Cloud computing utilisation and the mitigation of barriers to accelerated internationalisation by SMEs from emerging markets: evidence from Iran and Turkey

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By

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Abstract

Over the past few years, the accelerated internationalisation by SMEs from Emerging Markets (EM-SMEs) have been facilitating by the phenomenon of the Cloud Computing. This technology as a new strategic approach has become in the centre of attention of many scholars and pragmatists. Despite prevalent use of Cloud-Computing Utilisation (CCU) and fast-paced growth of using this technology among the EM-SMEs, yet few studies have been conducted to investigate the effectiveness of utilising this new technology to mitigate the internationalisation barriers of the EM-SMEs towards their accelerated internationalisation. Therefore, this research study endeavours to explore the effectiveness of the CCU in mitigation of the EM-SMEs' internationalisation-barriers towards an accelerated internationalisation. The research survey was conducted online by SurveyMonkey with the use of random and snowball sampling methods for the collection of data from the top managers of 227 SMEs in different industries in two contexts of Iran and Turkey. A quantitative research methodology was conducted with the use of self-administered questionnaires. In addition, the structural equation modelling (SEM) was used in data analysis by the use of IBM$^®$ SPSS$^®$ Amos software. The key findings of this research study shed light on the effectiveness of the CCU for the EM-SMEs to accelerate their internationalisation. The findings of this research confirm that the CCU enables the EM-SMEs to mitigate informational, operational, marketing and environmental barriers and consequently this technology enables the EM-SMEs to accelerate their internationalisation. This research study contributes theoretically in both International Business (IB) and Information System (IS) respectively by identifying and classifying the EM-SMEs internationalisation barriers, and by providing and confirming a series of effective the CCU's solutions to mitigate the EM-SMEs' internationalisation barriers. Moreover, this research study contributes methodologically by applying the SEM data analysis with the use of AMOS software in order to investigate the effectiveness of the CCU as well as quantifying the magnitude level of EM-SEMs' integration with CC based on the definition of cloud computing (CC) which has been defined by National Institute of Standards and Technology (NIST, 2011). Furthermore, the empirical outcomes of this research study contribute that the CCU facilitates the EM-SMEs to mitigate their informational, operational, marketing and environmental barriers towards an accelerated internationalisation. Therefore, this research contributes empirically to the EM-SMEs' decision-makers and the cloud service providers (CSPs) in order to get the most out of this phenomenon.

Keywords: *Internationalisation Barriers, Accelerated Internationalisation, SMEs, Emerging Markets, ICT, Cloud Computing Utilisation, Uppsala, Born Global, Leapfrogging,*

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Declaration

I, Sahab Hosseini declare that this PhD thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where states otherwise by reference or acknowledgment, the work presented is entirely my own.

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List of Abbreviations and Acronyms

AGFI	Adjusted Goodness of Fit Index
AI	Accelerated Internationalisation
AMOS	Analysis Moment of Structure
AVE	Average Valued
BGs	Born Globals
BRICS	Brazil, Russia, India, China, and South Africa
BSA	Business Software Alliance
CBI	Central Bank of Iran
CC	Cloud Computing
the CCU	Cloud computing utilisation
CDA	Confirmatory Data Analysis
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CR	Construct Reliability
CSPs	Cloud Service Providers
DF	Degree of Freedom
EB	Environmental Barriers
EDA	Explanatory Data Analysis
EM	Emerging Market
the EM-SMEs	Emerging Market Small Medium Sized Enterprises
EN	Environmental
FDI	Foreign Direct Investment
GFI	Goodness of fit indices
IaaS	Infrastructure as a Service
IB	International Business
IB	Informational Barriers
ICT	Information and Communications Technology
IDC	International Data Corporation
IFI	Incremental Fit Index
INFO	Informational
INVs	International New Ventures
IS	Information System
IT	Information Technology
JV	Joint Venture
KMO	Kaiser-Meyer-Olkin
LLL	Linkage Leverage and Learning
MARK	Marketing
MB	Marketing Barriers
MNEs	Multinational Enterprises
NIST	National Institute of Standards and Technology

OB	Operational Barriers
OECD	Organisation for Economic Co-operation and Development
OPER	Operational
PaaS	Platform as a Service
PDAs	Personal Digital Assistant
R&D	Research and Development
RBV	Resources Based View
RMSEA	Root Mean Square Error of Approximation
ROI	Return of Investment
SaaS	Software as a Service
SEM	Structural Equitation Modelling
SMEs	Small Medium Sized Enterprises
SOA	Service Oriented Architecture
TLI	Tucker-Lewis Index
UNCTAD	United Nation Conference on Trade and Development
UNDP	United Nation Development Programme
WOS	Wholly Owned Subsidiary

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Chapter One
I n t r o d u c t i o n

1.1 Introduction

The purpose of this introduction is to provide an overview of the research problem. The SMEs in Emerging Markets (the EM-SMEs) have many barriers for their internationalisation. The EM-SMEs with limited resources in their internal organisation and in their environment externally are feeble entities in order to overcome their barriers, that could hinder them to internationalise in an unchallenging path and even sometimes, the magnitudes of these barriers even barricade them for being active in foreign markets (Leonidou 2004; Jones, Fallon and Golov, 2000).

Nowadays, the application and the use of the latest advanced technology such a Cloud Computing (CC) has influenced the trend of internationalisation for these type of firms more effectively. Moreover, identifying and classifying the barriers of the EM-SMEs internationalisation from different studies could provide an opportunity for this research study to evaluate the effective impact of the CCU on the mitigation of these barriers.

Consequently, the findings of this research study will contribute in many ways as the key contributions of this research can be categorised theoretically, methodologically and empirically.

Firstly, the findings of this research study will contribute theoretically to both International Business (IB) and Information System (IS). Identifying and classifying a series of the EM-SMEs' internationalisation barriers will account as IB theoretical contribution while providing and confirming a series of effective the CCU's solutions to mitigate the EM-SMEs' internationalisation barriers will account IS theoretical contributions.

Secondly, this research study intends to contribute methodologically by applying SEM data analysis with the use of SPSS AMOS software to confirm its proposal conceptual-model and its hypotheses to analyse the effectiveness of the CCU based on the definition of cloud computing by National Institute of Standards and Technology (NIST, 2011). In addition, based on the NIST's definition of CC, this research study has developed a methodological method to quantify the level of integration of the EM-SMEs' integration with the CC.

Lastly, based on the empirical outcomes, this research study contributes empirically to confirm that the CCU facilitates the EM-SMEs to mitigate the informational, operational, marketing and environmental barriers in their internationalisation, as these facilitate them to receive the advantage of an accelerated internationalisation. In addition, this research contributes empirically to the decision-makers of the EM-SMEs as well as CSPs in order to get the most out of this phenomenon to facilitate their internationalisation more effectively.

To achieve the purpose of the research study, this chapter presents series of sections in order to provide an overview for the research problem. Section 1.2 presents the background of the research study that stipulates the outline of the literature review. In section 1.3, the statement of the research problem specifies what problem in research study is going to be solved and why solving this problem is so important.

In section 1.4, the gap in the literature will be specified; moreover, in this section different studies will be presented to support why this research is important, as well as proposing the

gap in the literature for its contribution of this research study. In section 1.5, aim and objectives of this research study will be determined and according to the gap in the literature reviews, the research's aim and objectives will be set up for the framework of this study.

In section 1.6, the scope of thesis will encompass of what will be relevant to achieve for the aim and objectives of this research study as well as the discipline relevancy, bias towards school of thoughts also this will justify "why". In section 1.7, the contribution and the significance of the research will be presented both theoretically and practically. In section 1.8, the proposed methodology for this study will be presented and finally, in conclusion the importance of this chapter will be summarised and concluded.

1.2 Research Background

Whilst the factors of Ownership, Localisation and Internationalisation (Dunning, 1988) and Uppsala theory (Johanson & Vahlne, 1977) try to justify the earliest wave of internationalisation for the MNEs and SMEs from developed to developing markets, some recent studies argue that the trend of internationalisation has been changed dramatically from its nascent. Nowadays, the core of many studies are focused on the pivotal factors that play in the accelerated internationalisation (Anderson and Wictore, 2003; Moen and Servais, 2002; Freeman, Edward and Schroder, 2006; Madsen, Rasmussen, Servais; 2000, Oviatt and MCDougall's 2005).

Originally, the most of studies believed that internationalisation is an incremental and gradual process that a firm needs to penetrate a host country by accumulating sufficient knowledge and experience. The Uppsala theory (Johanson & Vahlne, 1977) argues that lack of knowledge, experience and uncertainties in a new market could be considered as barriers for firms in order to speed up their internationalisation, hence firms need to gain more knowledge and experience in an incremental procedure in a host country to internationalise.

Therefore, at the highest level of uncertainties, firms strategically can only inaugurate to export in order to test the new market for the penetration. Subsequently, firms are able to prolong their activities in a host country with acquisition of more experience and knowledge, and then they will be able to reach to a level of certainty, once they will be able to control their whole resources in an array of vertical integration.

Larger firm orientated literature (Osland et al. 2001) suggests that setting up vertical integration as either a "*Wholly Owned Subsidiary*" (WOS) or FDI in a host country enables firms to have the maximum control of their resources but this level of investment makes firms more vulnerable for any turmoil in the host countries. However, the propensity for a higher investment in the foreign markets could be seen for larger firms' strategies rather than SMEs' path, whereas, SME because of limited resources are not able to opt certain modes of entry for their internationalisation path, where exporting and licencing could be considered as the risky choices for the strategy path of these firms. In the line with this concept, Susman (2007) views firms' internationalisation as "*a process in increasing involvement in international markets*" and carazo and Lumisiste (2010) argue that SMEs' decisions for internationalisation are based on the structural nature of their activities which have been complied with the target market needs where they wish to operate.

Therefore, many empirical studies show that many young and small firms despite having little experiences, knowledge and capital resources; they are very agile in terms of exporting at very first early stages after their foundation. Moreover, it was studied that, the prevalence and emergence of these type firms are hugely based on the influences of the globalisation trend and the emergence of advanced innovations which have been occurred by ICTs (Knight and Cavusgil, 1996), in addition, the key of these influences exist in the Internet capabilities (Bell and Loane, 2010). It is noteworthy that, many studies emphasis that firms in all sizes can benefit from the capabilities of advanced ICTs, such as lower marketing expenses, lower communication costs, the standardisation of prices, reducing time in circulation of information, enhancement in buyer and seller's communications, transparency in distribution channels by eliminating and/or setting intermediaries (Chattell, 1998; Quelch & Klein, 1996).

By the advent of advanced ICTs some alternative views suggest that some firms by using ICTs innovations are able to internationalise soon after their inception (Bell & Loane, 2010; Pezderka and Sinkovics, 2011; Rennie, 1993; Madsen and Servais, 1997; Knight and Cavusgil, 1996). As the result of this, accelerated internationalisation (Freeman, Edward and Schroder, 2006; Anderson and Wictore, 2003; Moen and Servais, 2002; Madsen, Rasmussen, Servais; 2000) justified as a competitive advantages for a speedy internationalisation with utilisation of advanced ICTs.

Furthermore, the theory of leapfrogging opportunity theory became more prevalent (Tsao et al. 2011; Khan et al. 2011; Hedlund and Kverneland 1985) for the firms in order to shorten the traditional internationalization process. Therefore, the emergence of Born-globals (BGs) (Pla-Barber and Escribá-Esteve, 2006; Rennie, 1993; McKinsey & Co., 1993; Madsen and Servais, 1997; Oviatt and McDougall, 1999, 1994), and "*International New Venture*" (INV), (McDougall, Shane, and Oviatt, 1994) could fortify the accelerated internationalisation theories by utilising of effective ICTs towards accelerated internationalisation by mitigation of internationalisation barriers.

In a study, Tanev (2012) spotted on six characteristics of BGs. Firstly they are highly activated in international market from its advent. Secondly, they are able to set out activities with limited financial and tangible resources. Thirdly, as an entrepreneurial orientation company they can be set up internationally. Fourthly, these firms are able to differentiate their strategies. Fifthly, they are cutting-edge industries oriented. Sixthly, they can be leveraged by the advanced ICTs, and finally they are able to apply for independent intermediary distributors. Therefore, the result of these advantages, and the impact of advanced ICTs on the SMEs from emerging markets (the EM-SMEs) enable these firms to internationalise more aggressively and rapidly in order to engage in internationalisation activities; where, scholars such as Matthews (2006) and Bell & Loane, (2010) mentioned as "*the second wave of internationalisation*".

Therefore, Mathews (2006) sees the pivotal elements of "Learning, Leverage and Linkage" are known as the strategic approach for the firms in emerging markets in order to penetrate developed markets. Moreover, Knight and Cavusgil (1996) emphasised that the

globalisation of business activity could be affected by the Internet communication technology; as well as, Rennie (1993) who argues the knowledge-based companies have competitive advantages that make them to provide products and services in better value added.

Regarding above studies, it can be inferred that firms by utilising the advance ICTs are able to reach to a potentiality in order to mitigate the internationalisation barriers and consequently to set up a speedy internationalisation. Moreover, the emergence of new technologies, modern approaches in ICTs and internet enable SMEs to be converted to INVs /BGs and benefit from vast spectrum of facilities and capabilities of computing technologies and being more efficient than ever. These facilities enable these types of firms particularly small and medium size enterprises from emerging markets (the EM-SMEs) to acquire many distinctive competitive advantages towards their internationalisation.

Nowadays, the EM-SMEs have better opportunities to mitigate their barriers in internationalisation and consequently these firms are able to accelerate their international businesses by utilising the advanced ICTs. Being able to accelerate internationalisation would be considered as a rational strategy and a competitive advantage that allows the EM-SMEs to benefit from the potentialities of foreign markets form the early days of their emergence (Oviatt and MCDougall's 2005). In the line with the accelerated internationalisation, BGs are considered as type of companies that from the beginning of their business activities, they follow the vision of becoming global players and theses firms are able to be globalised quickly without any long term commitments in domestic or internationalisation markets.

1.3 Statement of the Research Problem

This research study intends to investigate the effectiveness of the CCU in mitigation of internationalisation barriers where the EM-SMEs are able to accelerate their internationalisation by the use of CC; therefore, at the first stage, it is important to identify those barriers that could hinder the EM-SMEs internationalisation. Therefore, after classifying the EM-SMEs' internationalisation barriers, the study intends to address the possible effective solutions of the CCU for those barriers. Identifying the

internationalisation barriers for the EM-SMEs along with evaluating the characteristics of those barriers enable this research study to find out how these barriers could be mitigated by the effective impact of the CCU. Thus, specifying the taxonomy of the EM-SMEs' internationalisation   barriers can assist this research to evaluate the possible effective impacts of the CCU on mitigation of these barriers, as well as, this study will be enabled to evaluate whether the CCU would be an effective strategy for the EM-SMEs towards their accelerated internationalisation.

Generally, the EM-SMEs suffer from typical and similar internal and external barriers in the emerging markets environments. The external barriers in the emerging markets could be classified into elements such as poor macroeconomic environment, high inflation, hefty rules and regulations, high interest rates, various tax and labour regulations, various and unstable rules, long and despotic procedures for ensuring bank loans, lack of competent business development services, the shortage of foreign currency and implementing different policies with discrimination against enterprises (Jones, Fallon and Golov, 2000; Bekaert and Harvey, 2003).

Moreover, it can be realised that the EM-SMEs have some typical internal-barriers for their internationalisation. these internal barriers can be classified to informational, operational, marketing and environmental as this study intend to shed lights on these mentioned classified-barriers to find out to what extent Cloud Computing Utilisation (the CCU) as an advanced ICTs could mitigate effectively these barriers for the EM-SMEs in order to enable them to accelerate the process of internationalisation.

It is noteworthy that the most studies which have been conducted so far are based upon web 2.0 technologies while by the advent of web 3.0 has revolutionised Internet, where the service-oriented architecture (SOA) in this environment has been possible for the users, as this phenomenon has rapidly dominated on the world-computing paradigm (Fensel, 2007). Thus, it is important to shed lights on the elements of this innovation in order to scrutinise how this technology can facilitate SMEs from the emerging markets to mitigate their barriers towards an accelerated internationalisation.

Table 1.1 - Definition of different types of Web (Fensel, 2007)

Type	Definitions	Function
Web 1.0	*"Web technology as an infrastructure and underlying infrastructure for integration of services at a worldwide scale" (2007: xxviii),*	Read,
Web 2.0	*"Semantic Web technology as a means to abstract from syntax to semantics; and Web 2.0 as a means to structure human-machine cooperation in an efficient and cost effective manner" (2007: xxviii).*	Read and Write,
Web 3.0	*"Service Web 3.0 will place computing and programming at the services layer providing the real goal of computing: problem solving in the hands of end users through a properly balanced cooperation approach" (2007: xxviii).*	Read, Write and Execute,

According to the definition of Fensel (2007), the evolution of web is defined in table-1.1. It is noteworthy that conducting a comprehensive research in the emerging markets in terms of testing the effectiveness of the CCU for gaining accelerated internationalisation for the EM-SMEs is important when the CC as a phenomenon can be applied as a new strategic approach for the EM-SMEs in order to accelerate their internationalisation effectively.

The phenomenon of CC (web 3.0) has change dramatically the world of computing and internet in recent years. The cloud computing is a new approach for data processing, storing, and servicing that has revolutionised the world of ICTs. The cost efficiency of CC benefits SMEs especially those from the emerging markets (the EM-SMEs). The EM-SMEs in the form of born globals (BGs) benefit from the advantages of this new technology in order to penetrate their target markets faster and cheaper.

Therefore, this research study has focused on the new generation of advanced ICTs innovation as "Web 3.0" (Could Computing), which is important to find out to what extent this phenomenon could be effective to mitigate internationalisation barriers for the EM-SMEs' internationalisation.

Based on this, a study shows that SMEs are able to ease their internationalisation by utilising CC technology through leapfrogging the advanced ICTs investment. These firms are able to mitigate the administration costs and by saving in recruiting skilful employees

(Ensley, 2005). Moreover, due to the EM-SMEs limited capital resources and expert employees, these firms are able to be converted into BGs. By converting to BGs, the EM-SMEs can benefit from CC advantages in order to reduce their general costs, when they do not need to spend more on purchasing additional hardware and software as their application can be launched and be run on the vendor servers.

