statistical software. The descriptive data and multiple regression analyses were performed using SPSS while factor analysis was performed using SEM-AMOS. SEM-AMOS was mainly used to test the hypotheses and determine the statistical fitness, or statistical strength of the new research model (also known as the structural model of this study), which was designed using SEM-AMOS to measure the research data adequately.

To determine the statistical significance of each of the six predictors and their respective measurement items in the conceptual framework, principle component analysis (PCA) was ran. At PCA, social influence (SI) construct loaded with very weak items, which indicates that the construct was statistically non-significant, and if it was retained it would affect the statistical significance of the conceptual framework negatively, hence it was eliminated from the research framework as recommended in statistics rules. Thus, only five valid constructs remain in the conceptual framework of this study, namely performance expectancy, (PE), effort expectancy (EE), facilitating conditions (FC), managerial creativity and innovativeness (MC&I), SME organisational size (SOS) and ICT usage (IU). Furthermore, to confirm the statistical significance of each of the five remaining predictors with their respective measurement items, confirmatory factor analysis (CFA) was ran. CFA reduced the number of measurement items in each of the constructs to only three except for ICT usage construct, which was reduced to nine items. All the measurement items in the entire research scale recorded very high internal consistency reliability (Cronbach alpha) coefficient, ranging from 0.951 to 0.842, with a good overall model fit index (RMSEA) value = .79, indicating that the structural model was sufficiently fit to measure the data and yield valid results.

The study found that performance expectancy, SME organisational size and SME managerial creativity and innovativeness significantly predicted ICT usage. In addition, age, gender and experience moderated the relationships at various levels of significance. Importantly however, performance expectancy was moderated by experience, which implies that agro-based SMEs that are run by employees and managers with prior ICT usage experience stand better chances of deriving much benefits from using ICT in their businesses. The structural (measurement) model predicted 31% (R^2 0.31) of the variances associated with ICT usage. Therefore, the study concludes as follows. (1) That the anticipation of ICT usage benefits, enterprise organisational size and characteristics of enterprise managers, moderated by the workers' demographic characteristics and ICT usage experience are the critical factors that affect the usage of ICT by agro-based SMEs in Selangor; (2) gender, age and experience of the workers (as well as those of the managers) can influence ICT usage by agro-based SMEs in Selangor; and that (3) female employees using ICTs are more likely to perform work better and yield higher gains than their male counterparts may be able to do. Therefore, this study suggests that a paradigm shift from a male-dominated industrial ICT usage bias towards a female-dominated one may be imminent, at least in Selangor context.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi sebahagian keperluan untuk Ijazah Master Sains

FAKTOR MEMPENGARUHI PENGGUNAAN ICT BAGI PEMBANGUNAN KEUSAHAWANAN KECIL DAN SEDERHANA BERASASKAN PERTANIAN DI SELANGOR, MALAYSIA

Oleh

IBRAHIM ADAMKOLO MOHAMMED

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Teknologi maklumat dan komunikasi (TMK/ICT) telah dikenal pasti sebagai perkara yang mempunyai potensi yang besar untuk memacu pembangunan inovatif dalam perusahaan kecil dan sederhana (PKS). Kajian ini diterima pakai dalam Teori Bersepadu Penerimaan dan Penggunaan Perspektif Technology (UTAUT) model untuk menyiasat faktor yang mempengaruhi penggunaan ICT oleh PKS asas tani di Selangor. Kajian ini bertujuan untuk mencapai empat objektif seperti berikut: untuk mengenal pasti penggunaan ICT terutamanya digunakan oleh PKS asas tani dalam perniagaan mereka; untuk menentukan faktor-faktor yang memberi kesan kepada penggunaan ICT di kalangan PKS asas tani; untuk menentukan hubungan antara jangkaan prestasi (PE), jangkaan pakar (EE), pengaruh sosial (SI), kemudahan keadaan (FC), saiz organisasi PKS (SOS) dan kreativiti pengurusan dan inovasi (MC & I) dan penggunaan ICT (IU); dan untuk mengenalpasti kesan jantina, umur dan pengalaman terhadap hubungan antara PE, EE, SI, FC, SOS dan MC&I dan IU.

Model UTAUT telah diterima pakai dengan sedikit pengubahsuaian dengan mengintegrasikan dua konstruk luar diperolehi, pengurusan kreativiti PKS dan saiz organisasi PKS sebagai peramal. Tambahan pula, dimensi tingkah laku niat, yang juga diteorikan untuk meramalkan penggunaan ICT secara langsung, digugurkan kerana banyak kajian lepas telah menyokong dakwaan bahawa apabila tingkah laku menjadi rutin, ia diterjemahkan kepada tabiat, yang adalah sama seperti automatik. Bagi pengaruh kesederhanaan hanya jantina, umur dan pengalaman telah dikaji kerana kesukarelaan penggunaan juga telah digugurkan atas sebab-sebab kemudahan. Satu set soal selidik yang mengandungi 132 item telah diedarkan kepada 400 pekerja (termasuk pengurus). Para pekerja telah dipilih dengan menggunakan persampelan bertujuan dari 43 PKS asas tani di Selangor.

Selepas pengumpulan data, 395 soal selidik yang lengkap telah diambil dengan jayanya. Data dianalisis menggunakan Statistical Package for Social Science (SPSS) versi 22 dan Structural Equation Model -Analysis Struktur Moment (SEM-AMOS) berstatistik. Data berbentuk deskriptif dan pelbagai analisis regresi telah dilakukan dengan menggunakan SPSS manakala analisis faktor dilakukan dengan menggunakan SEM-AMOS, untuk menguji hipotesis dan menentukan statistik, atau kekuatan statistik model penyelidikan baru (juga dikenali sebagai model struktur kajian ini), yang telah direka dengan menggunakan SEM-AMOS untuk mengukur data penyelidikan secukupnya.