In addition, the EM-SMEs do not need to pay in advance any expense for the start-up, as these applications are ready to use whenever (geographically) these firms subscribe. Moreover, firms need to pay for whatever they use, also the payment would be charged exactly for the right intended usage software and finally the usage is scalable, it means depending on their scale of demand, these facilities can be modified based on the usage (Interoute, 2012). Therefore, the CC has brought cost mitigations, ubiquitous, possibility for paying of usage scale (Throng, 2010). In addition, many other benefits can be named that can persuade the EM-SMEs to make decision in order to utilise this advanced technology for their internationalisation approaches and as BGs, these firms enable to interconnect globally to set up their secured stream-revenues with the other global value chains.

Given that The National Institute of Standards and Technology (NIST) defines Cloud Computing as,

> "*a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g. networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service.*" (Mell and Grance, 2011:2)

Due to above definition, it can be inferred two important aspects of the CC can be implicate distinctively. At one side the attribute of control in which enable the appliers to control their resources ubiquitously, conveniently and based on demand network accessibility along with configuring the resources in way to control their operational tasks beyond the geographical boundaries. From other side, also the concept of "being quickly

released and provisioned with minimum of managerial services and efforts" implies to capability of this technology for any barrier mitigation.

Therefore, regardless of the CC's recognised-capabilities, this technology as an advanced ICT enables firms to centralise the control of their resources (Vaquero et al., 2008). Moreover, based on three main CC appliers such as cloud users/customers, cloud vendors, and cloud providers (Dargha, 2009), strategic business decision-makers are able to <u>control their resources</u> virtually and dynamically by connecting to suppliers, employees, customers, and partners. Whereas in previous grid Internet features, players were just able to benefit from some limited decentralised controls and the static attributes (Vaquero et al., 2008).

Therefore, by understanding of the potential characteristics of the CC and the strategic globalised-vision of the firms, this can be implied that, this strategic approach might be effective for the firms in order to be applied for their internationalisation where firms always try to gain more control in their expatriate businesses in host countries (Osland et al., 2001).

Whereas, it has been stated that more investment in a host country can be risky for the enterprises (White and Fan, 2006). In addition, the capability of remote controlling of CC enable SMEs to simulate their international activities beyond the host country boundaries as BGs through internet (McKinsey & Co., 1993; Madsen & Servais, 1997; Oviatt & McDougall, 1994, 1999), so it is important to test how the CCU can facilitate a firm to accelerate its internationalisation by eliminating the internationalisation barriers. As, this research study intends to test the effectiveness of using CC as a strategic approach to mitigate the internationalisation barriers towards an accelerated involvement.

1.4 Gap in the literature

The capabilities of the CC have made this phenomenon to be at the centre of attention of many scholars and many business practices. Mitigating the administration cost of internationalisation (Ensley, 2005; Misra and Mondal, 2010), facilitating to save cost of IT ownership and accelerating time to market due to ready-to-use, dynamically scalable

computing infrastructure and software services offered on cloud as pay-per-use basis (Namjoshi & Gupte, 2009). In addition, despite many studies which have been done on the CC, yet few studies have been conducted so far to identify the main factors of fast pace growth of the CCU among the EM-SMEs (Weisinger 2014; Leavitt 2009). For example, IDC[1] is forecasting 37 percent annual growth in the emerging markets through 2017, nearly twice the growth rate seen in developed markets.

Moreover, despite growing in utilisation of the CC in emerging nations, these countries are still far behind developed countries. Business Software Alliance (BSA) by a survey in 2013 found that the BRICS[2] countries are lagged to implement appropriate policies to incentivise firms to utilise CC. Moreover, the survey of the 24 countries ranked the BRICS nations near the bottom. However, it looks like this situation is about to change rapidly and dramatically (Weisinger 2014). For examples, Persinger, Civi, Vostina (2007) propos further research studies need to be conducted,

> "*Nevertheless, emerging markets present opportunities for Born Global firms whose founders have the above mentioned characteristics such as high need for achievement, proactive personality and global orientation. These entrepreneurs possess what is necessary to become successful in the turbulent and risky business environment of the emerging economies. Still, it should be noted that further examination of the Born Global entrepreneur is needed to better understand their driving forces in such environments". (Persinger, Civi, Vostina 2007:80)*

Similar to Persinger et al. (2007) proposition, Kuyoro et al. propose that,

> "*Cloud computing has the potential to become a frontrunner in promoting a secure, virtual and economically viable IT solution in the future*" (2011:253).

Moreover, Loebbecke et al. (2011:280) state that,

> "*The future will show whether current rather 'cloud critical' assessments in the real user world will remain dominant and whether the diffusion of cloud computing will remain limited. Alternatively, laws and regulations as well as a company's perception of compliance requirements may change. Perhaps, rather sooner than later, procuring IT services from the cloud will be as 'normal' as it is for energy and communication services. We hope that the presented method and any subsequent debate will stimulate further research into the problem".*

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[1] International Data Corporation.
[2] Brazil, Russia, India, China, and South Africa

Furthermore, other scholars have mentioned the importance of this research study. Bell & Loane (2010) believe that greater understanding needs to be done to evaluate the effect of Web 2.0 on SMEs internationalisation. They add that more studies about Web 2.0 facilitation would help other smaller firms to perceive the effectiveness of this tool to overcome the barriers to international marketing and consequently using this approach in their business strategies and public policy. In addition, Kshetri (2010) mentioned that,

> *"One limitation of our studies is that, were viewed the development of the cloud computing industry only in big developing economies that have reasonably well developed IT industries. We thus excluded economies at the bottom most of the global economic pyramid. An additional limitation of this research is that it lacks primary data."* (Kshetri, 2010:13)

1.5 Research aim and objectives

The primary aim of this research is to investigate the effectiveness of Cloud-Computing Utilisation (the CCU) as a facilitator that enables the EM-SMEs to mitigate their internationalisation barriers and enable them to speed up their internationalisation. Therefore, in other words the aim of this research is:

> To investigate the effectiveness of the CCU for the EM-SMEs to mitigate internationalisation barriers towards an accelerated internationalisation;

In order to address the research aim the following research objectives need to be determined:

Objective 1: Conducting a comprehensive literature review for identifying the internationalisation barriers for the EM-SMEs;

Objective 2: Conducting literature review for identifying the capabilities of the CCU and its potentiality for the EM-SMEs' internationalisation barrier mitigation;

Objective 3: Proposing and developing a conceptual framework from the literature review;

Objective 4: Analysing data empirically to test the research's hypotheses and its model;

Objective 5: Proposing the EM-SMEs' managers and the CSPs' managers[3] the possible solutions of the CCU for internationalisation barriers mitigation;

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[3] The managers of Cloud Service Providers

1.6 The Scope of thesis

This research study aims to investigate the effectiveness of the CCU on the mitigation of internationalisation barriers for the EM-SMEs towards and accelerated internationalisation. In order to achieve this, the scope of thesis has been set to identify the EM-SMEs internationalisation barriers. By identifying these barriers from one side and recognising the capabilities of the CCU from other side this research study will be able to investigate the effectiveness of the CCU on mitigation of the EM-SMEs' internationalisation barrier. Consequently, it will be possible for this study to examine that by alleviation of internationalisation barriers, the EM-SMEs are able to accelerate their internationalisation.

The emergence of cloud computing as an advanced technology has changed the capacities in "World Wide Web". These massive changes have enabled the EM-SMEs to benefit from numerous advantages to expand their businesses globally with lowest costs and highest efficiency. Moreover, the spectrum of ubiquitous applications have facilitated enterprises to be encountered of array of updated information, faster operation, cheaper communications and efficient networking; in addition, firms are able to apply suitable approaches for their marketing mix, with flexible plans for their competitive advantages in global environment.

Therefore, by appreciation of the efficiency and capability of the CCU, the study will be able to shed lights on CC potentialities that could bring for the EM-SMEs efficiency towards mitigation of internationalisation barriers and consequently lead to accelerate in internationalisation.

It is noteworthy that the scope concept of internationalisation in this research study is based on the Welch and Luostarinen (1988) study's definition that refers to any activities of the EM-SMEs' international activities as,

> "*The process of increasing involvement in international operations;*"
> (Luostarinen, 1988:36)

Moreover, according to the NIST (2011) definition of cloud computing and the aforementioned definition of internationalisation this research study will investigate the effectiveness of the CCU on the EM-SMEs' internationalisation barriers mitigation towards an accelerated internationalisation.

1.7 Research Methodology

The aim of this research study is to identify the effectiveness of the CCU in mitigation of internationalisation barriers for the EM-SMEs in order to accelerate their internationalisation. Thus, this research study needs to test the effectiveness of the CCU on the mitigation of the internationalisation barriers and according to Saunders et al. (2009) as a positivist research, the study initially attempts to investigate the proposition of the hypotheses and its conceptual model for investigating these effectiveness of the CCU. Therefore, a deductive research needs to be conducted when this approach initially tests the hypothesis and model of the research study in order to confirm a theory that is already stated. A quantitative approach would be the best appropriate method for the purpose of this research study. Therefore, in order to scrutinise the effectiveness of the CCU firstly this study intends to identify whole internationalisation barriers of the EM-SMEs and then analyse quantitatively whether or not the CCU can be significantly effective to mitigate the internationalisation barriers for these enterprises.

According to the research question and proposed hypotheses of this research, this study intends to be conducted quantitatively. The primary reason for conducting quantitative research is to find out how many the EM-SMEs have propensity to utilise CC for mitigation of their internationalisation barriers. Moreover, quantitative method is designed specifically to produce accurate and reliable measurements that permit statistical analysis for this study. Furthermore, a quantitative research is appropriate method for measuring the effectiveness of the CCU in mitigation of the EM-SMEs' internationalisation barriers in order to quantify to what extent the CCU as the latest approach can be applied for mitigation of internationalisation barriers towards accelerated internationalisation.

Concerning the research question and according to the definition of the emerging markets, many countries can be categorised as emerging markets. However, this research study

intends to nominate two countries of Turkey and Iran for its sampling and data collection. Sampling from these two countries, as the emerging markets are valid because firstly, SMEs in these two markets have minimum psychic distance but from other side the markets have the maximum distance from each other because of the efficiency of the SMEs in their international activities. In addition, collecting data to identify the effectiveness of the CCU in mitigation of internationalisation barriers in these two chosen contexts are valuable, when Turkey economy benefits far better from internet integration whereas, Iran economy is suffering from a series of embargoed policies and economic sanctions that deprived this market to be more effective in the use of e-businesses.

Therefore, collecting data from these two countries could lead to illustrate the broader and reliable picture of the emerging markets' potentialities and deficiencies. Where these two countries represent spectrum of stability and instability in market structure of the EMs thus, the collected data from these bipolar economies in the emerging markets could lead to a broader picture of the EMs and consequently this can be generalised for other countries that are considered as the EMs.

As it has mentioned above, this research study intends to use a quantitative method for its study by using of advanced statistical techniques such as the structural equation modelling (SEM) and factor analysis. Moreover, the quantitative research can be used to create models that predict whether the EM-SMEs hold a particular opinion or would act in a certain way based on observable characteristics in order to determine whether the results are statistically significant.

The important use of SEM is to enable researchers to determine whether a certain model is valid and it allows multiple measures to be associated with a single latent construct. Moreover, due to proposing conceptual framework for this research study it is important that to find out the model is valid. Thus, as the result of the SEM would be appropriate for this research study where not only the confirmatory of the model is important but also, this method allows the researcher to analyse other elements such as factor analysis, path analysis and regression for determining whether the result are statistically significant. Furthermore, this research study intends to deploy the questionnaire based on an on-line

survey. The survey is going to be deployed electronically and randomly in two nominated emerging markets in Turkey and Iran.

The advantages for an online survey can be mentioned such as the information could be gathered faster in comparison of the traditional method. Using on-line questionnaires is more cheaper, due to direct responses to the system the collecting data is more accurate, the results can be analysed more quickly at any time, due to accessing to the internet the majority of people prefer to answer the survey online rather than using telephone. It save time, and can be transfer easily to any statistical software for interpretation.

Firstly, before commencing and conducting the main survey, this research intends to deploy a piloting test in order to examine the reliability and validity of the designed questionnaire; moreover, the piloting test will be deployed randomly among the top managers of the EM-SMEs. It is noteworthy that pilot study procedures can improve the internal validity and reliability of a questionnaire that administers the questionnaire to pilot subjects in exactly the same way as it will be administered in the main study in order to identify ambiguities and vague questions in the questionnaire (Peat et al. 2002).

1.8 Contribution and the significance of the research

Regarding the gap in the literature as it has been mentioned in 1.4 and according to the research study that intends to scrutinise to what extend the impacts of the CCU can be effective for the EM-SMEs to mitigate their internationalisation barriers in order to accelerate internationalisation. The contribution of this research study can be specified in three main categories theoretically, methodologically and empirically. Firstly, the theoretical contribution can be classified into IB and IS. From the IB perspective this research study intends to contribute theoretically by identifying and classifying the EM-SMEs' internationalisation barriers from different studies which have been conducted based on this field and from the IS perspective the study intends theoretically contribute to propose a series of possible solutions for each identified internationalisation barriers through utilising CC. Secondly, this research is intending to contribute methodologically by applying SEM data analysis and with applying SPSS AMOS software in order to confirm the proposal conceptual-model and the hypotheses. This research also contributes

methodically through decomposing the definition of the CC by National Institute of Standards and Technology (NIST, 2011) in order to develop a methodological method to quantify the level of EM-SMEs' integration with the cloud computing. Thirdly, this research study intends to contribute empirically by examining the collected data in order to determine whether the proposed solutions of the CCU are significantly effective for the EM-SMEs to mitigate the informational, operational, marketing and environmental barriers in their internationalisation as this can be implemented as a strategic approach for EM-SMEs to accelerate their internationalisation.

Therefore, according to the gap in the literature as it has mentioned in 1.4 the findings of this research study from one side, will contribute theoretically to a deep understanding of the EM-SMEs' internationalisation barriers mitigation through the CCU. As, these findings will contribute to shed lights on the existence gap in the current literature about the effectiveness of the CCU for the EM-SMEs to mitigate their internationalisation barriers in order to speed up the trend of internationalisation. From one side the study will be able to contribute empirically to the practice of the EM-SMEs' managers and CSP's managers in order to apply CC for alleviation of internationalisation barriers and accelerate the trend of internationalisation in foreign markets.

1.9 Summary

To sum up, this chapter presented the background of the research study; the statement of the research problem was clarified. In addition, the existence of gap in the literature was explained and assigned completely. Moreover, based on the gap in the literature the research aim and objectives for this research study were set and specified. Furthermore, the scope of thesis provided those elements that the study will be focused upon them. The methods for collecting, analysing and data sampling were mentioned in the methodology section of this research study and finally the contribution of this research study was provided. The utilisation of CC enables the EM-SMEs to be more successful in the risky and unstable business environment in the emerging economies. Where this research study intends to examine further study on the BG entrepreneur, as it is needed to have better understanding of their drives in such environments and their constraints in their resources. As it has been stated by Kuyoro et al. (2011) that the CC has a potentiality to

become a frontrunner in promoting a secure virtual and economically solution in the future. It is important to investigate to what extent this phenomenon can have a significant effect on alleviating the internationalisation barriers for the EM-SMEs and to what extend also this technology can be effective to accelerate and speed up the trend of the EM-SMEs' internationalisation.

Chapter Two:
Literature Review

2.1 Introduction

In this chapter, the framework of the literature reviews of this research study has been presented. Investigating the effectiveness of the CCU in mitigation of the EM-SMEs' internationalisation barriers towards speedy internationalisation has been specified as the aim of this research study. Moreover, according to the objectives of this study, a comprehensive literature review will be conducting systematically to identify the internationalisation barriers for the EM-SMEs; and identifying the capabilities of the CCU as proposal solutions for mitigation of these barriers. In addition, this chapter will be presenting relevant literature reviews for the characteristics of the EM-SMEs.

Thus, this chapter will review the literature for identifying different theories of internationalisation, and classifying of the EM-SMEs' barriers internationalisation; moreover, this chapter will be reviewing the literature for utilising a systematic advanced ICTs strategy such a Cloud Computing (CC) for mitigation of the EM-SMEs' internationalisation barriers towards an accelerated internationalisation.

Furthermore, according to previous studies in literature review and based on the EM-SMEs' internationalisation barriers four areas of informational, operational, marketing and environmental barriers will be systematically identified and classified. Finally, the stream of research aims to accommodate some IB barriers with CC solutions in order to justify the effectiveness of the CCU-solutions for mitigating of internationalisation barriers towards an accelerate internationalisation.

2.2 The Emerging markets

Typically, emerging markets with rapid economic growth are commonly in transition to increase transparency, deregulation, privatisation, growth of middle class population, availability of consumer goods and financial markets and lack of stability in both politic and economy. Cavusgil (1987:90) states that,

> *"Emerging Markets (EMs) are high-growth developing countries that represent attractive business opportunities for Western firms"…"EMs share remarkable features in terms of economic potentials"*.

These countries have strong propensity to be active in the process of world political and economy movements and as result of these, the EMs strive to acquire the latest technologies in order to develop and enhance their global competitive advantages (Persinger et al., 2007). Moreover, Lettieri and Raimondi (2009) mention that emerging markets because of their large populations, abundant resources, and large markets usually they are regionally powerful and significant in their geopolitical advantages and these factors make these countries so attractive for investment.

Whereas, further studies show that the emerging markets countries such as Brazil, India and China suffer from ineffective institutions in order to control the market exchange in areas such as capital, labour, and product market. Where the intuitions have not a long-term developed mechanism in government regulatory to make the market more efficient and convert these markets more effective similar to developed countries such as North America and Western Europe (Khanna and Palepu's 2000). In addition, due to lack of efficient institutional-regulatory in emerging markets, often the EM-SMEs try to circumvent the problems and make up the inefficiencies in the market with applying efficient arrangements through creating business-groups to enhance their capital, labour and products in their home markets.

For instance, in a research study, it is stated that five important "obstacles" cause failure for attraction FDI (internationalisation) in Russia as an emerging market. The influence of political and economic culture on government policies improvement; lack of an efficient

taxation system; the existence of corruption and monopoly structure of the market; slow trend of privatisation process and lastly lack of equal and healthy competition for enterprises in the market (Jones, Fallon and Golov, 2000; Dcruz and Hameed, 2012).

In addition, one of the characteristic of emerging markets can be seen in a consistent interference of central government. As these markets always being controlled by central government. Moreover, in these markets, government tries to reserve the capacities of industrial sectors by those companies, which are controlled and supervised by it. The entrepreneur-firms are not free enough to choose their own trajectory and apply their own strategic marketing. Also initially, these companies require obtaining license from local government before engaging with any activity in the market. As this limitation and constraints would be considered as main barrier for many the EM-SMEs to convert themselves to modern and large enterprises in the emerging markets, alternatively many small firms are operating at small scale in varies industries uneconomically (Singh, 2009). The group affiliation as a strong network enables the EM-SMEs to gain their competitive advantages towards a proper strategic position in order to maximise the control key sources of products and essential elements of markets towards smooth daily operations (Khanna & Yafeh, 2005).

Hence, this study will focus on two countries of Iran and Turkey, the environmental characteristics of main economic and business of these two countries reflect of those elements of emerging markets, which have been mentioned in aforementioned studies. Iran despite possessing significant agricultural, industrial, and service sectors, statistics show that the economy is marked by inefficiencies, and greatly reliance on oil and gas exports. Moreover, the Iranian government directly owns and operates hundreds of state-owned enterprises and indirectly controls many companies affiliated with the body of the government. Due to intensive embargos against Iran and following the expansion of international sanctions in 2012 on Iran's Central Bank and oil exports, this country as a strategic policy tries to distort the statistical figures for demonstrating inconsequentiality of these actions. These statistical figures including inflation, price controls, subsidies, and a banking system holding billions of dollars of non-performing loans bear down the economy and undermining the potentiality for growing the private sector. In addition,

fiscal and monetary constraints, significantly reduced Iran's oil revenue, and caused government-spending cuts, and prompt currency depreciation. Iran's economy contracted for the first time in two decades during both 2012 and 2013. Furthermore, private sector activities include small-scaled workshops, agricultural industry, some manufacturing, and services, in addition to medium-scaled construction, mining, cement production, and metalworking along with significant informal market activities flourish the economy however, corruption is widespread and within these years, Iran has been suffered from high unemployment (The World Factbook, Iran 2016).

Whereas, Turkey benefits from free-market economy policy that is largely driven by its industry and service sectors and its traditional agriculture sector, which still accounts for about 25% of employment. This country implements an aggressive privatization program that has reduced state involvement in basic industry such as banking, transport, and communication. In addition, the emergence of middle-class entrepreneurs is adding dynamism to this economy and this country is expanding its production beyond the traditional textiles and clothing sectors also industries such as automotive, petrochemical, and electronics are rising as other important Turkey's export commodities. After Turkey experienced a severe financial crisis in 2001, Turkey adopted financial and fiscal reforms as part of an IMF program. This reform could help the country's economic fundamentals and make the economy more efficient with average growth of 6% annually until 2008 however, worsening in global economic conditions contracted the economy in 2009. Despite this condition, Turkey's well-regulated financial markets and banking system helped the country to pass the global financial crisis, and GDP rebounded strongly to around 9% in 2010-11. Moreover despite these positive trends and due to turmoil within Turkey's neighbourhood causes this economy vulnerable to destabilising shifts in investor confidence and the consumer demands both domestically and in Europe and consequently leaded to drop in GDP growth to 4.4% in 2013 and 2.9% in 2014. Furthermore, the economy of Turkey retains significant weaknesses as this country relatively has high current account deficit, uncertain commitment to structural reform, and remains dependent on volatile and short-term investment to finance its large current account deficit. Table-2.1 shows brief list of key elements of emerging markets economic and business environment between two countries of Iran and Turkey (The World Factbook, Turkey 2016).

Table 2.1 - The key characteristics of economic- Iran and Turkey- emerging markets

Elements	Iran	Turkey
Population	81,824,270 (July 2015 est.)	79,414,269 (July 2015 est.)
Unemployment Rate	10.5% (2015 est.) data are according to the Iranian Government	10.4% (2015 est.)
GDP	$387.6 billion (2015 est.)	$733.6 billion (2015 est.)
Export	$78.99 billion (2015 est.)	$153.6 billion (2015 est.)
Import	$70.63 billion (2015 est.)	$204.3 billion (2015 est.)
GDP Growth Rate	0% (2015 est.)	3.8% (2015 est.)
Labour Force	29.07 million	29.4 million
Budget surplus (+) or deficit (-)	-3.5% of GDP (2015 est.)	-1.7% of GDP (2015 est.)
Inflation rate (consumer prices):	12% (2015 est.) official Iranian estimate	7.7% (2015 est.)
Stock of direct foreign investment – abroad	$4.67 billion (31 December 2015 est.)	$44.98 billion (31 December 2015 est.)
Internet hosts:	197,804 (2012)	7.093 million (2012)
Internet users:	44.1% (July 2015 est.)	53.7% (July 2015 est.)
Natural resources:	petroleum, natural gas, coal, chromium, copper, iron ore, lead, manganese, zinc, sulfur	gold, limestone, iron ore, coal, copper, barite chromium, antimony, mercury, borate, (strontium), emery, feldspar, hydropower, marble, perlite, celestine magnesite, pumice, pyrites, clay, arable land,

2.3 The SMEs

International entrepreneurship and internationalisation among SMEs is a subject of considerable modern relevance, mainly it leads to growth results of "*cross-border venturing*", and presents the SMEs' capacities for stimulation of national economic development ultimately global levels (European Commission, 2007). Typically, SMEs suffer from lack of financial resources, expert labours and knowledge in order that enabling them to internationalise (Knight and Cavusgil, 2004). SMEs are a very diverse category and these businesses are comprised from wide array. The definition of SMEs can varied in different countries (Ayyagari, Beckand Demirgüc-Kunt 2003) as they usually are categorised according to the number of employees, assets, and values of sales; however, the most common type of classification are based on the number of employees.

For example in large number of OECD, EU, developing countries, the upper limit of number of SMEs employees are defined as 200-250 whereas in Japan is 300 and the USA is 500 employees (OECD 2004). Moreover, according to the Central Bank of Iran (CBI) SMEs in Iran are classified into four categories: firms with 1-9 employees (Micro), firms with 10-49 employees (Small), firms with 50-99 employees (Medium), and firms with over 100 employees are being considered as Large Enterprises. Whereas, in Turkey, the Medium sized enterprises is defined with employees between 50-249.

In recent years, relatively economies of several emerging markets have started a transitional process towards releasing entrepreneurial potentialities and objectives for their local progress (Gaur & Kumar, 2009; Singh & Gaur, 2009). This means the important role of SMEs for the governments of emerging markets has been revealed clearly more than before. However, the size of firms in emerging market is important for the local government, when the government have peace of mind for imposing effective restrictions upon private sector activities.

Moreover, according to Bonaccorsi (1992) SMEs need to grow in their home country initially in order to get more strength in financial, technological, and expert personnel for involving with export activities (Singh 2009). However, technological capabilities along with applying effective marketing strategies have been known as important resources for

firms' long-term sustainability with maintaining of their competitive advantages. Furthermore, according to '*endogenous growth theory*', Grossman & Helpman's (1995) state that the dependency of the export performance is relatively set based on the '*technological competitiveness*' and the level of applied innovative approaches that can be used by a firm.

2.4 The EM-SMEs

Similarly, to the counterparts in developed markets, the EM-SMEs suffer from lack of financial resources, expert labours and know-how in order to be able to internationalise; while, the advanced technology in the ICTs enables them to solve these deficiencies. Whereas, innovation, organisational capabilities, and the attributes of BGs firms could provide an opportunity in order to expand themselves into foreign markets in a short period of time (Knight and Cavusgil, 2004).

Unlike developed countries firms which tend to expand internationally through FDI or with high level of commitment, the EM-SMEs intend to expand internationally through lowest level of commitment by exporting (Vernon-Wortzel & Wortzel, 1988; Singh, 2009). Moreover, due to intense competition in the domestic markets, the EM-SMEs show strong propensity towards exporting, where exporting would be considered as a complementary activity for achieving scale economies of what they have gained in domestic market. In addition, based on the resources based view (RBV) theory that has been known as a theoretical framework for exporting strategy (Wilkinson & Brouthers, 2006; Lopez-Rodriguez & Garcia-Rodriguez, 2005; Dhanraj & Beamish, 2003; Andersen & Kheam, 1998) the EM-SMEs are considered as unique pile of distinctive resources where, these distinctiveness could be considered as their competitive advantages in the foreign market (Barney, 1991).

As the result of this, the EM-SMEs could be differentiated in market in four areas of being exquisite, scarce, unparalleled, and 'non-substitutable'. In addition, the other aspect of firms from emerging markets is their small size of in comparison of their counterparts in developed countries (Singh, 2009).

Innovation in ICTs and advanced technology provide emerging markets with the opportunity to accelerate economic development (Hanna, Guy & Arnold, 1995; Prayag, 2001; UNDP[4], 2001). In addition, the advanced ICTs have mitigated the administration costs and the necessity of hiring skilful users (Ensley, 2005) and it has been argued that enterprises in emerging markets could speed up the trends of internationalisation by applying five strategic approaches such as imitation, uniqueness, flexibility, cooperation, and control (Miller, 1992). Researchers believe that because of some critical issues such as technological assets, know-how, R&D capabilities, management skills, and global brand, the EM-SMEs are motivated to expand internationally to compete severely with other advanced counterparts from developed markets in the global market (Lopez, Kundu and Ciravegna, 2009). Whereas, emerging markets are still passing their infancy transitional period towards what developed countries are benefiting from (Chacar & Vissa, 2005).

Thus, it seems the possibility of achieving significant economic growth through utilising of advanced and less costly technology is attractive, as it was indicated that there would be no alternative approaches for emerging markets in technology exploitation except leapfrogging the advanced technologies (Choucri, 1998; Mansell & Wehn, 1998; Davison, Vogel, Harris, & Jones, 2000).

Furthermore, it has been argued that the EM-SMEs might internationalise in a gradual international involvement when they intend to expand internationally through export mode of entry in order to penetrate to a target market. The slow pace of internationalisation can be argued when these firms need to acquire some knowledge and information before entering to the target markets in order to have better experience and ultimately reduce the level of risks at a successful penetration in foreign markets (Johanson & Vahlne, 1977).

Whereas, in a larger scale EM-MNEs could be categorised as the latecomers that could utilise the advanced technologies in order to accelerate their internationalisation. These firms do not need to replicate the entire previous technological trajectory for their internationalisation (Mathew 2006). According to Mathew's study (2006: 5-27), '*Linkage, Leverage, and Learning*' could be considered as the main strategic elements for the EM-

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[4] United Nations Development Programme

MNEs' internationalisation. As the '*linkage*' could provide a good opportunity for linking up with global suppliers networking moreover, the linkage feature empowers enterprises from emerging markets to be connected with advanced firms in order to acquire more knowledge and technology. Consequently, acquiring a potential networking with other resources enables enterprises to "l*everage*" those potentialities towards constructing of secured and sustainable business activities. Finally, sustaining and ongoing practices with other firms could lead these firms to gain industrial '*learning*', where learning from other firms enables them to set up efficient and up-to-date strategies according to the market needs. However, Mathew (2006) investigates these elements for the EM-MNEs, it is important to find out to what extent these strategic elements could be implemented and simulated in smaller scale by the EM-SMEs. Especially for those enterprises that are technologically driven and are able to speed up their internationalisation at very early stage of inception (Almor 2006; Filatotchev et al. 2009) with having global mind-set that enables these firms to be embarked globally (Knight and Cavusgil, 1996). The empirical evidences that support Mathews' proposal show that firms from emerging economies firstly are driven by a push and pull process in order to overcome series of internationalisation barriers and secondly these firms dive linkage, leverage and learning (LLL) activities (Cardoza, G., and Fornes, G. 2011) in order to penetrate to the market. As, these firms by utilising advance ICTs, have mentioned as Born Globals (BG) or International New Ventures (IVN) (Almor, 2006; Weerawardena et al. 2007; Zahra, Ireland, and Hitt, 2000; Oviatt and McDougall,1994;) in the literature.

In addition, in international business, firms need some certain ownership advantages in size, technological superiority, uniqueness in products and the process of production, specialities in management and marketing practices (Chen & Chen, 1998, Filatotchev et al. 2009). Whereas, in an accelerated internationalisation, Born Globals (BGs) as an international entrepreneurship and International New Ventures (INVs), (Oviatt and McDougall's, 1994) could set up their competitive advantages based on their unique technologies and innovation that enable them to leverage worldwide in a speedy pace (Autio et al., 2000; Sapienza et al., 2006; Zahra et al., 2000). Consequently, the EM-SMEs need status in the international markets, which is particularly important for their sustainability in host markets (Boeker, 1989; Podolny, 1994).

Furthermore, because of expanding diversity of products and production process, the innovative activities are substantial for the long-term SMEs' achievements in emerging markets (Coombs & Metcalfe, 1998) and also, activities in foreign markets enables the EM-SMEs to become more grounded players in their indigenous market (Lages & Montgomery, 2004), where it leads the EM-SMEs to achieve growth in home market (Kuuluvainen, 2012). Moreover, these variables assemble many further influences and enhance the chances of potential networking and partnership with more potential firms, who have officially capabilities applicable for gaining and integrating, required by the EM-SMEs (Garg & De, 2014).

In summary, it can be predicted that, the EM-SMEs externally are being faced up with many deficiencies not only in their market structure environmental stability in economy and political status (Jones, Fallon and Golov, 2000; Bekaert and Harvey, 2003) but also, these firms are being suffered internally by series of deficiencies in their financial resources, expert labours, knowledge (Knight and Cavusgil, 2004) and lack of appropriate social networking (Boeker, 1989; Podolny, 1994).

Moreover, the EM-SMEs need to develop technological assets, their global brand, management skills, know-how and R&D capabilities (Evangelista 2005; Oviatt and McDougall 1995, Etemad, 2004; Gabrielsson et al. 2004; Dimitratos and Jones 2005) as these aforementioned elements have been considered as paramount issues for the success in their internationalisation and failure to overcome could hinder the firms from internationalisation.

Therefore, it is important to find out to what extent the EM-SMEs are successful to mitigate their internationalisation barriers by utilising advanced ICTs such a CC, when this technology could assist them to alleviate and/or eliminate internationalisation barriers towards an accelerated internationalisation. This importance could be achieved by understanding of innate characteristics of the EM-SMEs from one side and understanding of internationalisation-barriers classification of the EM-SMEs form other side. In the next subsections, this study will provide a systematic approach for identifying and assorting internationalisation barriers for the EM-SMEs in informational, operational, marketing and

environmental barriers and later in this chapter, a series of the CCU solutions will be indicated and proposed in order to mitigate these barriers. Moreover, hence, this study aims to conduct its study on emerging markets, for generalisation of EM, two markets of Iran and Turkey has been nominated for this research study firstly because of communalities of these two markets in psychic distance, secondly because of openness and closeness of these two markets due to their socio-economic circumstances and uncertainties in market sustainability.

2.4.1 Context of Iran

Soori and Tashkini (2011) discussed about elements that influence symmetric business among Iran and other trader parties in ASEAN, GCC, ECO and EU territorial blocks. The outcomes of their study demonstrate that factors such as per capita income, the size of economy and physical distance are important variables for mutual trade of Iran and these countries. In other words, based on the mentioned variables, the magnitude of Iran's GDP and its trade partners, and the population of these markets have the highest positive influence on the Iran international trades while physical distance has a little positive contribution to enhance international trade. The SMEs have important roles in contributing to economy of the most countries and the world and consequently many researchers are interested to find out how SMEs can contribute to the growth and development of different economies (Rovere, 1996; von Potobsky, 1992). Despite using a common term 'SMEs' in many economies, a prevalent definition for these entities are based on constrains in internal resources such as financial, staff, information and management (Yusof and Aspinwall, 2000; Rovere, 1996; Chen, 1999).

More than thirty years various economic sanctions were imposed on Iranian. The embargo of Iranian market caused various socio-economic uncertainties for this country. The new international agreement between Iran and six world powers has raised a new chance for this market to eliminate the uncertainties in investments towards economic sustainability. This matter helps Iran's economy to work and perform closer to its potential socio-economic-resource transformation and possibility frontier. This important cannot be achieved unless the trade policies matched with a sustainable socio-economic resources

development in order to ensure that equity is fully synchronised to benefit all sectors in the market (Farzin, 2014).

Therefore, based on this fact sustainable approaches are crucial for Iranian market where increasing the total volume of trade whether importing or exporting will affect income growth of ordinary people. Easing the sanctions could facilitate financial exchange towards larger volume in total trade and consequently it will lead to raise the growth of GDP and lower unemployment and more investment in infrastructures and technology in Iranian market. However, besides enhancement of GDP, Iran needs to provide minimum conditions for the growth of SMEs development, investing on infrastructures and technologies, providing more equitable conditions for non-oil exports, creating more quality jobs and improving its government fiscal system. In 2012, Iran's aggregate exchange volume for both import and export was about $195 billion (IMF, 2013).

The greater part of Iran's exchange is with BRICS nations (Brazil, Russia, India, China and South Africa) – with an aggregate estimation of $56 billion (or 28% of Iran's aggregate exchange esteem) - which additionally observed a colossal surplus for Iran International, 2014). On the off chance that Iran's Gross domestic product development could transcend the current long haul normal of 4% - and the enhanced exchange conditions all alone could add to simply under portion of the occupation creation that Iran's yearly one million new employment searchers require. The five million-unemployment build-up, nevertheless, would need to be settled through different means. For such a situation to succeed, it is critical that work era, salary development, venture quality & determination and going with technology choices, pay conveyance be viewed as a coordinated entire and utilized as the reason for any exchange arrangement. This outfit would help raise the execution and profitability of Iran's more than 30 million or so potential human capital, and enhance the advancement and data limit of Iran's critical supply of SMEs. It will be very much great known that great over 95% for organizations in Iran are little (and utilize just dependent upon 10 persons) same time those leftover portion utilize the middle of 10-50 persons. Further, those private and helpful segments together have just something like 20% for GDP, same time they utilize something like 80% of the Labour energy.