Untuk menentukan kepentingan statistik setiap enam peramal dan barangan ukuran masing-masing dalam kerangka konseptual, analisis komponen prinsip (PCA) telah digunapakai. Pada PCA, pengaruh sosial (SI) telah menunjukkan item yang sangat lemah, di mana konstruk secara statistik tidak signifikan, dan jika ia dikekalkan ia akan menjejaskan kepentingan statistikk rangka kerja konsep negatif, oleh itu ia telah dihapuskan dari penyelidikan rangka kerja seperti yang disyorkan dalam peraturan statistik. Oleh itu, hanya lima konstruk sah kekal dalam kerangka konseptual kajian ini, iaitu jangka prestasi (PE), jangkaan usaha (EE), kondisi kemudahan (FC), kreativiti pengurusan dan inovasi (MC&I), saiz organisasi PKS (SOS) dan penggunaan ICT (IU). Tambahan pula, untuk mengesahkan kepentingan statistik setiap lima peramal baki dengan item ukuran masing-masing, analisis faktor pengesahan (CFA) telah digunapakai. CFA telah menguurangkan bilangan item ukuran dalam setiap konstruk kepada hanya tiga kecuali konstruk penggunaan ICT, yang telah dikurangkan kepada sembilan item. Semua pengukuran item dalam skala penyelidikan keseluruhan yang dicatatkan pekali kebolehpercayaan ketekalan dalaman (Cronbach alpha) yang sangat tinggi, antara 0.951-0.842, dengan model yang baik secara keseluruhan (RMSEA) bernilai = .79, yang menunjukkan bahawa model struktur adalah cukup untuk mengukur data dan menghasilkan keputusan yang sah.

Kajian mendapati bahawa jangkaa prestasi, saiz organisasi PKS dan kreativiti pengurusan PKS dan inovasi penggunaan ICT meramalkan dengan ketara. Di samping itu, umur, jantina dan pengalaman sebagai faktor penyederhana hubungan di pelbagai peringkat yang penting. Walaubagaimapun yang penting adalah, jangkaan presatasi dipengaruhi oleh pengalaman, yang membayangkan bahawa PKS asas tani yang dikendalikan oleh pekerja dan pengurus dengan pengalaman sebelum penggunaan ICT berdiri peluang yang lebih baik memperoleh banyak manfaat daripada menggunakan ICT dalam perniagaan mereka. Model struktur (ukuran) meramalkan 31% (R2 0.31) daripada perbezaan yang berkaitan dengan penggunaan ICT. Oleh itu, kajian ini membuat kesimpulan seperti berikut. (1) Bahawa menjangkakan manfaat penggunaan ICT, perusahaan saiz organisasi dan ciri-ciri pengurus perusahaan, menjadi sederhana dengan ciri-ciri demografi pekerja dan pengalaman penggunaan ICT adalah faktor kritikal yang memberi kesan kepada penggunaan ICT oleh PKS asas tani di Selangor; (2) jantina, umur dan pengalaman pekerja (dan juga pengurus) boleh mempengaruhi penggunaan ICT oleh PKS asas tani di Selangor; dan (3) pekerja wanita menggunakan ICT lebih cenderung untuk melakukan kerja-kerja yang lebih baik dan menghasilkan keuntungan yang lebih tinggi daripada yang dapat dilakukan oleh rakan-rakan lelaki mereka. Oleh itu, kajian ini mencadangkan bahawa satu anjakan paradigma daripada

penggunaan ICT dalam industri yang didominasi oleh lelaki kemungkinan pasti akan berlaku didominasi oleh wanita, sekurang-kurangnya dalam konteks Selangor.

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I certify that a Thesis Examination Committee has met on 26 May 2017 to conduct the final examination of Ibrahim Adamkolo Mohammed on his thesis entitled "Factors Affecting ICT Usage for the Development of Small and Medium Agro-Based Enterprises in Selangor, Malaysia" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Master of Science.

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This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as a fulfilment of the requirement for the degree of Master of Science. The members of the Supervisory Committee were as follows:

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AGFI	Adjusted Good of Fit Index
AMOS	Analysis of Moment Structures
AVE	Average Variance Extracted
C&I	SME Managerial Creativity and Innovativeness
C-TAM-TPB	The Combined Model of Technology Acceptance Model and The Theory of Planned Behaviour
CEO	Chief Executive Officer
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CMIN	Value of Chi-Square (Chi-Square Minimum of Discrepancy)
CR	Construct Reliability
Do	Degree of Freedom
DOSM	Department of Statistics Malaysia
DV	Dependent Variable
EDA	Exploratory Data Analysis
EE	Effort Expectancy
EEM	Enterprise Event Model
ERP	Enterprise Resource Planning
EXP	Experience
FC	Facilitating Conditions
GDP	Gross Domestic Products
GDR	Gender
GFI	Goodness of Fit Index
GOF	Goodness of Fit
GPS	Global Positioning System
H_n	Hypothesis
IBM	International Business Machine
ICR	Internal Consistency Reliability
ICT	Information and Communication Technology
IDT	The Innovation Diffusion Theory
IFI	Incremental Fit Index
ICTCom	ICT for Communication
ICTPros	ICT for Product Processing

IMP	The Industrial Master Plan
IS	Information Systems
ITU	International Telecommunications Union
IU	ICT Usage
IV	Independent Variable
MC&I	SME Managerial Creativity and Innovativeness
MCMC	The Malaysian Communication and Multimedia Commission
MPCU	The Model of Personal Computer Utilisation
MM	The Motivational Model
N	Sample Size
NBI	National Broadband Initiative
NFI	Normed Fit Index
NGOs	Non-Government Organisations
NITA	National Information Technology Agenda
NITC	National Information Technology Council
PCA	Principal Component Analysis
PC	Personal Computer
PE	Performance Expectancy
PMR	Penilaian Menengah Rendah (Lower Secondary Assessment)
R^2	Correlation Coefficient of Determination
RM	Ringgit Malaysia (Malaysian Currency)
RMSEA	Root Mean Square Error of Approximation
SaaS	Software-as-a-Service
SCT	The Social Cognitive Theory
SE	Standard Error
SD	Standard Deviation
SEM	Structural Equation Modelling/Model
SI	Social Influence
SK	Sekolah Kebangsaan (National Primary School)
SMECORP	Small and Medium Enterprises Corporation
SMEs	Small and Medium-scale Enterprises
SMI	Small and Medium-scale Industries
SMIDEC	Small and Medium Industries Development Corporation
SMK	Sekolah Menengah Kebangsaan (National Secondary School)