In spite of the fact that Iran has the potential limit with regards to working at a substantially larger amount of worldwide trade in merchandise and ventures, the manageability and value of this is requirements watchful thought. "*New investments, especially in SME's, and the crucial role of new public goods projects targeted at employment creation in both SME's and less productive regions and groupings, are required to complement the trade opening if sustainability is to be ensured*" (Iran International, 2014:3). In any case, for a fact, no doubt a comprehensive development and practical advancement procedure – in view of focused speculations and limit improvement - would be more feasible in Iran's present financial conditions. Table 2.2 illustrates six-year scenario of Iran's GDP growth from 2014 to 2019.

Table 2.2 - Six-Year Scenario (Optimistic - Based on Annual 15% Trade Growth)

	2014	2015	2016	2017	2018	2019
Population - mill	76	77	78	79	80	81
Total Trade - $ bill	195	224	258	297	341	392
GDP - $ bill	400	408	424	450	477	505
GDP growth rate - %	2	4	6	6	6	6
GDP/cap - $ (approx.)	5,260	5,300	5,440	5,700	6,000	6,250
Income Distribution - Gini	0.4	0.4	0.37	0.37	0.35	0.35
Unemployment - mill	5	4.5	4	3.5	3	2.5
Trade Contribution to GDP Growth %	-	3	3	3	3	3

2.4.2   Context of Turkey

Whereas, according to The World Factbook (2016) Turkey benefits from free-market economy policy that is largely driven by its industry and service sectors and its traditional agriculture sector, which still accounts for about 25% of employment. This country implements an aggressive privatization program that has reduced state involvement in basic industry such as banking, transport, and communication. In addition, the emergence of middle-class entrepreneurs is adding dynamism to this economy and this country is expanding its production beyond the traditional textiles and clothing sectors industries such as automotive, petrochemical, and electronics that are raising as other important Turkey's export commodities. After Turkey experienced a severe financial crisis in 2001, this country adopted financial and fiscal reforms as part of an IMF program. The reform could help the country's economic fundamentals and make the economy more efficient with

average growth of 6% annually until 2008; however, worsening in global economic conditions contracted the economy in 2009. Despite this condition, Turkey's well-regulated financial markets and banking system helped the country to pass the global financial crisis, and GDP rebounded strongly to around 9% in 2010-11. Moreover despite these positive trends and due to turmoil within Turkey's neighbourhood causes this economy being vulnerable to destabilising shifts in investor confidence and the consumer demands both domestically and in Europe and consequently leaded to drop in GDP growth to 4.4% in 2013 and 2.9% in 2014. In addition, the economy of Turkey retains significant weaknesses as this country relatively has high current account deficit, uncertain commitment to structural reform, and remains dependent on volatile and short-term investment to finance its large current account deficit (The World Factbook: Turkey, 2016). Furthermore, European Union members play significant role in exposing Turkish economy to outside world in foreign trade creates stiff competition among the members state that most sophisticated consumption preferences in the world prevail. As Upper-Middle Income Country (UMC) with GDP per capita $10,444 in 2011 (World Bank, 2010), Turkey has limitations because of insecure economic condition in the past and contorted government arrangements that make exceptionally hard the development of SMEs in its economy. However, these reasons are not just those limitations in Turkey's economy that constraints SMEs in this market where SMEs need specialists in government to complete projects towards the improvement of SMEs for a long time. With the 8.8 % unemployment rate (turkstat.gov.tr) in Turkey, SMEs could give more profit in term of decreasing unemployment rate, and the legislature ought to put mindful thoughtfulness regarding build up its SMEs (Nurrachmi et al. 2012). Table-2.3 illustrates Turkey's long-term growth scenarios estimations from 2012 to 2030.

Table 2.3 - Turkey long-term growth scenarios (source OECD estimations)

	Baseline	Labour market scenario	Education Scenario	Combined Scenario
Average potential GDP growth 2012-30,	4.4%	5.0%	5.2%	5.7%
Difference in level of potential output relative to baseline in 2030,		10%	15%	25%
Labour force participation rate in 2030,	55%	60%	56%	61%
Average years of schooling of the adult population in 2030	8.5%	8.5%	10%	10%
Memorandum items:				
Average MFP growth 2012-30	4.9%	5.2%	5.4%	5.8%
Structural level of unemployment in 2030	9.2%	9.2%	9.2%	9.2%

2.5 Internationalisation of the EM-SMEs – past studies and theoretical frameworks

Different studies have tried to justify the trend of internationalisation. Mainly the classification of internationalisation can be categorised into three main approaches. These three approaches can be categorised in Uppsala with slow and incremental entry mode, accelerated internationalisation and Born Globals with speedy and fast pace in internationalisation.

Studies show that these three main strategic approaches could be the choices of firms in emerging markets to enter foreign markets. However, because of SME's limited resources, and active and proactive motivations (Czinkota, 2004), SMEs prefers to focus on exporting rather than other modes of entries. In addition, Javalgi, Griffith and White (2003) argue that internationalisation is a process that firms move from the operating in its home market place to international market and firm can enjoy from huge opportunities for their growth (Brush, 1992). Due to lack of resources in home market, they are able to compensate their deficiencies through international alliances (Coviello and Munro, 1997).

In other conducted studies, the factors of internationalisation (Evers; Nitu and Feder, 2010; Hutchinson et al., 2007) have been identified as market expansion, generating more profit and new idea exposure where these factors are being considered as the most important elements that can motivate firms to enter overseas markets (OECD 2009).

Moreover, researchers have justified different definition for internationalisation based on their interest. Where internationalisation commonly has been described as adopting firms operations in strategy, structure and resources in global markets (Calof and Beamish, 1995). In addition, many scholars such as, Johanson and Wiedersheim-Paul (1975), Luostarinen (1979), and Johanson and Vahlne (1977) frequently described internationalisation as,

> *"The outward growth in a firm's international operations"*

Moreover, Calof and Beamish (1995:116) define internationalisation as,

> *"The process of adapting a firm's operations (strategy, structure, resource, etc.) to international environments",*

and based on this concept, Welch and Luostarinen (1988:36), internationalisation was defined as:

> *"The process of increasing involvement in international operations"*

On the contrary, Servais et al. (2006) argue that some SMEs can internationalise "*within three years of establishment and more than 25 percent of their sales*" can be outsourced outside the firm's home continent. Moreover, the born globals or international new venture (INV) could be featured as other SMEs from emerging markets that, not only they have products with global market potential, but also combine this potential with accelerated internationalisation capabilities with a global market vision (Gabrielsson et al., 2008).

2.5.1 Uppsala theory

The Uppsala theory model believes in a gradual and incremental international involvement when SMEs intend to expand internationally through export model of entry in order to penetrate target markets. The theory argues that reaching to a sustainable and successful business in foreign market initially depends on acquiring reasonable knowledge, experience and information (Johanson & Vahlne, 1977). Moreover based on this thought many other studies extensively emphasis on the gradual process of firms' internationalisation (Prange and Verdier, 2011; Dib, Rocha, and Silva; 2010).

In addition, in the line with Uppsala theory, it is believed that internationalisation is a gradual process in which firms are able to develop networks in the global trade relations (Naidu, Cavusgil, Murthy, and Sharkar, 1997). Uppsala theory also implicates to a gradual process of internationalisation as this theory contends that SMEs in a slow and incremental process become international player by considering patterns such as gaining knowledge in regards of foreign markets, uncertainties and risk avoidance management and many other barrier factors (Persinger, Civil and Vostina, 2007). Moreover, this theory argues that exporting, licencing, joint venture (JV) and wholly owned subsidiary (WOS) respectively are considered as procedural stages that a SMEs gradually and incrementally adds to its

commitments in order to maximise its market share and consequently acquires more control over its activities in a host country.

However, few SMEs will move on to the stages which need more commitments in their internationalisation, exports are proposed as a logical approach in terms of products' reception benchmarking in similar psychic markets in order to mitigate uncertainty in this theory. The evolutionary involvement could lead to certain models of entry in a host country. However, in the most indirect channel of distribution and logistics, firm desires to enter to a relatively unknown export market with trusted agents. An agent will be chosen because of local knowledge, contracts and expertise in selling into that country and will earn on commission on sales made. Thus, the problem would be based on the trust, the quality of agent's knowledge, commitment and selling ability (Brassington & Pettitt, 2006). Firms' tendency in host country from one side is to maximise the control of "resources" by direct surveillance and from the other side is to minimise the risk of internationalisation. Based on this fact, Osland, Taylor, and Zou (2001:p155) defined control and risk as,

> *"Control is the ability and willingness of a firm to influence decisions, systems, and methods in foreign markets… and risk concept can be defined as the potential that a firm's applied knowledge (tangible and/or intangible) will be unintentionally transferred to a local firm."*

Moreover, the concept of "resources" as assets of firms could be considered as some profits such as *"brand names, in-house knowledge, and skilled personnel employment, trade contacts, and efficient procedures"* (Dlugoborskyte and Petraite 2013:9).

In the line with aforementioned concept, from one side, firm needs to use more resources in a host country in order to maintain its subsidiary in full-control mode e.g., in entry modes of JV and WOS. It is noteworthy that a small number of SMEs have tendency to engage more than exporting mode of entry in a host country; however, all of the SMEs try to acquire more control in order to gain more market share and ROI in host countries because the increase of investment and engagement with host-country's market environment might lead to vulnerability. Hence, any turmoil in a host-country could threat firm's investment (Osland et al. 2001; White and Fan, 2006). Therefore, due to

aforementioned the EMs' environmental-characteristics, these markets fundamentally have a fragile stability in politics and economy. As the governmental policies have the upper hand over open markets' circumstances and other obstacles such as lack of efficient system in taxation, corruptions, monopolised market structure, and unequal and unhealthy competitions in these markets (Jones, Fallon and Golov, 2000; Dcruz and Hameed, 2012) could lead SMEs to deter any direct investment in these markets.

Modes of entry and expansion in host countries can be set out in four types of export, licensing, JV and WOS. As it is shown in figure-2.1, these modes of entry may differ from each other in three main elements of resource commitment, dissemination risk, and desired control by the exporting company (Maignan and Lukas, 1997; Woodcock et al., 1994).
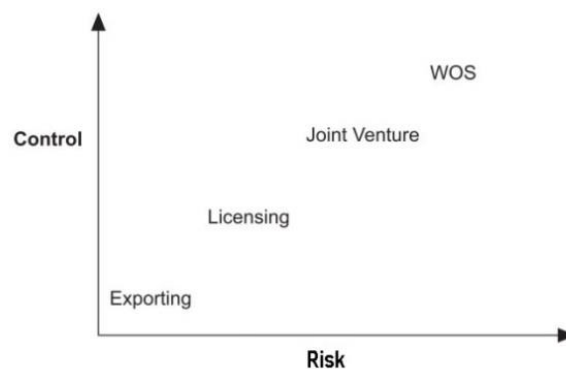
Figure 2.1- Adopted source: Osland, Taylor, and Zou, (2001)
Control and Risks in IB modes of entry

However, most of the SMEs engage with lowest level of risk and control in internationalisation activities. In gradual incremental commitments as it mentioned in Uppsala theory (Carlson, 1966), the tendency in modes of entry is to propel firm from an exporter to a wholly owned subsidiary when firms can obtain more control over its resources in a host county. From the IB perspective, figure-2.1 shows the positions of different modes of entry according to two factors of risk and control. According to Osland et al. (2001), the intensity of investment for controlling the resources increases through different modes of entry in host countries respectively from exporting, licensing/contractual commitments, Joint ventures to WOS. Moreover, by increasing the firms' commitment, the risk of investments will be elevated.

Uppsala theory has been criticised by many commentators because of inability to justify the theories of accelerated internationalisation and the behaviour of born globals. It is important to find out how firms without sufficient international experience and pre-acquiring knowledge and other barrier mitigation can accelerate their internationalisation from the early days of inception.

2.5.2 Accelerated internationalisation

While firms do not have to follow a progressive accumulation of resources and capabilities in order to penetrate the global markets (UNCTAD[5], 1993). A new trend of internationalisation has been accelerated because of the falling barriers of internationalisation for SMEs. Thus, the reason for the acceleration of these types of firms could be found in adaption of ICTs. In addition, despite having limited resources and little knowledge in organisational learning, firms are able to influence international markets from the moment that they are created, (Lopez, Kundu and Ciravegna, 2009). Grid networking enables firms to be presented beyond the boundaries, linking to other sectors such as financial sectors and accelerate their internationalisation. In addition, the phenomenon of advanced ICTs such CC can provide series of capabilities for resource controlling and therefore by eliminating of barriers firms are able to internationalise in speedy pace.

It is noteworthy that many empirical evidences showed that many firms are able to internationalise from the very moment that they were founded (Weerawardena et al., 2007; Anderson and Wictore, 2003; Moen and Servais, 2002; Freeman, Edward and Schroder, 2006; Madsen, Rasmussen, Servais; 2000). Moreover, according to OECD[6], the phenomenon of ICTs has enabled firms to accelerate internationalisation by changes in SMEs' international integration in many developed and developing countries at the beginning of the 21st century. Thus, it can be inferred that two main factors firstly, falling the barriers of internationalisation along with implementing technological management could facilitate the acceleration in internationalisation (UNCTAD, 1993).

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[5] United Nations Conference on Trade and Development (est. 1964)
[6] Organisation for Economic Co-operation and Development

Given that, small firms have limited resources to be able to choose various strategic options for their internationalisation, whereas by applying "*a well-founded conceptual model*" as born global, these companies can accelerate their internationalisation process more effectively. This "*policy agenda*" can help these firms to be more focused on their marketing orientation for a successful operation rather than acquisition of sequential knowledge of their target markets. Therefore, the dynamic capabilities of this strategic operation could lead to efficiencies for small films to boost their limited resources for gaining their competitive advantages in order to speed up their internationalisation (Weerawardena et al., 2007).

Furthermore, the matter of entrepreneurial dimension in an accelerated internationalisation is important while the two factors of push and pull enable firms to integrate with the available resources in international environment. Moreover, the discovery of new informational resources and the process of "inter-firm linkage" enable firms to accelerate their internationalisation. Mathews and Zander (2007) mentioned to three important captures of external resources (i) the "geographical" scattering of utilised knowledge, skills, and assets; (ii) the level of internationalisation of sales; and (iii) the dominating method for getting to and organising assets, practices, and routines.

In addition, while the prior studies has been narrowed the anticipation of export barriers to "*demographics*", "*strategic*", and "*exogenous*" elements, Kahiya (2013) have pointed out that export barriers as expected can slow down the "*path to internationalisation*". Moreover, in the previous studies the gradual internationalisation has been known because of lack of knowledge and skilled labours, the ability for being aware of risk and return of the investment, inability to organise the obstacles in market development, and foreign restrictions and regulations. Whereas, speedy internationalisation has been known because of the commitment and focus of superior management, the ability for developing a customised marketing mix, and lack of confidence in the indigenous market especially because of governmental policies and financing for a short-term export (Kahiya, 2013).

2.5.3 Leapfrogging

Communication, networking and operational process can be provided by advanced ICTs through an electronical collaboration in firm supply chain (Hammant, 1995; Porter, 2001; Fong, 2005; Porter & Millar, 1985; Jin, 2006) as advanced ICTs can be acknowledged in many countries for operating positional opportunities for many countries.

These technologies improve the process of management in decision-making and can lead better and faster informational process. Where utilising these facilities can boost scale economies of SMEs in better productivity with cost-savings towards improving their competitiveness (Pilat, 2004; Farrell, 2003; Bourlakis & Bourlakis, 2006; Hammant, 1995; Howgego, 2002; Porter & Millar, 1985); moreover, in industry the advanced ICTs can improve the governance of market (James, 2000; Matsuda, 1994; OECD, 2005).

It is noteworthy that advanced ICTs can enhance the quality of life for different deprived communities in order to access to greater education and health services. As these efficient progressions can be congregated in economic growth and welfare of national economy. (Roger, & Edge, 2001; Oberski, 2004; Reisman, Mercer, 2001; the World Bank, 2001).

Latecomers such developing countries imitate developed countries in adoption of advanced ICTs in order to benefit from the same potentialities of technological opportunities, as utilising of these technological potentialities can assist developing countries to minimise the economic gap between these countries and developed counterpart (Fong, 2009). The developing countries by leapfrogging to the new ICTs are able to alleviate the barriers in the growth of their economy as well as likelihood of excelling developed countries in economy growth, as the technological leapfrogging has become an attractive impulse for developing countries (Fong, 2009). "Technology leapfrogging" implies to adoption of advanced technology in an area in which the prior technology has not been adopted earlier. This concept refers to such developing markets where generally lag behind in continuum adoption of technologies and dissimilar developed markets are not considered as the origin of the emergence of these technologies. In addition developing markets can accelerate their economic developments by utilising of new technologies (Prayag, 2001; Hanna, Guy, & Arnold, 1995; OECD, 2005).

Moreover, leapfrogging enables developing markets to benefit from lesser costs and skilled people due to user-friendly features in the advanced technologies (Ensley, 2005). The possibility of significant growth in economy through leapfrogging has become attractive for developing markets where it seems these markets have not any choice except leapfrogging to the advanced technologies in order to emerge their markets (Davison, Vogel, Harris, & Jones, 2000; Mansell & Wehn, 1998;). Therefore, leapfrogging provides a better opportunity for the emerging markets in order to facilitate their markets by advanced technologies towards integrating to the global business (*Chisenga, 2000*).

However, it has been argued that leapfrogging in a short run might be an expensive path for the adopters in emerging markets (Chen, Farinelli, & Johansson, 2004) and likely, the adoption to new technologies may consider as prolonged payback depending on the primitive conditions in emerging markets.

2.5.4 The Born Globals

The empirical evidences show that small number of SMEs are enable to internationalise from the very moment they are founded (Anderson and Wictore, 2003; Moen and Servais, 2002; Freeman, Edward and Schroder, 2006; Madsen, Rasmussen, Servais; 2000). According to this potentiality, many studies have been conducted based on these capabilities. Mainly the competitive advantages of these types of firms can be identified in two main factors. Firstly, the technological capabilities of management in an extended value-chain in a similar market that needs similar behaviour, where these similarities enable firm to have accelerated internationalisation.