SMS	Short Messaging Service
SPM	Sijil Pelajaran Malaysia (Malaysia Education Certificate)
SNSs	Social Networking Sites
SOS	SME Organisational Size
SPSS	Social Package for Social Science
SS	SME Organisational Size
STPM	Sijil Tinggi Pelajaran Malaysia (Malaysia Highest-Edu Cert)
TAM	The Technology Acceptance Model
TLI	Tucker-Lewis Index
TPB/DTPB	The Theory of Planned Behaviour/The Deposed Theory of Planned Behaviour
TRA	The Theory of Reasoned Action
UN	United Nations
UNDP	United Nations Development Programme
UPSR	Ujian Penilaian Sekolah Rendah (Lower Assessment Test)
USA/US	United States of America/The United States
UTAUT	The Unified Theory of Acceptance and Use of Technology
$UTAUT^2$	The Unified Theory of Acceptance and Use of Technology Extended
VOU	Voluntariness of Use
WPKL	Wilayat Persekutuan Kuala Lumpur
WPPJ	Wilayat Persekutuan Putra Jaya

CHAPTER 1

INTRODUCTION

1.1 ICT Development in Malaysia

Malaysia is one of the developing countries with a robust ICT sector and increasing Internet and broadband penetration rates that drive the successful implementation of many Internet-based public services and programmes like **e**-business, **e**-Government and **e**-agriculture. The developmental potential of ICT cannot be underestimated. According to the United Nations (UN) (2002, June 17), the former UN Secretary-General, Kopi Anan concisely outlined the developmental potentials of ICTs, which include to promote economic growth, fight poverty and support the integration of developing countries into the global economy (globalisation).

Information and communication technology (ICT) development in Malaysia began in 1966, with the installation of the first set of computer system (Kakroo, 2007). That became a turning point in the annals of ICT for entrepreneurial and socio-economic development in the country. Moreover, almost a century early, in 1874, the first telephone service was established in the country. A key factor that spurred this ICT development in the country was the liberalization of the telecommunication sector in 1987 and the establishment in 1994 of the National Telecom Policy (NTP). ICT development further got a boost when in 1998 the Communications and Multimedia Act, which established the Malaysian Communication and Multimedia Commission (MCMC) as a regulator of the ICT industry was enacted (Kakroo, 2007; Saleh & Ndubisi, 2006).

ICT has impacted positively on the Malaysian economy, which has been buoyant even in the infamous economic melt-down among the ASEAN nations in 2000 (Kakroo, 2007). However, in and the recent global economic recession brought about by slumping of global oil prices in 2016 and 2017, the contribution of the ICT sub-sector to the country's economy has been low, even though developments in ICT in the country have been increasing (PIKOM, 2016). Developments in Internet services in the country began in 1988 while Broadband Internet services began in 2001. In 2003, the country's Internet penetration rate was 11.4% (DOSM, 2017). In 2011, it was estimated at 62%; by 2015 it was estimated to reach 77% (Yung-Hui, 2011, Feb. 10). However, as reported by Baziad (2015, Sept. 10), the country's Internet access rate in 2015 was 70.4%, 6.6% less than the estimated rate in Yung-Hui (2011, Feb. 10).

Moreover, recent statistics contained in a press release by MCMC on 6 May 2014 indicate that back in 2011, Malaysia has surpassed some of the Internet broadband targets set by the Broadband Commission of the International Telecommunications Union (ITU) to be achieved by 2015 as follows:

1. Making broadband policy universal; (Malaysia's National Broadband Initiatives launched in 2010)
2. Entry-level broadband services should be made affordable in developing countries, amounting to less than 5% of average monthly income; (In Malaysia, the lowest available package was RM15, which is less than 1% of the average monthly income of RM2000)
3. Forty percent (40%) of households in developing countries should have Internet access; (The currently Households' Broadband penetration rate in Malaysia was 67.3%, that is, 11.7% more than it was in 2010)
4. Internet user penetration should reach 60% worldwide, 50% in developing countries and 15% in less developed countries (Currently there were 18.6 million Internet users in Malaysia, that is, 63.6% of the country's population) (MCMC, 2014)

In the First Quarter of 2014 there were 43,112,000 cellular telephone subscriptions with a penetration rate of 143.7% per 100 users in the country compared to 2013, when the subscriptions and penetration rates were 42,996,000 and 143.8% respectively. The mobile phone penetration rate for the Kuala Lumpur Federal Territory (WPKL) in 2012 was 203.5% per 100 inhabitants (which was the highest) while the Putra Jaya Federal Territory (WPPJ) recorded the lowest with 87.0% (MCMC, 2014; MCMC, 2013).

Malaysia's current population stands at over 32,061,36 (DOSM, 2017). Cited in Internet World Stats (2016) (an online global statistics website), the International Telecommunications Union (ITU) estimated that about 68.1% (21,090,777) of the population are internet users, with 19 million Facebook users (Internet World Stats, 2017). The growth in Internet penetration in the country over the years has uncovered myriad of opportunities and generated interests among Malaysian enterprises to develop their businesses (Internet World Stats, 2016). Although most of the ICT development projects and infrastructures are concentrated in cities and urban areas, authorities have been redoubling efforts to minimize digital divide (digital poverty) and augment fair access for all (Kakroo, 2007; Saleh & Ndubisi, 2006). One of such milestone in the country's drive towards ICT development for entrepreneurial and socio-economic development is the establishment of the Multimedia Super Corridor (MSC) project, which connects Malaysia to the world. The MSC project alone has tremendously impacted not only on business and socio-economic development but also public administration and education (Kakroo, 2007).

Furthermore, there have been government reports that authorities and key stakeholders have been implementing sound ICT policies aimed at engendering rapid and sustainable socio-economic development in the country. For example, the launching of a series of robust and consistent development plans over the last couple of decades, particularly the National Information Technology Agency (NITA) in 1996 and the Vision 2020, positive results are being observed especially in digitally disadvantaged areas in terms of ICT development for enterprise and socio-economic development (Saleh & Ndubisi, 2006; SMIDEC, 2008).

In the Malaysian authorities' resolution to take even bolder steps towards developing ICT sector for entrepreneurial and socio-economic development in the country, a Modernisation and Management Planning Unit (MAMPU) has been established under the supervision of the Prime Minister's office to spur ICT development in the public sector. Both MSC and MAMPU have helped develop e-services such as e-business for large, small and medium-scale enterprises and e-Government (Kakroo, 2007). As clearly enunciated in the National IT Agenda (NITA) by National IT Council (NITC) of Malaysia, which forms parts of the country's Vision 2020, the Malaysian Government has been spurring action to achieve a knowledge-based society (k-society) driven by ICT. These lofty ideas are well spelt out in the Vision 2020 development plan of Malaysia (NBI, 2014; NITC, 2014).

1.2 Development of SMEs in Malaysia and Policy Implications

Developments in small and medium-scale enterprises (SMEs) in Malaysia began in the early 1970s with the introduction of the New Economic Policy (NEP), 1971-1990, which was aimed at reducing poverty and correcting economic imbalances (Saleh & Ndubisi, 2006; Poon, 2004). However, in the 1980s, the Government began concerted efforts toward encouraging and recognising the salience of SMEs in the country's economy occurred by initiating greater efforts toward encouraging closer ties between SMEs and large enterprises. Many programmes and incentives were initiated by the Government during the Seventh and Eighth Malaysian Development Plans (Government of Malaysia, 2001) and during the Second Industrial Master Plan (IMP2) (Saleh & Ndubisi, 2006) in its bid to boost the performance of SMEs.

Under IMP2, the Government has implemented various policies and strategies aimed at SMEs growth. Particularly, the plan was formulated to enhance the growth of the manufacturing sector through the entire value chain, and encourage cluster-based industrial development. The IMP2 provided an integrated approach to the development of industrial areas and opportunities for growth of SMEs (Poon, 2004). Additionally, there were some IMP2 programmes initiated to enhance SMEs development (which was included in the Seventh and Eighth Malaysian Development Plans) that addressed several issues such as access to markets, increasing technology (ICT) usage capabilities and increasing access to finance (Saleh & Ndubisi, 2006; SMIDEC, 2008).

During the Seventh Malaysian Development Plan period, (1996-2000) many programmes were implemented covering a wide range of SME needs. The IMP7 provided a pivotal role to SMEs in supporting the country's national industrialisation policy through foreign channels across the manufacturing sector, since most SMEs operated in this sector (SMIDEC, 2008, 2006). However, during the Eighth Malaysian Development Plan (2001-2005), most of SMEs did not have the technological (ICT) capability to improve production efficiency and product quality (Government of Malaysia, 2001). The government, therefore, took the responsibility of rendering strong support toward the development of viable SMEs during the period of the plan, especially in sectors that have a high growth and export potential (Saleh & Ndubisi, 2006_a, 2006_b).

The Government's commitment to the development of SMEs is evidenced by IMP2 which ended in 2005, and is to be followed by the Third Industrial Master Plan (IMP3), 2006-2020, which coincides with the country's vision to 2020 (Poon, 2004). The preparation of IMP3 involved the creation of three bodies, namely an industrial planning committee, a steering committee and a Technical Resource Group (TRG). The objective of these groups was to enhance the development of SMEs and analyse achievements under IMP2, and assess the current performance and development profile of SMEs in the manufacturing and selected service sectors (SMIDEC, 2008, 2006).

In addition, the government, through the National Small and Medium Enterprise Development Council, plays an important role in SME development and functions. The council is also considered as the highest policy-making body to discuss the future direction and strategies for SME development. For example, the council took new initiatives to improve access to financing for SMEs, by introducing an interest subsidy and securitisation of SME loans to encourage further lending to them by financial institutions (Poon, 2004; SMIDEC, 2008).

By establishing the National Small and Medium Enterprise Development Council, the Government has shown unrelenting commitment toward the development of SME. The council has been responsible the coordination, training and human resource development for SMEs, enhanced management and publication of SME information, strengthening the marketing and promotion of SME products and services as well as serves as a small debt resolution scheme for SMEs (SMECORP, 2017; SMIDEC, 2008). According to the Small and Medium Industries Development Corporation (SMIDEC) (2006) incentives for SMEs development provided by the public sector included tax incentives to stimulate investment, grant assistance, loans, credit and equity participation and infrastructure and supporting services. The incentives were subsequently structured into broad-based programmes designed to strengthen SMEs in the areas of finance, technology acquisition, skills upgrading, market and infrastructure development (also see Saleh & Ndubisi, 2006_a & $_b$). This study presumed that the afore-mentioned developments and policies in ICT in the country would have positive implications toward the development of on SMEs in the country.

1.3 Categorisation of SMEs

Small and medium-scale enterprises (SMEs) are defined as businesses that employ fewer than 250 people and are independent from other organisations (Mohapatra, 2013). In addition, an enterprise is considered an SME in each of the respective sectors based on annual sales turnover or number of full-time employees. Small and medium enterprises (SMEs) play a vital role to the economic growth in Malaysia. In Malaysia SMEs are categorised into agro-based industries, manufacturing, services, primary agriculture, and communication technology (Sonawane, 2014; Aman & Tahir, 2011).

Agro-based industries are an enterprise classified under manufacturing sector with fewer than 150 full-time employees or with annual sales turnover not more than RM25 million (SMIDEC, 2008). However, SMEs are diverse: some are dynamic and flexible, with a great power to innovate and a vast range of diversity, others traditional, based on family involvement, embedded in local business environments, and others are start-ups, fragile organisations striving for life and subsistence. Although the classification of SMEs is often peculiar to nations, according to Mohapatra (2013) SMEs can be classified broadly into the following categories.