Secondly, in an accelerated internationalisation firm enables to be pioneer in the access of targeted markets. In addition, this situation makes the rivalry tighter in terms of entering market, as this approach is known as "Born Globals" (Oviatt & McDougall, 1994, 1999; Madsen & Servais, 1997). McKinsey and Co. (1993:4) define born globals as,

> *"firms that view the world as their marketplace from the outset and see the domestic market as a support for their international business."*

Also, Wictor and Anderson (2012:16) defines a born global company as,

> "*A company that has achieved a foreign sales volume of at least 25% within three years of its inception and that seeks to derive significant competitive advantage from the use of resources and the sales of outputs in multiple countries*".

Given that, the increase of using modern info technology (such cloud computing) in international business has created a new phase of internationalisation for SMEs to accelerate their expansion more than before. It has been asserted that BGs from their emergence pursue a concept of becoming global and often globalise quickly without any performing in long-term efforts indigenously or internationally (Luostarinen & Gabrielsson, 2004). In addition, it has been argued that,

> "*Born Globals from inception, seeks to derive significant competitive advantage from the use of resources and the sales of outputs in multiple countries*" (Andersson, & Wictore, 2003:254).

Furthermore, BGs due to their inherent features are able to spread rapidly and globally as other empirical evidences have shown that some companies wait only a few days or weeks before entering into a new market (Kim, 2003). Kudina, et al. (2008:38) define the BGs as,

> "*Some companies rapidly become players on the global stage, often much faster than larger competitors do*"

In addition, according to the study of Gabrielsson et al. (2008) BGs are considered as SMEs which not only have potentiality to sell products in global market, but also these firms are able to accelerate their internationalisation along with having of a global market vision. Moreover, the agility of BGs in the recent market-conditions has been manifested in the existence of international networks and association, homogenisation of customers' requirements, the international prevalence of modern businesses and following customers in foreign markets. In addition, technological communication and e-business opportunities along with lower fixed expenses in infrastructures make the businesses more profitable when, efficiently BGs are able to benefit from learning of overseas businesses and management models that allows them to use technological innovation and people's communication in the market (Kudina et al., 2008).

In addition, it has been argued that the success of BGs is mainly known because of the uniqueness, breakthrough in advanced communication and technology development, and international networking with their alliances (Moen, 2002). Moreover, the existence of numerous born globals these days, it has been predicted before that this phenomenon would be the great interest of numerous businesses; where, Madsen and Servais (1997) predicted that,

> "*It must be expected that the phenomenon of born globals will be more widespread in future.*"

Furthermore, these "Cyber-firms" have shown that they are capable to adapt nationally and internationally in different activities with fast entering in multiple markets to compete with other rivals whereas they are able to generate significant revenues. Moreover, cyberspace[7] provide firms to expand quickly beyond the national borders to access cheaper inputs and benefit outsourcing, as many scholars has examined the study (e.g. Weerawardena et al., 2007; Zhou et al. 2007; Fan and Phan, 2007; Shrader, Oviatt and McDougall, 2000).

Luostarinen and Gabrielsson (2004) spotted to some strategic challenges that born globals may experience from their inception. (i) They start global operations even before or at the same time with domestic ones. (ii) BGs base on their mission and from the birth, they are mainly focused on global markets and customers. (iii) They constantly plan their products, structures, systems and finances based on global interest. (iv) BGs are willing to become global market leaders as part of their vision. (v) They use different product, operation and market strategies than counterparts do traditionally. (vi) They need to follow different global marketing strategies. (vii) They typically grow fast on international markets. However, the vulnerability of BGs are like small and new firms that suffer from lack of brand recognition (Gabrielsson, 2005), market reception of their products, supply chain control, scale of economies, and many other advantages that bigger firms can benefit. As the older firms have better prospect for their retention because of well-established networking and communication with accessing to better resources (Singh, House and Tucker, 1986).

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[7] William Gibson novelist who has been coined the term "cyberspace" in his short story "Burning Chrome" (1982).

There are numerous motive-factors can be spotted on born globals' acceleration in international markets. The motive factors such as niche markets in specialised or customised products (Knight & Cavasgil, 1996), shortened product life cycle (Ohmae 1990; Oviatt & McDougall, 1997), exporting and getting internationalise in firms' inception, considerable advances in the production, communication, transportation, increased in international networking and associations (Moen, 2002; Madsen and Servais, 1997; Servais and Rasmussen, 2000; Knight and Cavusgil, 1996;).

It is noteworthy that Persinger et al. (2007) in their article "*the born global entrepreneur in emerging market*" contend that born global firms can perform in "*knowledge-intensive*" environment, and in their strategies, they give no attention to their indigenous markets, as all their resources are devoted to the international marketplace.

In addition, Anderson and Wictore (2003) believe countries with the small indigenous markets have a higher propensity to produce BGs. Thus, according to aforementioned theories of Uppsala and BGs, the Uppsala theory as a traditional view believes in an incremental approach of learning in internationalisation while in recent years because of advent technology in the ICTs; it is suggested that firms does not need to possess prior knowledge before commencing their internationalisation (Zheng et al. 2012).

2.6 Internationalisation Barriers

The emergence of advanced technologies enables the SMEs with having limited resources and knowledge to internationalise faster than before (Oviatt and McDougall, 2005). Nowadays, because of utilising advanced technologies and changes in global business environment due to globalisation, the international market has become more competitive than before (Knight et al. 2004). In addition, due to changes in customers' preferences and customisation in niche markets, also due to use of advanced technologies in internet the smaller firms are able to mitigate their internationalisation barriers and speed up to their accelerations in international trades (Rennie 1993; Dib et al. 2010).

Various studies have been conducted on export barriers with a perspective to creating methods for driving firm internationalisation more quickly (e.g., Shaw and Darroch 2004; Fillis 2002; Leonidou 2000; Bell 1997; Crick 2002). According to Kahiya (2013) study,

the SMEs' behaviour for choosing a model of entry of internationalisation could be depended on the types of barriers that they may experience in their internationalisation. However, generally most of these researches are focused on the exporters' managerial capabilities and environmental factors as the main barriers in the internationalisation. Leonidou (2004:281) defines the 'export barriers' as;

"all those constraints that hinder the firm's ability to initiate, develop or sustain business operations in overseas markets".

In order to examine the effectiveness of the CCU for the EM-SMEs towards an accelerated internationalisation, firstly it needs to investigate what classification of barriers could hinder the trend of internationalisation and therefore, by distinguishing the problems in internationalisation the study would find relevant and potential solutions of advanced ICTs such CC for the EM-SMEs. These potential barriers could propose effective solution to mitigate. Secondly, by applying the potential solutions firms are able experience a speedy internationalisation.

It is noteworthy that according to recent studies in the literature reviews, different group factors of barriers have been identified from many studies, as these studies try to categorise and classify the internationalisation barriers in different group factors. Therefore, due to exploratory factor analysis for all internationalisation barriers from various studies, these barriers have been classified into ten main theme groups.

Given that, the group factors of informational, operational, marketing and environment mainly are mainly derived from theme of these studies as they have been represented in table 2.4 for the justification of the research barriers classification.

Table 2.4 - The justification of the research barriers classification

No	Theme	Author/s	Research classification
1	Managerial focus and commitment	Da Silva and Da Rocha, 2001; Dean et al., 2000; Hutchinson et al., 2009; Julian and Ahmed, 2005	Operational
2	Foreign restrictions and standards	Da Rocha et al., 2008; Köksal and Kettaneh, 2011; Korneliussen and Blasius, 2008; Milanzi, 2012	Informational/ Environmental
3	Government policy	Altintaset al., 2007; Pinho and Martins, 2010; Shaw and Darroch, 2004; Yannopoulos and Kefalaki, 2010; Jones; Fallon & Golov 2000; Bekaert and Harvey 2003	Informational/ Environmental
4	Knowledge and expertise	Arteaga-Ortiz and Fernandez-Ortiz, 2010; Morgan and Katsikeas, 1998; Suarez-Ortega, 2003	Informational/ Operational
5	Resource constraints	Arteaga-Ortiz and Fernandez-Ortiz, 2010; Hutchinson et al., 2009; Leonidou, 2000; Suarez-Ortega, 2003	Operational
6	Risk and return	Eshghi, 1992; Julian and Ahmed, 2005; Moini, 1995	Marketing/ Operational
7	Market development obstacles	Crick, 2002; Da Rocha et al., 2008, Leonidou, 2000	Marketing
8	Short-term financing constraints	Dean et al., 2000; Milanzi, 2012; Shaw and Darroch, 2004; Julian and Ahmed, 2005; Ahmed et al., 2008; Pinho and Martins, 2010	Operational
9	Market mix adaptation	Crick, 2002	Marketing
10	Currency risk	Altintaset al., 2007; Dean et al., 2000	Environmental

Further to the above studies and according to the focus of this research study on the EM-SMEs' internationalisation barriers, this research study categorised various barriers of the EM-SMEs internationalisation from different studies in addition, according to the modality of this research study, the barriers have been categorised in four main groups of Informational, Operational, Marketing and Environmental. Therefore, based on this aforementioned categorisation, the groups have been originated from the following studies.

Informational: Leonidou (2004) cited that the existence of barriers for export is not adequate motive to hinder a firm from internationalisation. Hence, firms are able to overcome the obstacles in internationalisation with acquiring sufficient information and mobilising their resources (Kahiya, 2013). Moreover, Leonidou (2004) in a study categorised the impact of internationalisation barriers from low to high barriers in two

parts of "*internal and external classification of challenges*" (Pinho and Martins 2010; Tesfom and Lutz 2006). Where, the internal-barriers refer to informational limitation or information-related barriers, which are associated with the EM-SMEs value chain activities in their internationalisation.

These barriers can be classified as documentation and procedure, the knowledge of foreign market practice, method in transferring and collecting fund (Arteaga-Ortiz and Fernandez-Ortiz, 2010; Leonidou, 2004; Morgan and Katsikeas, 1998; Kahiya, 2013; Suarez-Ortega, 2003).

Furthermore, in the study of Dean et al. (2000) the category of knowledge and experience problem in foreign market in attempt to synthesise the export barriers of SMEs have been defined as this element reveals that firms need to collect effective information before entering to foreign markets.

Operational: Yang, Leone, and Alden (1992) classified the barriers to exporting in three categories, such as "external" barriers, "internal" barriers, and "operational" barriers. Moreover, Kedia and Chhokar (1986) suggested five export barrier categories including "marketing", "procedures", "know-how" and "practices", "financial", and "technical/adaptation". In addition, Leonidou (2004) emphasised on the operation barriers for SMEs in host countries as an important barrier that hinders the trend of firms' internationalisation. In addition, according to the Dean et al. (2000) general classification, operational difficulties such as procedural activities in host markets for SMEs have been identified as an important barrier as the attractiveness to export refers to supposition of risks and return or "*preferences*" in "*international operations*" (Moin,i 1995; Julian and Ahmed, 2005).

Furthermore, the SMEs source of limitations are associated with the size of these types of firms (Hannan and Freeman, 1984). In addition, the constraints associated with managerial factors could be considered as one of the main factors in internationalisation. In many studies, the constraints in managerial factors have been classified into two subcategories. Those limitation-factors are associated with firms' effort, ambition, and commitment

towards the internationalisation (Hutchinson et al., 2009; Kahiya, 2013; Da Silva and Da Rocha, 2001) and some constraint-factors are associated with firms' limitation in the capacity in physical production, the shortage of skilfulness labours and the constraints in financing. Based on these limitations many studies encapsulated their researches based on the firms' limitations and insufficiency in the capacity of production, expenditures, financing, availability of skilful labours, acquiring adequate insurance and securing the export credit (Crick, 2002; Arteaga-Ortiz and Fernandez-Ortiz, 2010; Kahiya, 2013; Suarez-Ortega, 2003). Moreover the managerial-associated barriers (Eshghi, 1992), intellectual manner (Yannopoulos and Kefalaki 2010), and the experimental methods (Zahra et al., 2005) have been categorised for the operational barriers for SMEs' internationalisation.

Furthermore, Dean et al. (2000) have defined six categories in an attempt to synthesize the export barriers of SMEs. The general categories included foreign market factors, knowledge and experience problems, procedural and distribution difficulties, management considerations and legal and political issues where these elements could assist firms to have efficient operation in the foreign markets.

Marketing: Marketing barriers for SMEs' internationalisation have been identified by the studies of Kedia and Chhokar (1986); in the line with this identification, Leonidou (2004) emphasises on the importance of this barriers for SMEs' internationalisation in foreign markets. Moreover, the barriers related to marketing can be categorised into two main categories market entry and marketing-mix. Associated barriers with entry could be named such as creating new sales leads, identifying foreign business opportunities accessing to distribution channels, having surveillance over middle-men, gaining representation in foreign market, and establishing a sustainable business (Leonidou 2000; Da Rocha et al. 2008). Whereas, marketing-mix barriers could be identified as those barriers, which are associated with products modification, based on the foreign-market preferences, obtaining of efficient promotional approaches, and offering appropriate strategy for pricing (Pinho and Martins 2010; Ahmed et al. 2008). In addition, according to the Dean et al. (2000) general classification, distribution difficulties for SMEs have been identified as an important barrier in foreign markets.

Environmental: According to the EM-SMEs' internationalisation, and concerning to the existence of "obstacles" for environmental barriers in emerging markets (Jones, Fallon and Golov, 2000; Bekaert and Harvey, 2003); any turmoil in the environment of SMEs activities could be considered as environmental barriers. The barriers such as political interference; inefficient taxation-system; the existence of corruption in emerging market environment and also monopolies in the market structure; unwillingness for privatisation and unequal competition for enterprises can be considered as other external barriers for the EM-SMEs. Moreover, it is noteworthy that, the environmental barrier subcategory is based on the level of uncertainty and the existence of corruption, which happen in the emerging markets, as it has been identified and mentioned as idiosyncratic of the EMs' environmental-barriers. These "obstacles" which cause failure and hindrance for internationalisation in emerging markets, and they also increase the riskiness of emerging market environments due to uncertainty in economy and political systems (Jones, Fallon & Golov, 2000; Bekaert and Harvey, 2003). In addition, in the line with this concept Dean et al. (2000) have identified legal and political factors as an important barriers for SMEs internationalisation.

Moreover, the most frequented home-based barriers for the EM-SMEs can be identified as, lack of local financial institutions with enough international expertise, geographic location, excessive union power and lack of tax incentives (Suarez-Ortega, 2003; Shaw and Darroch, 2004). In addition, lack of government supports for export, such as inconsistent government policy, development stimuli, interest rates and inflation (Dean et al., 2000) can be included to the home-based barriers. Thus, it is necessary for indigenous government to create an environment for SMEs to persuade them to internationalise (Kahiya, 2013). Therefore, studying one path of firm internationalisation cannot be a "one size fits all" solution for all SMEs. Thus, the researchers need to consider different method and approaches applied by SMEs for their internationalisation. According to the various conducted research studies of internationalisation-barriers such as Kahiya study (2013), (Appendix II); as well as many internationalisation barriers that have been identified and classified by Leonidou (2004) (Appendix III). This research study has identified "thirty-three" barriers for the EM-SMEs internationalisation and according to the aforementioned classification has categorised them in four categories of informational, operational, marketing and environmental.

Table- 2.5 represents the barriers of the EM-SMEs internationalisation, which were gathered from different studies for this research study. These barriers have been classified based on the earlier evidences in this research in for main group of informational, operational, marketing and environmental barriers.

Moreover, each barrier will be scrutinised in this literature reviews and also, this study will propose solution(s) for each barrier and later this research study will examine the effectiveness of the CCU on mitigation of these barriers in order to find out to what extent the CCU can be effective to mitigate these barriers for the EM-SMEs towards accelerating the internationalisation.