1. Manufacturing SMEs: Those that engage in the manufacture/ production of goods pertaining to any industry
2. Service industry SMEs: Those that have been defined in terms of their investment in equipment (excluding land and buildings) and further classified into small and medium enterprises

Although globally, small and medium-scaled enterprises (SMEs) lag in terms of applications of ICT (Mohapatra, 2013; Burke, FitzRoy & Nolan, 2002), the use of Information Technology (ICT) has become almost inevitable in businesses (Ibrahim, Hassan & Gusau, 2017$_a$; Ibrahim, Hassan, Gambo & Yusuf, 2017$_b$), and its usage by SMEs can yield many benefits whether in the form of implementing and using online transaction applications such as **e**-commerce, **e**-shopping, or even **e**-banking (Ibrahim, et al., 2017$_a$ & $_b$). As entrepreneurs benefit by being able to access narrow market segments that are widely distributed, consumers benefit by accessing global markets with larger products availability from a variety of retailers at lower costs. ICT usage in business can also create room for the improvement of product quality and innovation of new methods of selling existing products (Blanchflower & Oswald, 1990; Mohapatra, 2013).

This study investigated the agro-based firms' organisational expectancy toward ICT based on the UTATUT perspective. The model has been an important theme in ICT adoption studies during the past decade due to its parsimonious power to predict and explain a range of organisational and individual ICT adoption expectations and usage behaviour (desired outcomes such as commitment, loyalty, turnover intent, satisfaction and performance (Ahmad, Tarmidi, Ridzwan, Abdul Hamid & Abdul Roni, 2014; Taiwo & Downe, 2013). Although the UTAUT model has been widely documented to

explain many organisational and individual ICT adoption issues, its use in agro-based SMEs in Selangor research has been limited.

Management strategy and creativity and firms' size (population of employees and capital-base) have also been found to be closely linked to ICT adoption behaviour among entrepreneurs and workers (Idota, Bunno, & Tsuji, 2011; Idota, Ueki, Bunno, Shinohara & Tsuji, 2014). However, organisations and individuals may have distinctive expectations of ICT usage (Fink & Disterer, 2006), which may either permit or limit change, innovation and performance. Therefore, it is important to investigate whether these expectations affect organisational adoption and usage of technology for entrepreneurial development.

1.4 Statement of the Research Problem

Information and communication technologies (ICTs) have been identified as one the unprecedented development tools in the 21st Century (Rahman, et al. 2013). ICTs possess immense potential to empower people economically (Diga, Nwaiwu & Platinga, 2013; Nikam, Ganesh & Tamizhcelvan, 2004), especially when applied to agro-based small and medium scale enterprises (Hassan, Shaffril & Abu Samah, 2012; Nikam, et al., 2004; Alias, 2013). Apart from their role in terms of their contribution to exports, employment and economic growth, there is a wide recognition in the literature about the challenges and barriers facing Malaysian SMEs, especially agro-based SMEs (Hassan & Shaffril, 2009; Hassan, Yassin, Shaffril, Othman, Abu Samah, Abu Samah & Ramli, 2011).

Given that copious empirical studies have supported at various degree of significance the claims that ICT usage can spur positive entrepreneurial development (Ibrahim, et al., 2017_a, in press; Hassan, et al., 2012; Zaremohazzabieh, Samah, Omar, Bolong & Shaffril (2014), more research is needed to provide further explanation to the so many critical issues surrounding the reasons people and organisations use ICTs, given that both organisations and people are dynamic in their usage patterns (Yunis, El-Kassar & Tarhini, 2017). For instance, research needs to provide further understanding regarding the issue of the need (why) to use ICT in a business for entrepreneurial development, the issue surrounding the type of ICT relevant to a firm's entrepreneurial needs and issues bordering the degree (level) of usage, which involves firms' choice of advanced or basic ICTs for usage.

However, an effective explanation to these and many related issues can only be obtained if further empirical investigations into the factors affecting the usage of ICTs among the SMEs in that geographical location (in this case, Selangor), the degree of the effect of the various factors on usage, including social and cultural influences and the roles employees' demographic variables (gender, age and experience) play in influencing the effect (Kakroo, 2007). This calls for the mobilisation of resources to launch a systematic inquiry into these research issues (problems).

Many studies have been performed to determine the common ICTs used by SMEs in Selangor and the intensity (level) of usage (see Nawi & Luen, 2015; Saleh & Ndubisi, 2006_a & $_b$; Zaremohazzabieh, et al., 2014). However, limited literature investigating the types of ICT used among agro-based SMEs in Selangor exist. This further explains the reason this study was carried out. The literature has emphatically demonstrated that ICT adoption is a complex phenomenon (Mutingi, 2014: AlRahbi, 2017), which gives credence to the dire need for more empirical investigations to be carried out in that regard. Additionally, the literature has established that organisational (entrepreneurial) ICT usage process is framed upon three mechanisms, namely cognitive stage, affective stage and adoption/usage/implementation stage (Bhattacherjee & Lin, 2015).

Owing to the nature of SMEs, most of which are run by few individuals, often personal owners of the business, and are often susceptible to risks, SME managers whose responsibility is to make decision regarding all the principle operations in the organisation usually do consider myriad of factors before making final decisions regarding the adoption and usage (application) of ICT in business (Hilmi, Ramayah, Mustapha & Pawanchik 2010; Rahman & Ramos, 2014). In fact, it is pertinent for managers of entrepreneurial businesses to make analysis regarding the type of ICTs to adopt, whether those ICTs fall into the scheme of that particular SME business operations, whether there is available skilled labour to use the ICTs effectively for maximum gains, whether the adoption of ICTs would ultimately yield any positive outcomes and what are the cost implications of adoption and usage of ICTs in the organisation, firms may want to use ICT to develop their business (Martin & Matlay, 2001; Rahman & Ramos, 2014). However, the question of the type of ICT to adopt and use is very critical (Higon, 2011), because unless the type of ICTs that are relevant to the scheme of operations of the firm are adopted, the business may succumb to financial and infrastructural losses; and may be forced to fold up. Therefore, it is presumed that SME managers' influence regarding the strategic decisions to make in terms of ICT adoption and usage will affect the firms' ICT usage behaviour.