Table 2.5 - The Internationalisation Barriers of the EM-SMEs (Author)

TYPE	CODE	Barriers	Naidu and Rao (1993)	Katsikeas and Morgan (1994)	Leonidou (1995)	Shoham and Albaum (1995)	Campbell (1996)	Kwon and Hu (1996)	Peel and Eckart (1996)	Ramaseshan and Soutar (1996)	Bell (1997)	Bennett (1997)	Jensen and Davis (1998)	Karagozoglu and Lindell (1998)	Morgan and Katsikeas (1998)	Tesar and Moini (1998)	Dean et al. (2000)	Leonidou (2000)	Da Silva and Da Rocha (2001)	Crick (2002)	Fllis (2002)	Hornby et al. (2002)	Suarez-Ortega (2003)	Leonidou (2004)	Patterson (2004)	Shaw and Darroch (2004)	Julian and Ahmed (2005)	Barnes et al. (2006)	Neupert et al. (2006)	Da Rocha et al. (2008)	Korneliussen and Blasius (2008)	A-Ortiz and F-Ortiz (2010)	Pinho and Martins (2010)
Informational	IB01	Inadequate data to place and analyse for target market															*	*		*	*		*	*			*	*				*	
Informational	IB02	Uncertain, misleading and timely data in foreign market																						*									
Informational	IB03	Identifying opportunities in foreign markets	*		*					*				*		*	*	*	*	*			*	*		*	*					*	*
Informational	IB04	Weakness of identifying and communicating with potential overseas																						*									
Operational	OB05	Insufficient managerial time to manage exporting	*		*												*		*	*	*	*		*		*		*		*			
Operational	OB06	Insufficient skilful personnel for exporting	*	*	*	*		*							*		*	*	*	*	*			*			*			*			*
Operational	OB07	Insufficient production capacity for exporting			*				*						*		*			*	*		*	*			*			*		*	
Operational	OB08	Insufficiency in finance for exporting	*	*	*	*	*			*	*						*	*		*	*		*	*		*	*		*	*		*	
Operational	OB09	Unfamiliarity with paperwork and export procedure		*	*					*	*				*	*	*	*			*	*	*	*						*		*	*
Operational	OB09	Unfamiliarity with foreign laws			*												*							*						*			
Operational	OB 10	Difficulty in communication with customers in foreign market																						*									
Operational	OB11	Difficulty in fast collecting debts from the customers		*						*	*				*		*		*	*		*		*		*	*	*	*	*		*	*
Marketing	MB12	Difficulties in doing after-sales services in foreign market			*											*	*	*		*				*		*							
Marketing	MB13	Immoderate transportation/insurance expenses		*					*		*						*			*	*		*	*		*	*			*		*	
Marketing	MB14	Linking with potential representatives in foreign market																						*									
Marketing	MB15	Holding an effective surveillance upon intermediary in foreign market																						*									
Marketing	MB16	Setting proper promotional activities in foreign market														*	*								*								
Marketing	MB17	Difficulty with distribution channels in foreign market			*			*	*		*		*			*	*	*	*	*	*	*		*			*	*	*			*	
Marketing	MB18	Availability of proper distribution channels for exporting				*	*	*			*				*		*	*						*								*	
Marketing	MB19	Difficulties to supply the product continuously				*	*	*			*				*		*	*	*					*								*	
Marketing	MB20	Inaccessible warehousing in foreign market																						*									
Marketing	MB21	Offering reasonable finished prices for consumers		*					*		*			*			*	*		*				*		*	*						
Marketing	MB22	Difficulty to offer competitive prices																						*									
Marketing	MB24	Adapting products complying with tastes and needs of foreign market			*												*		*					*			*					*	
Marketing	MB25	complying standards and quality based on international market criteria		*	*						*				*	*	*	*						*						*			
Marketing	MB26	Other taste and orientation in foreign market															*							*		*	*					*	
Environmental	EB27	Instability in currency exchange		*				*	*		*	*				*	*	*	*	*		*	*	*		*		*				*	*
Environmental	EB28	Psychic distance in business practices,		*												*	*	*	*	*				*		*	*						
Environmental	EB28	Psychic distance in sociocultural & language	*	*				*	*	*		*		*		*	*	*	*	*	*	*		*		*		*				*	*
Environmental	EB29	Rigorous rules and regulation in host countries			*				*	*			*		*		*	*		*						*	*			*	*		*
Environmental	EB30	Undesirable regulations in home country																						*									
Environmental	EB31	Absence of government incentives in home country		*	*				*	*							*	*	*	*	*			*		*	*	*		*		*	*
Environmental	EB32	Political turmoil in foreign market		*													*							*									
Environmental	EB33	Bad/Worsening economic condition in foreign market	*		*	*	*				*						*	*		*	*	*	*			*	*					*	
AI	MB23	Existence of rigorous competition in foreign market	*	*	*		*		*	*		*	*		*		*	*	*	*	*	*	*	*	*			*		*		*	*

2.6.1 Informational Barriers

According to aforementioned literature reviews, the informational barriers for the EM-SMEs are represented as follow in table 2.6.

Table 2.6 - Informational Barriers

Barrier Code	Informational Barriers of the EM-SMEs Internationalisation
IB01	Inadequate data to place and analyse for target market
IB02	Uncertain and misleading data in foreign market
IB03	Identifying opportunities in foreign markets
IB04	Weakness of identifying and communicating with potential overseas customers

IB01 refers to inadequate data to place and analyse for target market; this leads the EM-SMEs not to gather essential information of target markets in order to reduce their uncertainties in internationalisation (Welch and Wiedersheim Paul 1980; Leonidou 2004).

IB02 indicates to the existence of uncertainty and misleading data in foreign market and as well as, inconsistency in source and quality of data, SMEs might mislead by distorted information in foreign market (Leonidou 2004). Whereas the existence of authentic data publish by official organisation would alleviate the uncertainty and misleading level in foreign Markets. By mitigation of uncertainties because of inappropriate information in emerging markets, the EM-SMEs could be assisted by better approaches for their internationalisation.

IB03 refers to identifying of opportunities in foreign markets that would create chance for the EM-SMEs in order to expand internationally. Accessing to appropriate information and having precise knowledge of foreign-market's opportunities could persuade SMEs to export and internationalisation. While, the role of unsolicited orders from global markets and conductive assistance from governmental body such as chamber of commerce and trade association would help firms to internationalise more conveniently (Leonidou 2004).

IB04 indicates to the lack of firms' appropriate and perpetuated communication. Having weaknesses in identifying and communicating with potential overseas customers, as well as factors such as large geographical distance, uncertainty to carry out a systematic research for foreign markets and confined offers from abroad markets feeble SMEs to communicate with foreign customers (Leonidou, 2004).

2.6.2 Operational Barriers

According to aforementioned literature reviews, the operational barriers of the EM-SMEs are represented as follow in table 2.7.

Table 2.7 - Operational Barriers

Barrier Code	Operational Barriers of the EM-SMEs Internationalisation
OB05	Insufficient managerial time to manage exporting
OB06	Insufficient skilful personnel for exporting
OB07	Insufficient production capacity for exporting
OB08	Insufficiency in finance for exporting
OB09	Unfamiliarity with paperwork and export procedure and foreign laws
OB10	Difficulty in communication with customers in foreign market
OB11	Difficulty in fast collecting debts from the customers

OB05 variable indicates that SMEs are suffering consistently from insufficient managerial time to manage exporting. Given that usually business decisions are being made by single mangers in the SMEs, thus they have an important role in terms of controlling and designing export strategies in foreign market when lack of time would be an important issue to manage international activities (Leonidou, Katsikeas, and Piercy, 1998).

OB06 indicates to exporting needs being followed up constantly by a team of experts in a firm. However, due to lack of skilful employees in SMEs and lack of time for SMEs' managers most of the time this importance is procrastinated. Consequently, this fact would deter opportunities for undertaking overseas exporting activities (Naidu & Rao 1993; Leonidou, 1995, 2004; Da Silva & Da Rocha, 2001; Dean et al., 2000; Ellis, 2002; Barnes et al., 2006).

Moreover, because of limited financial resources, relatively SMEs unable to afford and hire adequate export experts, as this also could lead these firms to suffer from insufficient skilful personnel for this internationalisation (Gomez-Mejia, 1988).

OB07 indicates to insufficiencies in production capacity as this problem causes exporting to put off and consequently causes SMEs not to engage with international businesses. Although export can stimulate SMEs' productions capacities, some firms look this opportunity as a barrier where they think they will undergone under pressure and with their limited resources would not be able to manage and handle the exporting activities (Albaum, Strandskov, and Duerr, 1998; Leonidou, 2004). As result of this, these firms see exporting as lateral activities and they put off exporting to a time once they are able to handle it when they are able to undertake a strategic approach along with applying positive effects in their global business performance (Kamath et al., 1987). However, this kind of approach can be seen as "short-sighted approach" (Leonidou, 2004:288) where at start point firm's resources can be deployed to target market efficiently and effectively.

OB08 indicates to insufficiency in finance for exporting that could hinder the EM-SMEs internationalisation. Export operations for SMEs often extensively require financial capability. Researches show that, visiting foreign customers and adopting export strategies need extensive expenditures. In addition, it has been argued that exporting has higher risk and lower profit and grater costs compared to domestic business (Leonidou, 2004).

OB09 indicates to unfamiliarity with unknown paperwork and export procedure in foreign markets that can barricade the EM-SMEs internationalisation. Managers always struggle with difficulties in custom's procedures, rules and regulations and shipping to host countries. These procedures are costly, time consuming as they affect negatively on handling of internationalisation (Moini, 1997; Leonidou, 2004). In most cases the SMEs for their internationalisation, they need to be facilitated by other brokers' services, conductive agencies, government organisations and financial institutions in home and target markets (Leonidou, 2004).

OB10 indicates to the difficulty in communication with customers in foreign market. This problem could be considered as a serious factor to barricade the EM-SMEs internationalisation. Whereas, having a constant and perpetuated communication with foreign customers would be a strategic operation in order to SMEs can set up for a clear monitoring of their export operation in foreign market. The problematic communication with foreign customers can be classified as misunderstanding caused by exchanging information, insignificant control over foreign market activities, delay in applying the strategic export decisions and lack of having comprehensive feedback from overseas business development (Leonidou, 2004; Terpstra and Sarathy, 2000).

OB11 indicates to the difficulty in fast collecting debts from the customers that could be considered as an important issue for the EM-SMEs in their foreign business activities. Serious issues such as lack of immediate contact with customers in foreign market, more credit facilities that customers might need, an also slow collection of debts, the existence of intermediaries, central-bank arranging policies in foreign market and absence of guaranteed payment methods would lead to slow collection of payment from foreign market which barricade the SMEs internationalisation activities (Leonidou, 2004).

2.6.3 Marketing Barriers

According to aforementioned literature reviews, the marketing barriers of the EM-SMEs are represented as follow in table 2.8.

Table 2.8 - Marketing Barriers

Barrier Code	Marketing Barriers of the EM-SMEs Internationalisation
MB12	Difficulties in doing after-sales services in foreign market
MB13	Immoderate transportation/insurance expenses
MB14	Linking with potential representatives in foreign market
MB15	Holding an effective surveillance upon intermediary in foreign market
MB16	Setting proper promotional activities in foreign market
MB17	Difficulty with distribution channels in foreign market
MB18	Availability of proper distribution channels for exporting
MB19	Difficulties to supply the product continuously
MB20	Inaccessible warehousing in foreign market
MB21	Offering reasonable finished-prices for consumers
MB22	Difficulty to offer competitive prices
MB24	Adapting products complying with tastes and needs of foreign market
MB25	Complying standards and quality based on international market criteria
MB26	Other taste and orientation in foreign market

MB12 indicates to the difficulties for doing after-sales services in foreign market. Due to limited human and financial resources as well as large geographical distance and costly post sales services, many SMEs are not able to undertake after-sales services as it could particularly increase costs and delays for foreign customers of durable and industrial goods as it seems this problem could barricade their internationalisation (Leonidou, 2004; Czinkota and Ronkainen, 2001). Moreover, porter (1980) suggests a firm can act in two ways for being successful, when being able to produce at low cost and to develop sustainably in product differentiation. Therefore, differentiation could be considered as producing superior products, with being able to do after-sales service. Given that previously after-sales service was being thought as a competitive advantage, it now has become an important value creation and profitable activity in enterprise and its network of distributors (Zackariasson and Wilson, 2004). Moreover, it has been argued that "After-sales" and installations generated about 25% of firms' revenue and were growing more rapidly than overall sales (Timothy et al., 1999).

MB13 indicates to immoderate transportation/insurance expenses. The long distance barrier to export can cause added-expenses for likely delaying product-delivery and incremental transportation costs. These factors can affect insurance costs relatively (Albaum, Strandskov, and Duerr 1998). These situations notably get acute when added with poor infrastructure facilities and limited transportation fleets and these cause SMEs to undergo higher risk for selling goods/services as it might cause in increasing the insurance costs added to the finished-goods prices (Leonidou, 2004).

MB14 indicates to the linkage with potential representatives in foreign market. One of the important challenges for the SMEs is to find potential representatives and agent in foreign market. Potential agents need to have "structural" capacities in territorial coverage, having financial competency and possessing tangible assets; moreover, these representatives need to have "operational" capacities in product classification, preparation in distribution and warehouses and finally the need to have "behavioural" capabilities in fame and popularity in market, influence in government and co-operational attitudes (Leonidou, 2004).

MB15 refers to maintaining an effective surveillance and control upon intermediary in foreign market. The SMEs might have less control over their partners overseas. This failure could get critical when geographical and cultural distances between SMEs and host market become greater. This might happen when firms are not able to find other substitution for their representative in host markets in order to precede their obligations and/or when the intermediary involves with other similar products or services with better profit margin.

It is suggested that implication of various approaches can lead to mitigate this problem such as insuring a competitive profit margin or extending sufficient credit ability for the intermediaries, as these approaches are not easily being applied because of the SMEs' limited-capital resources. Moreover, frequent surveillance of the SMEs upon their intermediaries in host countries would be expensive and difficult where enhancing a consistent communication between firm and agent in host market would lead to sustainable and efficiency (Leonidou, 2004).

MB16 refers to setting out proper promotional activities in foreign market. These promotional activities could be categories as, (i) differences in the structure of the target market consumers; (ii) unsuitable meaning of the advertising communication; (iii) inaccessibility or different use of communication mix; (iv) limitations in frequency or duration of advertising; and (v) inadequate accessible communication mix for advertising effective across foreign market (Leonidou, 2004).

MB17 refers to the difficulty with distribution channels in of foreign market. SMEs encounter many difficulties with distribution channels in different foreign markets, where they need to adapt for various methods in target markets' idiosyncrasies. These problematic adjustments can be summarised as, (i) unlike developed markets, the proportional retailers' outlets per capita in developing markets are higher. (ii) The distribution channel of some foreign markets consists of different "layer" while in others direct distribution channel are more common. (iii) And lastly, the quality of presenting services in distribution varies in different foreign markets (Terpstra and Sarathy 2000, Leonidou, 2004). Moreover, it is argued that choosing reliable distributors, difficulties in matching competitors' prices, and promoting the products are three main difficulties for the SMEs, which have engaged in internationalisation (Fillis, 2002).

MB18 refers to the availability of proper distribution channels for exporting. Depending on the SMEs availability of resources, either having a direct distribution or seeking assistance for distribution like "*Piggi-backing*" solution in foreign markets. Handling a proper distribution channel in foreign markets is a critical challenge for SMEs' foreign market prospects This gets worse when the control of SMEs' services/ products might be taken by the host's distributor (Leonidou, 2004; Czinkota & Ronkainen, 2001). As Knight and Cavusgil (2004) cited that, the superiority of performance of BGs in international market is because of (i) technological competency in international markets, (ii) uniqueness in new product development, (iii) focusing in quality of products or services, and (iv) leveraging of the distributors' competencies in foreign market.

MB19 refers to the difficulties of continuous supplying products. The SMEs have many difficulties to resupply adequately in foreign markets. Some failures are because of transportation delays, fluctuation in demands and unpredictable events that could affect. Overall, the reputation of SMEs is rely on a reliable regular supplying in foreign market. In the case of deficiencies, firms could destroy its credibility and consequently this might lead to lose sales and profits and also incur extra costs due to using faster carrier in an emergency scenario. As many SMEs management assert that, the shortage of product has direct correlation with the geographical distant of foreign-market their reputation (Hoejmose et al., 2014; Czinkota et al., 2014; Leonidou, 2004).

MB20 refers to inaccessible warehousing in foreign market. The SMEs have always problem with finding appropriate warehouse in target market in order to support a steady flow of goods and products with timely deliveries and retaining quality of their products. Moreover, because of high hiring-fees, unequipped places and/or covering large territorial foreign market could be turned to acute problems where SMEs are not able to detect adequate and proper warehouses in some target markets (Cateora & Graham, 2001; Leonidou, 2004).

MB21 refers to offering reasonable finished-prices for consumers in foreign market. In practice, export imposes additional costs on SMEs' production costs and it consequently adds some expenses to the finished prices. This fact makes the finished prices of goods/services uncompetitive in foreign market. Inevitably these mentioned costs occur because of smaller unit of production, the excess load of export costs in products modification such as packaging and overseas services, administrative costs, operational and transportation costs related to export and other imposed expenses such as taxes, tariffs and higher marketing and distribution costs in the foreign market (Tersptra and Sarathy 2000; Leonidou, 2004).

MB22 refers to the difficulty for offering the products at competitive prices. One of the serious difficulties for SMEs is to adjust with competitive prices with other counterparts in foreign market. The heterogeneous conditions such as different production-structures costs, lack of strict criteria for "Cost-Plus" pricing strategy, fluctuated exchange rate, variety

distribution and logistics costs and even, governmental subsidies and even dumping strategies by competitors can make matching the finished prices more difficult (Leonidou 2004).

MB24 refers to adapting products complying with tastes and needs of foreign market. Adjusting to variety of different tastes such as "purchasing power", different types of end-user tastes, and sociocultural settings in order to produce products and services according to the needs of foreign market would not be an easy task for SMEs. However, emphasising to adapt product-orientation strategy based on the target markets' needs may cause numerous problems for SMEs. These problems are known as cost of production per unit in terms of the scale of demands, lack of efficient and effective managerial support in terms of controlling export activities in target market and also undertaking and commitments of various marketing activities in the target market (Terpstra and Sarathy, 2000; Leonidou, 2004).

MB25 refers to complying standards and quality based on international market criteria. Products and services are entailed to produce in different quality and standards among foreign markets where overseas market demand better quality of foreign products which are produced with higher grade of standard. Many host countries have legalised sets of mandatory rules and regulations for producing goods and services based on health and safety of their countries' population. In fact complying with rules and regulations in host countries in order to enhance the quality of product and services increase more costs for SMEs in terms of acquiring the competitive advantages in the foreign market (Leonidou, 2004).

MB26 indicates to other taste and orientation in foreign market that SMEs need to adapt a proper strategy to maintain their competitive advantages in foreign market. However, it seems because of various climate conditions in the world, different level of people's income, various household structures among nations, different level of education standards and variety of attitudes and customs among countries, adapting to a particular strategy is extremely difficult for SMEs. These difficulties in foreign markets can be found in various customers' habits and orientation that lead to various product preferences, using of

different patterns, applying different distribution systems, diverse price settings and various methods of communications (Cateora and Graham, 2001; Leonidou, 2004). Therefore, these various preferences in producing goods could impose more expenditure on SMEs.

2.6.4 Environmental Barriers

According to aforementioned literature reviews, the environmental barriers of the EM-SMEs are represented as follow in table 2.9.

Table 2.9 - Environmental Barriers

Barrier Code	Environmental Barriers of the EM-SMEs Internationalisation
EB27	Instability in currency exchange
EB28	Psychic distance in business practices, sociocultural & language
EB29	Rigorous rules and regulation in host countries
EB30	Undesirable regulations in home country
EB31	Absence of government incentives in home country
EB32	Political turmoil in foreign market
EB33	Bad/Worsening economic condition in foreign market

EB27 refers to the instability in foreign exchange currencies. Instability in the economy in the emerging markets makes the internationalisation of foreign SMEs more risky and difficult. The instability can be seen in instable exchange rates, revaluation of goods, services, and unconvertible foreign currencies that make repatriation of profits more difficult for SMEs in foreign markets (Leonardo 2004; Jones, Fallon and Golov, 2000; Bekaert and Harvey, 2003).