Although ICTs are rapidly being churned out and innovations in ICTs are progressively re-evolved (Ibrahim, et al., 2017_b), adoption of certain type of ICTs for industrial usage however, may be affected by several factors, some of which include SME's financial strength, access to ICTs, availability of skilled labour, market factors, availability of ICT-related infrastructures such as electricity, Internet (Wi-Fi) services and mobile telecommunication services (Dholakia & Kishetri, 2004; Rahman & Ramos, 2015). Both statistics from the Government departments and empirical findings have unanimously underscored that most of the SMEs in Selangor use ICTs but at basic levels (Kakroo, 2007; Nawi & Luen, 2015; SMECORP, 2015). Basic ICT usage includes simple communication via e-mail, mobile phone services such as short message service (SMS) and voice-calls, using both smartphone and personal computer-based instant messaging applications like WhatsApp, WeChat, Telegram, Messenger, as well as social networking sites like Facebook, Instagram, Twitter and LinkedIn (AlRahbi, 2017). Even website usage is categorised as basic ICT usage (Martin & Matlay, 2001). Additionally, not quite many of agro-based SMEs in Selangor use moderately advanced ICTs such as e-commerce and e-business for business development (Nawi & Luen, 2015).

As more and more new breed of ICT applications and platforms are evolving every so often, business organisations have a variety of ICTs to choose from. It depends on the firms' business goals, targets and viability (Bayo-Moriones, Billo´n & Lera-Lo´pez, 2013; Rahman & Ramos, 2014). For instance, some enterprises may go for new, innovative technologies, some may prefer to use the traditional ICTs like fixed telephone, radio and television especially for publicity purposes while some others may go for both. However, it remains to be understood why business firms use or not use ICTs based on choice and preference. It still needs explanation why SMEs would prefer a certain category of ICT to another. Still there is room for investigation into what factors drive SMEs' use of ICT for entrepreneurial advancement and what factors in turn influence the referent driving factors.

This research was prompted by the desire to investigate and provide empirical explanations to the underlying factors affecting the usage of ICTs for entrepreneurial development by agro-based SMEs in Selangor. Many factors have been identified having a link with ICT usage by SMEs for business and socio-economic development (Bayo-Moriones, et al., 2013; Rahman & Ramos, 2014). However, one crucial factor that has been consistently singled out in recent studies is the lack of successful adoption and use of ICT (AlRahbi, 2017; Higón, 2012; Runevad & Olofsson, 2014). Additionally, management skill has been identified as another factor that is affecting technology adoption by SMEs (Bayo-Moriones, et al., 2013; Dholakia & Kshetri, 2004) in Malaysia (Abu Bakar, Abdul Razak & Abdullah, 2013). SMEs performance and growth are believed to be affected by ICT innovations usage, which is often linked to expectancy (cognitive) factors (Venkatesh, et al., 2003; Zaremohazzabieh, et al., 2014).

Available records show that SMEs nowadays constitute a major business sector in most countries over the world, covering a wide range of industries. In most countries, the number of SMEs exceeds the number of large firms, and they (SMEs) contribute strongly to the GDP (AlRahbi, 2017; Rahman & Ramos, 2014). The Malaysia Economic Census 2011 report indicate that SMEs constitute 97.3% of total business establishments (645,136) in the country and employ over 4,854,142 (57.4%) of the total employments of SMEs, 8,460,971 in 2012 (DOSM, 2014). however, only 27% of the 645,136 SMEs in the country use advanced ICTs such as e-commerce and ICT in production/processing lines, while many (67%) of them use basic ICTs such as the Internet (MCMC, 2014).

Some of the salient issues regarding this phenomenon include the perception of the entrepreneurs toward usage of ICT to grow their businesses; their perception of the use of ICT to boost agro-based SMEs; and their behaviour in using ICT for making their businesses grow. This study presumed that adoption and usage of ICTs by agro-based SMEs in Selangor may have been affected by so many factors like evaluation of the performance expectancy, effort expectancy, social influence, facilitating conditions, entrepreneurial capacity (organisational size) and entrepreneurs' ability to employ strategic creativity and innovation to manage their agro-business successfully (Nasri & Scharfeddine, 2012; Zaremohazzabieh, et al., 2014). Against the backdrop of the

current levels of the Broadband Internet penetration and other developments in the Malaysian ICT sector, this study focused on identifying the ICTs predominantly used by the agro-based SMEs in Selangor, their usage levels, the relationship between cognitive (expectancy) factors adopted from the work of Venkatesh, et al. (2003) (with some modifications) and the moderation influence of demographic variables on ICT usage by the SMEs. For details on the modifications, kindly refer to Chapter 2, Section 2.5.

1.5 The Research Questions of this Study

This study was conducted with the aim of answering some pertinent research questions. The general research question was what were the critical factors that affect ICT usage by agro-based SMEs in Selangor and what was the relationship between the factors and ICT usage? The specific research questions however, were as follows:

1. What were the ICTs used by the agro-based SMEs in Selangor predominantly?
2. What was the level of ICT usage among the agro-based SMEs in Selangor?
3. What was the relationship between performance expectancy, effort expectancy, facilitating conditions, SME (organisational size) and SME managerial creativity and innovativeness and ICT usage among the agro-based SMEs in Selangor?
4. What was the moderating effect of gender, age and experience on relationship between the factors (performance expectancy, effort expectancy, facilitating conditions, SME organisational size and SME managerial creativity and innovativeness and ICT usage among the agro-based SMEs in Selangor?