EB28 refers to psychic distance in business practices, sociocultural & language. The psychic distance is defined as a hindrance of information flows to and from the foreign market, resulting from differences in language, culture, education, business practices and industrial development (Johanson and Vahlne 1977). Moreover, Dikova (2009) argues that psychic distance occurs because of differences in local consumer distinctions, business practices and culture between home and foreign market. The consequence of these differences reduces the level of awareness of the foreign market conditions. SMEs encounter difficulties in order to use different business practices across countries. For

example, it is difficult for SMEs, which are from conservative countries to enter into uncertain and risky business practices that they are unfamiliar with outcomes. Different practices across boundaries may cause enterprises to mislead from what happens in a negotiation, e.g. while "inaction" during business negotiation assumes as negative sign in western culture, this can be consider as a positive sign in oriental business practice.

Moreover, stablishing a formal rapport or a personal rapport with customers may differ across foreign markets' business practices (Czinkota & Ronkainen 2001; Leonidou 2004). Physical participation in international market is very important for SMEs for gaining important information that can help SMEs' managers to acquire more information about the foreign market in order to find their pose or posture towards other competitors in foreign market. In addition acquiring better information of target marker enables SMEs' managers to prevail over cultural barriers in target markets (Gray, 1997).

EB29 refers to the rigorous rules and regulations in host countries. Rules and regulation of foreign markets can easily affect SMEs businesses unprofitable or less profitable. These can affect the flow of commodity entrance, the control of prices, imposing more taxes on imports and also the exchange rate (Cateora and Graham 2001; Jones, Fallon and Golov, 2000).

EB30 refers to the undesirable rules and regulations in home country. Any constraints and limitation in in-home in regards of rules and regulation could hinder the SMEs internationalisation (Jones, Fallon and Golov, 2000; Bekaert and Harvey, 2003)

EB31 refers to the absence of government's incentives in home country. The government bodies can mainly stimulate the export activity by encouraging incentives such as providing proper infrastructure, assigning loans, subsidising, sponsoring and publishing data related to markets status (Leonidou 2004; Albaum, Strandskov, and Duerr1998). However, in some countries, these incentives are not accessible or they are not tailored to meet the exact needs of SMEs (Leonidou 2004; Jones, Fallon and Golov, 2000; Bekaert and Harvey, 2003).

EB32 refers to the political turmoil in foreign market. Government, political and social instability are considered as serious threats for SMEs' internationalisation. The SMEs' export-activities and also any foreign investment can be jeopardised by any turmoil in political stability in foreign markets (Busse & Hefeker, 2007; Jones, Fallon and Golov, 2000; Bekaert and Harvey, 2003).

EB33 indicates to bad/worsening economic condition in Emerging Market. Foreign market might not be attractive for exporters because of high inflation rate, instability in market and periodical rise of unemployment. This situation may lead to seek cheaper products that are more economical for the users (Leonardo 2004; Jones, Fallon and Golov, 2000; Bekaert and Harvey, 2003).

2.6.5 Barrier Index for Accelerated Internationalisation

According to the literature reviews, the following barrier in table 2.10 has been categorised in internationalisation marketing barrier as this item could represent an appropriate index for Barrier of Accelerated internationalisation. Later this index will assist the researcher to construct AI scale through designing the research methodology and questionnaire.

Table 2.10 - Barrier Index for Accelerated Internationalisation

Barrier Code	Barrier for Accelerated Internationalisation
AI1	Existence of rigorous competition in foreign market

AI1 indicates to the existence of rigorous competition in foreign market. Despite enjoying from a high competitive advantage in domestic market, the EM-SMEs are vulnerable and they might lose their competitive advantages in foreign markets. This may result because of all categorised barriers in internationalisation such as international business traits, lack of information, different operational procedures based on low cost strategies, differentiation and governmental protection, as well as a tight rivalry could be also affected by different marketing strategies. Thus, the EM-SMEs with limited resources might be leaded to adapt a niche market in order to maintain their businesses in a foreign market (Doole and Lowe 2001).

2.7 ICTs and internationalisation

It is observed that Internet could hold specific offer for the SMEs in terms of removing many barriers that they encounter in internationalisation (Arenius, Sasi, and Gabrielsson, 2005). This can also assist them to progress their efficiency to improve new approaches for operating their activities in internationalisation (Katz & Murray, 2002; Fletcher, Bell, & McNaughton, 2004).

In addition, it is expected that, the facilities provided by internet can enhance the "transactional" and "communicational" capabilities of SMEs towards their efficiency and effectiveness in international business development (Mathews & Healey, 2008). Moreover, strategies for the internationalisation have been changed dramatically by the emergence of the advanced ICTs (bridges.org, 2005). According to these changes, the theory for gradual incremental commitment seems to be unable to find a justifiable answer for a speedy internationalisation. Whereas, Hedlund and Kverneland (1985) argue that the phenomenon of leapfrogging enables firms to follow three main elements in their internationalisation. Firstly the existence of strong tendency to shorten the time between different stages of the firms' internationalisation (agent, sales, subsidiary, and manufacturing subsidiary), secondly the ability of firms to skip sequential stages in undertaking chains of commitments in ambitious forms of investment in host markets. Thirdly, firms' willingness of competition with their commitment in a large, expensive and growing international market place, which need an extensive international experiences within an oligopoly global markets.

Moreover, the Cloud Computing as the latest technology in ICTs can facilitate the acceleration of internationalisation process, while the CCU enables the EM-SMEs to leapfrog developed nations by skipping their less efficient intermediate computing infrastructures. The potentiality of CC can eliminate the huge costs for hardware and software maintenance that are necessary for the intermediate computing architecture and as result of this, the EM-SMEs by applying this new technology are needless of expert labours, installation, operation, maintenance, upgrading and troubleshooting (Tsao et al. 2011).

2.7.1 The Cloud Computing

The CC is now a new method of data processing, storing, and servicing that has revolutionised the world of computing. There is no doubt this phenomenon is going to change the way the word is today. CC delivers infrastructure, platform, and software that are made available as subscription-based services in a pay-per-use model to consumers (Armbrust et al., 2010). Mell and Grance (2011:2) at NIST define the CC as:

> "*a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g. networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service.*"

Moreover, according to the NIST definition, five key-specifications of the CC has been clarified such as, on-demand self-service, broad network access, resource pooling, rapid elasticity and measured service (Wyld, 2009:12). In addition, the services can be deployed through four types of Private Cloud, Community Cloud, Public Cloud, and Hybrid Cloud (Mell & Grance, 2011).

The important feature of the CC is its dynamic attribute that enable appliers to have a constant remote control on their resources, as these resources can be shared among different stakeholders. The CC as an advanced technology not only enables to convert a firm to a born global or an International New Venture (INV), but also this technology has an ability to empower them to control their resources remotely and consequently enables them to mitigate the internationalisation barriers. For instance, in grid[8]-web-based internet, firms used to load their webpages, with uploading limited information in a preassigned capacity through internet. Whereas, the new technology of the CC has enabled the enterprises to benefit from dynamic environment of services in order to set up their businesses virtually on flexible infrastructure. Firms nowadays by applying CC are able to service their customers remotely, set up their networks with partners, handling their finance, controlling human resources, setting up their remote sales, doing procurements and planning their supply chains.

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[8] "A system that coordinates resources which are not subject to centralized control, using standard, open, general-purpose protocols and interfaces to deliver nontrivial qualities of service" (Vaquero et al., 2008:53).

Many attributes of the CC have been surveyed and analysed, so far; however, the effective impact of these attributes on the trend of the EM-SMEs yet has been remained unknown. The scrutiny of the effectiveness of the CCU for the EM-SMEs' internationalisation is the core issue of this research study. The study of the CCU effectiveness not only can unfold the benefits of this phenomenon for facilitating the enterprises but also, enables them to mitigate the internationalisation barriers towards experiencing an accelerated internationalisation.

According to the study of Armbrust et al. (2010) and Interoute (2012), the advantages of the CCU are known in several benefits for the enterprises. These benefits are known as, no additional hardware costs, when the applications can be launched on the vendor server and users are not liable for any payment for any initial setup costs. Moreover, the applications are ready to use once the user subscribes. In fact, a facilitated model of payment as pay-per-use model (Armbrust et al, 2010) enables users to pay exactly for the right amount of software usage. In addition, the usage is scalable and depending on the user demand, as these facilities can be modified. In addition, users enjoy from an automated updating when there would be no need to update and installation new software.

One of the advantages of the CCU is its compatibility, this attribute is ideal for those firms that have different devices, Software as a system (SaaS) applications can be accessed via any internet enabled device. Moreover, accessibility from any location enable firms to have access to their resources and networks from anywhere with different devices and also the applications can be customised accordingly based on the needs of the firms moreover, these applications can be altered to be suited according to the needs of particular customers.

It is noteworthy that, this technology enhances the potentiality of firms in emerging economies that can affect to reduce the cost of infrastructure and provides a suitable situation for the SMEs in these markets (Irani 2008). As it was stated that CC would be easier to use for the non-technical appliers in terms of installing software, maintaining, and updating the software (Parikh 2009, Gruman & Knorr 2008).

In addition, the CC potentially has a better infrastructure to adapt with scaling up the use if the demand increases (Grossman 2009). More importantly, Marston et al. (2011) have asserted that the CCU can transform CAPEX (Capital Expenditure) to OPEX (Operation Expenditures); when THE EM-SMES with limited capital resources are able to turn their inventories into throughput rather than spending on buying machinery and other equipment or acquiring intellectual property.

2.7.1.1 Definitions

According to the study of Vaquero et al. (2008), table - 2.11 represents various definitions for Cloud Computing in the study, furthermore, this research-study defines the clouds computing as "A new facilitation on internet that enables firms remotely store, share, control and programme their data and physical resources through internet.

Table 2.11 - Cloud definitions adopted from Vaquero et al. (2008)

Author	Citation and Definition
Klems, (Geelan, 2008)	*"You can scale your infrastructure on demand within minutes or even seconds, instead of days or weeks, thereby avoiding under-utilization (idle servers) and over-utilization (blue screen) of in-house resources..."*
P. Gaw, (Geelan, 2008)	*"Using the internet to allow people to access technology-enabled services, Those services must be 'massively scalable..."*
R. Buyya et al. (2008), (Geelan, 2008)	*"A Cloud is a type of parallel and distributed system consisting of a collection of interconnected and virtualized computers that are dynamically provisioned and presented as one or more unified computing resources based on service-level agreements established through negotiation between the service provider and consumers"*
R. Cohen, (Geelan, 2008)	*"Cloud computing is one of those catch all buzz words that tries to encompass a variety of aspects ranging from deployment, load balancing, provisioning, business model and architecture (like Web2.0). It's the next logical step in software (software 10.0). For me the simplest explanation for Cloud Computing is describing it as," internet centric software."*

J. Kaplan, (Geelan, 2008)	*"A broad array of web-based services aimed at allowing users to obtain a wide range of functional capabilities on a 'pay-as-you-go' basis that previously required tremendous hardware/software investments and professional skills to acquire. Cloud computing is the realization of the earlier ideals of utility computing without the technical complexities or complicated deployment worries."*
D. Gourlay, (Geelan, 2008)	*"... the next hype-term...building off of the software models that virtualization enabled"*
D. Edwards, (Geelan, 2008)	*"... what is possible when you leverage web-scale infrastructure (application and physical) in an on-demand way..."*
B. de Haff, (Geelan, 2008)	*"... there really are only three types of services that are Cloud based: SaaS, PaaS, and Cloud Computing Platforms. I am not sure being massively scalable is a requirement to fit into any one category."*
B. Kepes, (Geelan, 2008)	*"... put simply Cloud Computing is the infrastructural paradigm shift that enables the ascension of SaaS. ... It is a broad array of web-based services aimed at allowing users to obtain a wide range of functional capabilities on a pay-as-you-go basis that previously required tremendous hardware/software investments and professional skills to acquire"*
K. Sheynkman, (Geelan, 2008)	*"Clouds focused on making the hardware layer consumable as on-demand compute and storage capacity. This is an important first step, but for companies to harness the power of the Cloud, complete application infrastructure needs to be easily configured, deployed, dynamically-scaled and managed in these virtualized hardware environments"*
O. Sultan, (Geelan, 2008)	*"In a fully implemented Data Center 3.0 environment, you can decide if an app is run locally (cook at home), in someone else data center (take-out) and you can change your mind on the fly in case you are short on data center resources (pantry is empty) or you having environmental /facilities issues (too hot to cook). In fact, with automation, a lot of this can be done with policy and real-time triggers*
K. Hartig, (Geelan, 2008)	*"... really is accessing resources and services needed to perform functions with dynamically changing needs...is a virtualization of resources that maintains and manages itself."*
M. Sheedan, (Geelan, 2008)	*"Clouds are vast resource pools with on-demand resource allocation...virtualized ...and priced like utilities"*

T. von Eicken, (Geelan, 2008)	*"Outsourced, pay-as-you-go, on-demand, somewhere in the Internet, etc"*
R. Bragg, (2008); (Geelan, 2008)	*"The key concept behind the Cloud is Web application... a more developed and reliable Cloud. Many find it's now cheaper to migrate to the Web Cloud than invest in their own server farm ... it is a desktop for people without a compute"*
P. McFedries, (2008), (Geelan, 2008)	*"Cloud Computing, in which not just our data but even our software resides within the Cloud, and we access everything not only through our PCs but also Cloud-friendly devices, such as smart phones, PDAs... the mega computer enabled by virtualization and software as a service...This is utility computing powered by massive utility data centers."*

2.7.1.2 Cloud Computing Characteristics

According to the NIST (2011) the characteristic of Cloud computing has been defined in five essential elements. (i) On-demand self-service when the users of cloud computing independently and from one-side can modify the conditions of servers such as server time, network, and storage without any human involvement. (ii) Broad network access where CC has a compatible characteristic throughout the network and any standardised mechanism is able to be accessed by diverse platforms such as, laptops, PDAs or mobile phones. (iii) Pooling of resources where CC resources can be accumulated for supporting many users simultaneously. These physical and virtual resources can be allocated dynamically based on the user needs. In addition, user has not any independent awareness of stored data location such as country, state, and datacentre; however, in the higher level of sensibility the user can assign the place of processing of such as processing, storage, network bandwidth, memory and virtual machines. (iv) Quick elasticity when flexible and quick scalable characteristic of CC usage enables users to tailor the CC capabilities based on their needs. Often these capabilities appear to be numerous and can be purchased at any time at any quantity. Finally, (v) for optimum efficiency a measured service can automatically controls the CC resources. This system uses a metering capability in order to be adjusted appropriately base on the type of use service. Therefore based on the user usage the resources automatically adjust it-self in storage, bandwidth, processing and user account activation. Moreover, the usage of resources can be

controlled, monitored, accounted and reported. This can help users and cloud provider to establish a transparent utilised services.

2.7.1.3 Service models

According to the National Institute of Standards and Technology, three service-models have been categorised and defined for CC (NIST, 2011:2-3). Table 2.12 presents the definitions of service models of CC.

Table 2.12 - Cloud Computing Service Models (NIST, 2011)

Serviced model		Definition
Software as a Service	SaaS	*"The capability provided to the consumer is to use the provider's applications running on a cloud infrastructure. The applications are accessible from various client devices through a thin client interface such as a web browser (e.g., web-based email). The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings."*
Platform as a Service	PaaS	*"The capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages and tools supported by the provider. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications and possibly application hosting environment configurations."*
Infrastructure as a Service	IaaS	*"The capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, deployed applications, and possibly limited control of select networking components (e.g., host firewalls)."*

2.7.1.4 Deployment models

According to the National Institute of Standards and Technology, the deployment models in CC have been categorised and defined as Private cloud, Community cloud, Public cloud, and Hybrid cloud (NIST, 2011:3). Table- 2.13 presents the definitions of CC deployments models.

Table 2.13 - Cloud Computing Deployment Models (NIST, 2011)

Deployment model	Definition
Private cloud	*"The cloud infrastructure is operated solely for an organization. It may be managed by the organization or a third party and may exist on premise or off premise."*
Community Cloud	*"The cloud infrastructure is shared by several organizations and supports a specific community that has shared concerns(e.g., mission, security requirements, policy, and compliance considerations). It may be managed by the organizations or a third party and may exist on premise or off premise."*
Public Cloud	*"The cloud infrastructure is made available to the general public or a large industry group and is owned by an organization selling cloud services."*
Hybrid cloud	*"The cloud infrastructure is a composition of two or more clouds (private, community, or public) that remain unique entities but are bound together by standardized or proprietary technology that enables data and application portability (e.g., cloud bursting for load balancing between clouds)."*

2.7.2 Cloud Computing Utilisation (the CCU)

The CCU empowers the EM-SMEs to control their resources remotely and this ability enables them to simulate their modes of entry virtually rather than having a physical attendance in international markets. It is noteworthy that in CC, resources can be categorised into software (application) and hardware (device) and those can be identified as tangible such as, machines and wires and intangible such as management, knowledge and information.

Given that, firm should allocate variety of resources for its international activities appropriately based on its different modes of entry. These activities can be array of operations for exporting, such as training, expending for licensing, investing on facilities and distribution in the case of owning subsidiary (Maignan and Lukas, 1997). In the line with these activities in order to control the resources, Dlugoborskyte and Petraite (2013:9) stated that,

> "*Resources that lead to profitability include assets, such as brand names, in-house knowledge, and skilled personnel employment, trade contacts, and efficient procedures.*"

In addition, controlling firm's resources not only can directly affect firm's survival with the strategy of "self-selection" but also this can interact with the strategy that can apply in firm's internationalisation (Sui and Baum, 2014).

Moreover, cloud computing is a type of internet-based computing where different services such as servers, storage (hardware), and applications (software) are delivered to firm's computers and other devices such as mobile phones by the internet. The CC enables the data centres to be performed similarly the internet and computing the resources to be accessed and shared virtual resources in a secure and scalable method. In other words, CC takes services and moves them outside firm's firewall on shared resources where the applications and services are available and accessible via Web instead of physical hardware in the firm.

Furthermore, CC networks are large group of servers and CSPs that usually take advantages of low cost-computing technology with specialised connections spread data-processing routines across them. Earlier before the advent of CC, controlling of resources through internet was not available when firms were just able to load their limited information or profiles on a static server with designated data-volume.