1.6 The Objectives of this Study

This study was performed targeting some objectives. The general objective was to determine the critical factors that affect ICT usage among the agro-based SMEs in Selangor and determine the relationship between performance expectancy, effort expectancy, social influence, facilitating conditions, SME organisational size and SME managerial creativity and innovativeness and ICT usage moderated by gender, age and experience among agro-based SMEs in Selangor. The specific objectives were as follows:

1. To determine the ICTs that are used by the agro-based in Selangor predominantly
2. To determine the level of ICT usage among the agro-based SMEs in Selangor
3. To determine the relationship between performance expectancy, effort expectancy, facilitating conditions, SME organisational size and SME managerial creativity and innovativeness and ICT usage among the agro-based SMEs in Selangor

4. To determine the moderating effect of gender, age and experience on the relationship between performance expectancy, effort expectancy, facilitating conditions, SME organisational size and SME managerial creativity and innovativeness and ICT usage among the agro-based SMEs in Selangor

1.7 Significance of this Study

One area of research that this study has significantly contributed some knowledge is methodology and theory. There is limited literature published online in the public domain that focused on ICT usage among agro-based SMEs in Selangor. Majority of prior studies and literature reviews focused on general SMEs in Malaysia rather than treated SMEs based on their categories and/or regions. Most of the previous studies adopted the Technology Acceptance Model (TAM), the Entrepreneurial Event Model (EEM) and some other models.

In addition, many prior studies adopted systematic sampling or even simple random sampling just like this study. However, their response rates were low compared to the sample size (Saleh & Ndubisi, 2006_a, 2006_b). One empirically important thing that is common to many of the previous study is that they did not focus on investigating moderating effect. This and the previous limitations that have been identified with many of the prior studies in agro-based SMEs (or SMEs) in Malaysia culminated in literature gaps which the current study attempted to close some of them by embarking on this empirical inquiry. Therefore, the significance of this study, in this context, include designing an articulate research framework using the UTAUT model which, according to Abu Bakar, et al. (2013) and Qinfei, Shaobo and Gang (2008) is one of the most comprehensive models in ICT adoption studies.

The current study is significant because it has gone further to integrate two additional determiners to the existing four determiners in the model. The imported variables are SME organisational Size (SOS) and Managerial Creativity and Innovativeness (MC&I). The SOS construct was derived from the works Fink & Disterer (2006) and Lucchetti and Sterlacchini (2004) while the MC&I construct was derived from the works of Agarwal and Prasad (1998), Rogers (2003), Rosen (2005), Bayo-Moriones and Lera-Lopez (2007), Bayo-Moriones, et al. (2013) and Higon (2011).

This study is significant because it underscores the practicability of merging theory and practice in research. Embarking on an empirical study of any kind would certainly be an onerous task (Tere Blanche, Durrheim & Painter, 2006). Often, the challenges researchers (especially student researchers) face during conducting a study pose daunting resistance to the progress of the study. However, the alignment between theory and practice in carrying out research studies is a pre-requisite matter to ensure consistency throughout the systematic activities of research and create an atmosphere

of confidence regarding the validity and reliability of the instrument (Kitson, Rycroft-Malone, Harvey, McComback, Seers & Titchen, 2008).

The current study came at the heels of other similar studies that found that ICT adoption among the agro-based SMEs is low (n = 50) (Nawi & Luen, 2014) and only 5% (n = 412) of SMEs in Malaysia substantially use ICT in running their business (Moghavvemi & Salleh, 2014) and the level of ICT usage among youth agro-based Malaysian SMEs is moderately high (Ramli, Abu Samah, Hasan, Omar, Bolong & Shaffril, 2015). Except for the latter findings, the (two) former findings have painted a gloomy picture of the Malaysian agro-based SME sub-sector about technology adoption.

Therefore, the current study is significant because it is expected to provide further explanation about why agro-based SMEs in Selangor use (or decline to use) ICT to grow their enterprises. It is also expected to further explain the patterns of ICT usage of the agro-based SMEs, contribute knowledge to the existing, provide recommendations to Selangor authorities about policy strategies regarding ICT usage for the development of small and medium size businesses, particularly agro-based SMEs. Additionally, it is expected that this study will proffer suggestions about how to solve problems associated with ICT adoption by SMEs in the Selangor.

1.8 Scope, Limitation and Location of this Study

This study was performed in the purviews of ICT adoption (usage) by SMEs. As the study progressed however, some limitations were observed and both the scope and limitations of the study are outlined below.

Scope: The scope of the study refers to the parameters under which, or the boundaries within which the study will be operating (Simon & Goes, 2013). Primarily, the current study covers ICT usage and agro-based SMEs in Selangor only. In ICT, the study generally all scopes of ICT as applicable to agro-based SME business.

Furthermore, this study focused on some ICT applications and devices that are commonly used among people in Malaysia, and particularly among agro-based SMEs. The ICT applications and devices include covered the use of mobile phone and its applications, fixed telephone, fax, *e*-mail, Internet, website, computers, *e*-business (*e*-transaction) and social networking sites (SNSs) such as Facebook, Twitter, Google+, etc. The study also investigated SMEs that engaged in small and medium enterprises related to crop, livestock, fish, forest produces, agro-allied chemicals (e.g., fertilizer, insecticide/pesticide and herbicide) and livestock. The above agro-based taxonomy is based on SMECORP (2014) classification.

Limitations: Limitations of the study are matters and occurrences that arise in a study which are out of the researcher's control. They limit the extensity to which a study can go, and sometimes affect the findings and conclusions that can be drawn (Simon & Goes, 2013). The major limitations of this study include the moderation of the UTAUT model, especially dropping of the behavioural intention dimension, and subsequently, elimination of the social influence construct from further analysis because of weak loading at exploratory factor analysis (EFA).

Furthermore, statistical limitations may be included. Predicting the behaviour of one latent variable from that of another might not have always meant that if a relationship exists between two variables, then there is an association and *vice-vasa*. Sometimes that is not the case; two variables can be associated without the presence of a causal relationship between them (Malhotra, 2004; Simon & Goes, 2013). For example, the relationship between both of effort expectancy and facilitating conditions and ICT usage was not significant. However, the constructs were influenced by gender, age and experience at various levels of moderation. There is also the limitation of survey instrument. During data collection, about one-quarter of the respondents requested that the questionnaire should be dropped, and returned for retrieval later whereas, about three-quarter of them were surveyed on face-to-face basis. In both case the respondents may have been affected, for example, by time or some other constraints (Simon & Goes, 2013) that might have affected their emotions or mood, which might have consequently influenced the kind of response they gave. This study also understands that it is always possible that future research will cast doubt on validity of any of the hypotheses tested or conclusions drawn.

Other limitations of this study include ethno-racial bias whereby most of the data was collected from Chinese respondents, because they were more approachable during data collection. Also, worthy of note is that many of the selected agro-based SMEs were food-and-beverage-based SMEs. Even though the results of this study can be generalised among Malaysian agro-based SMEs based on a suggestion that a study on a sample of 382 is enough to be generalised for a population of one million (Sekaran, 2003). However, caution should be exercised when interpreting the results of this study.

Location: The current study was performed in Selangor State. The respondents of the study were selected from among the population of agro-based SME in Selangor. The researcher chose Selangor because it is the sate with the largest number of SMEs and the most industrialised in the country (Saleh & Burgess, 2009; SMECORP, 2014).

1.9 Definition of Key Terms

To understand the concept of this study, the key conceptual terms are defined below.

ICT comprises all devices, systems and facilities that can be deployed to collect, process, store & diffuse information that include technologically sophisticated tools such as computers & Internet, and conventional media such as radio and television (Njoh, 2012). Furthermore, Information and communication technologies (ICTs) are regarded as drivers of knowledge flows and catalysts of innovation. Garcia-Muniz and Vicente (2014) describe ICTs as general-purpose technologies. Breshnahan and Trajtenberg (1995) defined ICTs as some phenomena whose prominent characteristics are their fast path of technological improvement, pervasiveness across the full economy and their role as innovation enablers. Significantly, however, ICT facilitate the creation of new knowledge and its faster diffusion through more efficient processes information dissemination (Garcia-Muniz & Vicente, 2014).

ICT usage refers to the indicators for the actual use, degree (frequency/level) of use, preference of use and purposes of use of ICT in running the SMEs (Mutambi, 2011; Gallego, Gutierrez & Lee, 2015).

Agro-based SMEs: Based on the SMECORP (2014) definition, agro-based small and medium-scale enterprises (SMEs) are agro-based business organisations whose sales turnover ranges from RM300,000 to less than RM15 million and RM15 million to RM50 million or full-time employees ranging from 5 to 74 and 75 to 200 workers. However, in January 2015, SMECORP has defined small enterprises as those business firms with an annual turnover ranging from RM340,000 to RM17 million or 5 to 75 employees, or both; while medium enterprises are those business firms with an annual turnover ranging from about RM17 million to RM56 million with 75 to 200 employees, or both (SMECORP, 2015, 2014). Furthermore, agro-SMEs refer to firms that engaged in direct sale or processing of agro-products" (Sharma, 2013, p. 10). While, entrepreneurship is "the practice of starting new business organisations in response to perceived opportunities" (Sonawane, 2014, p. 24).

Entrepreneurial Development refers to the process of improving and enhancing entrepreneurial skills and knowledge through standardised training and institution-building programmes. Entrepreneurial development focuses on expanding the foundations of entrepreneurship to facilitate conditions through which new business ventures are created for employment generation and economic development. It concentrates on business ventures' growth potential and innovation. Entrepreneurship development targets individuals or groups who intend to start a new venture (start-ups) or expand and enhance an existing one (UNDP, 1999). In this study, entrepreneurial development simply means the expansion and enhancement of the operations and worthiness of a venture through the application (usage) of ICTs.

Performance Expectancy (PE) refers to the degree to which an individual believes that using ICT will help him or her to attain gains in job performance (Venkatesh, Morris, Davis, & Davis, 2003; Escobar-Rodriguez & Carvajal-Trujillo, 2014).

Effort Expectancy (EE) refers to the degree of ease/effort associated with the use of ICT by an individual user (Venkatesh, et al 2003; Escobar-Rodriguez & Carvajal-Trujillo, 2014).

Social Influence (SI) refers to the degree to which an individual user perceives that important others believe that he or she should use ICT (Venkatesh, et al 2003; Escobar-Rodriguez & Carvajal-Trujillo, 2014).

Facilitating Conditions (FC) refers to the degree to which an individual user believes that an organisational & technical infrastructure exists to support use of ICT in the organisation (Venkatesh, et al 2003; Escobar-Rodriguez & Carvajal-Trujillo, 2014).

SME organisational Size (SOS) refers to the degree to which the population of workers, annual turnover and number of branches affect the ICT usage of an SME. In other words, SOS refers to the entrepreneurial capacity of an organisation determined by the organisation's number of employees, the vastness of its operations, market reach and share (Gupta, Cheng & Chian, 1997; Horisch, Johnson & Schaltegger, 2015).

Managerial Creativity & Innovativeness refers to the degree to which the expertise of the management in terms of tactical creativity and strategic innovativeness influences the ICT usage of an SME. In other words, C&I refers to the new way of employing the skills and expertise of ICT usage by the management staff of a business enterprise for the advancement of the organisation's businesses (Duan, Mullins, Hamblin, Stanek, Sroka, Machado & Araujo, 2002).

1.10 Summary of the Chapter

This chapter has provided a broad overview of the concept of the usage of ICT by SMEs in Malaysia. The chapter highlighted that the entrepreneurial business environment in the country poses myriad of challenges to the adoption and usage of ICT by SMEs, as identified by numerous past research studies. Often SMEs are affected by both internal and external factors such as lack of ICT usage skills and tax and government regulations. Hence, this study was conducted to determine the factors that affect the SMEs and investigate the influence of the factors on the ICT usage of the SMEs. The next chapter reviews the literature and provides the grounds for determining the theoretical approach to adopt.

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