Whereas, the advent of CC not only changed the scalability but also enabled firms to benefit from a dynamic environment in order to be flexible and experience faster internationalisation. CC enabled firms to control their resources such as servers, storage, applications, networking, and communication. These features accordingly are suitable for

SMEs especially in emerging markets where they need to leapfrog their deficiencies of capital, expertise, skilful management, computer-knowledge inferiority in order to be empowered as born globals towards internationalisation.

Thus, the CCU facilitates a firm to simulate these business activities on a cloud and start to internationalise by its virtual subsidiaries. Cloud solutions can be considered as integrated software and hardware in terms of virtual activities of firms in areas such as financial, human resources, sales, procurement, customer service, and supply chain and even marketing. For example, CC services can be delivered to the users through three levels of control. So firm depends on its activity is able to define the level of control on clouds. These levels can be categorised in Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS) are different (Chan et al. 2012).

It is noteworthy that, the important feature of CC is its dynamic capability that enables firms to adjust the level of resource control based on their requirements and even this adjustment can be applied automatically. Therefore, the resources can be shared and interacted with stakeholders such as, customers, suppliers, and outside experts in order to engage them in product-development efforts, which are known, as "co-creation" (Chan et al. 2012; Bell & Loane, 2010). Moreover, Kocak & Abimbola (2009) and Cavusgil & Knight (2009) pointed out the competitive advantages of firms could be latent in the technological approaches that they have applied for their internationalisation, therefore according to this concept, Dlugoborskyte and Petraite (2013:9) stated that,

> *"These resources may include trade secrets, embedded technological knowledge as well as managerial, marketing, and production skills which are valuable, difficult to imitate, and provide the competitive advantage needed for internationalization".*

According to the CC architecture, this technology encompasses three main players such as Cloud Providers, Cloud Users or Customers and Cloud Vendors (Dargha, 2009) where, the control of share resources among these stakeholders on the internet make the internet more dynamic and centralised (Vaquero et al., 2008). In addition, it has been further contended that CC is more than just a latest technology buzzword where the transformative force

propels firms in all industries towards a new way of doing business, characterised by user participation, openness, and network effects (Bell & Loane, 2010).

Moreover, controlling of the resources in CC can be categorised in two main substantial groups, the control of the software resources and the control of hardware resources. Table - 2.14 presents the software and hardware resources that can be controlled by cloud computing capability.

Table 2.14 - Control of the resources

Software	Hardware
Application	Storage
Data	Networking
Trade secrets	Virtualization
Technology Knowledge:	Operating System
Management,	
Marketing,	Runtime middleware
Production Skills	

Source: Cavusgil and Knight, (2009) and Chan et al. (2012)

The impact of the CCU on SMEs internationalisation is the core of this study. This research study intends to find the effectiveness of the CCU for mitigation of internationalisation barriers. Consequently, utilising CC enables firms to reach to an optimum point in terms of acquiring more control of resources with the lowest risks and barriers in internationalisation as this research-study tries to examine those internationalisation barriers that can be mitigated by the CCU.

According to the aforementioned evidences in the literature, it can be inferred that, the EM-SMEs that adapt the CCU could diminish their Barriers to internationalisation. It is noteworthy that seeking for more control of resources increases from down to up in both approaches. Moreover, it was argued that the CCU could facilitate the control of resources remotely. The CCU enables users to control their resources both in hardware and in software. From the other side the CCU is an innovation to assort and managing information (Sheynkman, 2008) in the line with this concept Vaqueroet al. (2008:52) stated that,

"Clouds focused on making the hardware layer consumable as on-demand compute and storage capacity. This is an important first step, but for companies to harness the power of the Cloud, complete application infrastructure needs to be easily configured, deployed, dynamically-scaled and managed in these virtualized hardware environment."

2.7.2.1 The Potential Solutions for Mitigating the Internationalisation Barriers by the CCU

According to the classification of internationalisation barriers and the capabilities of Cloud computing utilisation (the CCU), the potential solutions for mitigating the internationalisation barriers by the CCU are proposed in the following section in four groups of informational, operational, marketing and environmental. In each sub-section the study will scrutinise each proposed solution for the identified barriers in the EM-SMEs' internationalisation.

2.7.2.1.1 The potential solutions of the CCU for informational barriers mitigation

This research proposes the following solutions of the CCU in table 2.15 that enable the EM-SMEs to mitigate the informational barriers for their internationalisation.

Table 2.15 - Informational Barriers and proposed the CCU solutions

The potential solutions of the CCU for informational barriers			
Barrier Variable	**the EM-SMEs' IB Barriers**	**Proposed solution**	**The potential impact of the CCU on Informational Barriers in internationalisation (solution)**
IB01	Inadequate data to place and analyse for target market	S1	Evoking and sorting useful data stored in Cloud by search engines technologies
IB02	Uncertain and misleading data in foreign market	S2	Accessing to appropriate data through foreign official websites stored on cloud
IB03	Identifying opportunities in foreign markets	S3	Conducting convenient research for business opportunities through official agents websites
IB04	Weakness of identifying and communicating with potential overseas customers	S4	Ubiquitous, convenient and on-demand networking to communicate with potential customers;

S1: Evoking and sorting useful data stored in Cloud by search engines technologies;

The CCU enables SMEs to exploit big data technology with a reduced obligation of company resources (Purcell, 2014) and provide sufficient benefit to access data storage as a new generation of innovation and architecture that support high volume of data , storage and analysis (Villars, Olofson, & Eastwood, 2011). The search engines are powerful tools that enable the SMEs to evoke useful stored information from different resources in target markets. This information can be categorised sorted and analysed. Moreover, it has been examined that the CCU can facilitate the knowledge management processes as this processes are directly connected to various intermediate measurement in performance of market such as product quality, customer retention, sales growth, and even in the success of a new launched product (Pérez-López, Alegre, 2012).

S2: Accessing to appropriate data through foreign official websites stored on cloud;

The interaction between government and the business environment (G2B) could dedicate many services to the business environment in order to register a business, to receive documentation, certificates and licensing through the CC. The role of e-government via the CC could provide an environment for these essential needs of public sector and business environment more efficient towards sustainable economic growth (Iovan & Daian, 2013). Thus, accessing to appropriate data through foreign official websites stored on clouds would benefit the EM-SMEs to manage their needs.

S3: Conducting convenient research for business opportunities through official agents websites;

E-government agents by storing out and publishing useful information on clouds and through their websites could provide and facilitate SMEs to get essential information and enable them to be aware of possible opportunities for their activities in foreign markets and lead them to internationalise effectively (Iovan & Daian, 2013).

S4: Ubiquitous, convenient and on-demand networking to communicate with potential customers;

According to the NIST's CC definition by Mell & Grance (2011:2), remotely and conveniently cloud computing provides the EM-SMEs to gain profits from networking, searching on shared resources, and communicate with potential customers in foreign markets. Moreover, CC is not just the data but even software resides within the cloud.

Firms can access everything not only through their PCs but also cloud-friendly devices, such as smart phones, PDAs, laptops, etc. in addition, proper grid infrastructures would need to connect the mega computer that enabled by virtualization and software as a service (McFedries, 2008).

Moreover, compared to the old fashion methods of communication, a study on SMEs in manufacturing sector in Canada shows that the utilisation of email increases the growth rate of businesses to 3.4%. In addition, in this research the modern ICTs could increase sales rate to 4% as well as increasing 5% in export activities when e-business techniques were adopted (Raymond, Bergeron, and Blili 2005). As result of these firm by underpinning CC infrastructure as an advanced technology and tapping its capabilities can deploy an "interwork" (Orlikowski, 1999) among foreign distributes and users (Zackariasson and Wilson, 2004). Therefore, the CCU enables SMEs to encounter ubiquitous, convenient, and on-demand networking access to carry out systematic research and communicate with potential customers in foreign countries.

2.7.2.1.2 The potential solutions of the CCU for the operational barriers mitigation

This research proposes the following solutions of the CCU in table 2.16 that enables the EM-SMEs to be able to mitigate the operational barriers for their internationalisation.

Table 2.16 - Operational barriers and proposed the CCU solutions

The potential solutions of the CCU for operational barriers			
Barrier Variable	**the EM-SMEs' OB Barriers**	**Proposed solution**	**The potential impact of the CCU on Operational Barriers in internationalisation (solution)**
OB05	Insufficient managerial time to manage exporting	S5	the CCU assists managers to save up time in order to export
OB06	Insufficient skilful personnel for exporting	S6	the CCU leads SMEs to add up skilful employees in export by reducing IT personnel
OB07	Insufficient production capacity for exporting	S7	the CCU enables SMEs to be more business focused in their productions
OB08	Insufficiency in finance for exporting	S8	Assisting to mitigate costs effectively

OB09	Unfamiliarity with paperwork and export procedure	S9	the CCU enables information being provided officially and the authorities may even explicitly offer cloud services to the public
	Unfamiliarity with foreign law		
OB10	Difficulty in communication with customers in foreign market	S10	Establishing mass media and interpersonal communication channels
OB11	Difficulty in fast collecting debts from the customers	S11	Prevalence of new methods in electronic transaction by the CCU

S5: the CCU assists managers to save up time in order to export;

Cloud computing technology could assist the EM-SMEs' managers to benefit from a dynamical environment and a process in which accelerate the development in technology and economies by skipping intermediate stages over inferiority, less efficiency and costs of development. In this regard, SMEs' managers are able to save up more time in order to focus more on their speedy internationalisation even without having proper cognition of their target markets where they might have lack of knowledge and experience due to a rapid entry (Lopez, Kundu and Ciravegna, 2009). Moreover, the CCU can assist the SMEs' managers to save up time in order to export where they need to have little efforts for sorting out their computing operation related their export activities as Mell and Grance *(2011:2)* emphasises on *"minimal management effort"* in definition of cloud computing.

S6: the CCU leads SMEs to add up skilful employees in export by reducing IT personnel;

It is expected that the CCU enable enterprises to leapfrog the intermediate computing architecture that needs more experts/employees for their installation, operation, trouble-shooting, maintenance, and upgrading (Tsoa 2008; Ensley, 2005; Throng, 2010). Moreover, the SMEs suffers from lack of managerial expertise, lack of ability to drive an efficient R&D as well as limited financial resources (Leonidou 2004, McConnel 1979). However, strategic alliance with other company can provide the SMEs to alleviate the barriers of innovating services/products to meet foreign market needs. However, the CCU enables firms significantly to mitigate the level of cost economies in labour savings and reducing unnecessary personnel. If organizations could be able to downsize their IT departments based on cloud computing migration, they can increase their cost savings. For

example, Forrest (2009) argues that firms could save up 15% on labour costs by moving to cloud (Forrest 2009). Therefore, by reducing the average level of IT employees, SMEs are able to spend more on the core of export activities, hiring and adding skilful employees in export operation rather than IT personnel. Moreover, the CCU inherently can provide a suitable environment for SMEs in order to facilitate communication, networking and logistic for SMEs in foreign market. For example, "*Salesforce*" provides business software applications as a pay-as-you-go service over the internet. this solution which is based on cloud computing can provide SMEs' customer relationship management (CRM) solution gives them an instant connection to the SMEs sales team and visibility into their leads, contacts, account, activities and the ability to drive sales revenue from anywhere, anytime. Moreover, unlike traditional web hosting, CC's clients only pay for what they use. In addition, in terms of web hosting, websites on cloud servers can run faster than traditional one at similar price (Pérez-López, Alegre, 2012).

S7: The CCU enables SMEs to be more business focused for their productions;

It is expected that SMEs with utilising the potentiality of CC could effectively and efficiently exploiting their resources and consequently enable them to be more business focused for their productions (Carroll et al. 2011).

S8: Assisting to mitigate costs effectively;

The utilisation of CC enables the SMEs to manoeuvre their capital expenditure (Capex) to operational expenditure (Opex) structure (Marston et al. 2011; Kynetix, 2009). This trait enables them to be flexible in their operational costs. In addition, they will be able to reduce both their ICTs maintenance expenditures and administrational costs as these firms can hugely save up in labour costs, and they are not obliged to employ IT experts when CC can provide administrational process for their customers and take benefit of the pay-per-use model (Armbrust et al, 2010). The CCU potentially provides a significant cost reductions, for example, capital acquisition, IT infrastructure operations and maintenance costs (Aljabre, 2012; Armbrust et al, 2010; Geczy et al, 2012; Iyer and Henderson, 2010; Luoma and Nyberg, 2011; Yang and Tate, 2009). Moreover, the CCU enables enterprises to mitigate the burden expenditures more effectively. The CCU creates enterprises a symmetric access for the host markets (Vaquero et al., 2008).

Moreover, the CCU enables SMEs to benefit from a robust search engines and comprehensive big data (Villars, Olofson, & Eastwood, 2011) as the processing capabilities of the big data model could provide new insights to the business pertaining to performance improvement, decision-making support, and innovation in business models, products, and services. In addition, it could provide efficient resources for the SMEs to survey their target markets via this facility. In addition, the CCU could lead to a virtual mobility that creates accessible opportunities, both substituting for physical mobility and availability in access (Kenyona, Lyonsa, & Raffertyb, 2002). Furthermore, Firms are able to avoid large upfront costs both in essential ICTs' hardware and software equipment and spend in ICTs according their production necessities (Dubey and Wagle, 2007; Armbrust et al., 2009). In addition, O'Reilly (2007:5) summarises the core competencies of Web 2.0 firms as,

> *"services, not packaged software, with cost-effective scalability; Advances in IT, and the Internet in particular, provide new tools to do this and also to improve cost, speed, and flexibility"* (Ogawa & Piller, 2006; Bell and Loane 2010).

Therefore, this advantage can have a large impact on the cost structure and more importantly on the production possibilities of SMEs (Etro 2009).

S9: the CCU enables information being provided officially and the authorities may even explicitly offer cloud services to the public;

It is expected that cloud computing utilisation can facilitate documentation procedures in e-government projects. For example, the implementations of the cloud computing by Swiss authorities prove that using of CC technology can be set as a strategy for standardising and supporting documentation. As this solution can be offered by the other government agencies. The main framework for their task is to provide a virtual environment to facilitate information explicitly to the public. Moreover, government can use the capabilities of Cloud computing for their supports and management (Müller et al. 2011). The other important usages of CC are when swarm of people refer to the official websites in order to precede their applications. This congestion might make normal serves out of service and disable where the CC technology has been designed for managing these

conditions and as this technology can easily handle the peak time of usage by virtualisations of hardware in order to deliver a smooth service to the users.

S10: Establishing mass media and interpersonal communication channels;

The CCU is able to establish a robust communication channels via internet such as mass media and interpersonal communication channels. The interpersonal communication can be possible to communicate among many foreign customers. In addition, the SMEs by using of CC can provide foreign customers a clear demonstration and workshops of their products, collecting the feedbacks and ultimately get ready to react instantly by the strategic planning (Mohlameane & Ruxwana, 2014). Pull marketing is an intrinsic reliable approaches for the firms in order to collect reliable statistics for customers activities on internet because of new technology is available when the SMEs can count the interested people clicking on their products through cloud computing.

S11: Prevalence of new methods in electronic transaction by the CCU;

Due to advent and prevalence of new methods in electronic transaction by the use of CC, digital banking and online payments make the transaction relatively more convenient for SMEs. Enterprises are able to collect the payments for their sold goods and services from anywhere in the world through the Internet by means of various payment service providers. Despite comparatively secured methods of online standard payment via Visa, MasterCard and American Express, there are many other secured ways are utilised by the CC for online payments such as PayPal, Google Wallet, Bit Coins (Research and Markets 2013).

The results of a study by Kaynak et al. (2005) show that the lack of legal regulations is cited as one of the most serious limitations of electronic commerce (EC) and hence EC is rarely used for payment purposes. One of the most vivid implications of internet-based EC for SMEs is the potential for external communication and information gathering for market and product research. Whereas, on the other hand, Jansen and Grance (2011) points to kind of "homogeneity" that a single flaw will be manifested throughout the cloud, potentially affecting all tenants and services.

Furthermore, the use of CC enables to bring many benefits for their appliers. The environment of CC meet standards for operational admission and certification in electronic transaction for example these standards can be named such as payment card industry data security standard (PCI DSS), security as ISO 27001, and information security management systems (Jansen; Grance, 2011). Moreover, CC can create an opportunity for a firm in order to create new products and services and use new channels or payment method to draw existing or near customer segments to produce remarkable new revenues (Berman et al., 2012). For example, the increasing penetration rate of the Internet, along with the prevalence of online payment systems and enhancements in the reliability of logistics services, has caused the development of e-commerce in China, with more than 2,000 companies competing to be the Chinese version of Amazon. Chinese e-commerce is expected to triple by 2015, when sales could reach \$420 billion means 20 percent higher than the forecast for the US market (Chiu et al. 2012).

2.7.2.1.3 The potential solutions of the CCU for the marketing barriers mitigation

This research argues the following proposed solutions of the CCU in table 2.17 that enable the EM-SMEs to mitigate their marketing barriers for their internationalisation.

Table 2.17 - Marketing barriers and proposed the CCU solution

The potential solutions of the CCU for marketing barriers			
Barrier Variable	the EM-SMEs' Marketing Barriers	Proposed Solution	The potential impact of the CCU on Internationalisation Barriers (Solution)
MB12	Difficulties in doing after-sales services in foreign market	S12	the CCU works as a main player in networking and in doing after-sales services in an organisation
MB13	Immoderate transportation/insurance expenses	S13	Improving road safety, travel reliability, informed travel choices, and traffic resilience to moderate transport/insurance costs
MB14	Linking with potential representatives in foreign market	S14	Capabilities in linking up with competent representatives
MB15	Holding an effective surveillance upon intermediary in foreign market	S15	the CCU enhances direct networking and eliminates the intermediaries

MB16	Setting proper promotional activities in foreign market	S16	Enable digital promotion through STP strategy (segmentation , Targeting and positioning)
MB17	Difficulty with distribution channels in foreign market	S17	Assisting to facilitate distribution channels in Foreign market
MB18	Availability of proper distribution channels for exporting	S18	Strengthening the distribution channels by facilitating networking and communication
MB19	Difficulties to supply the product continuously	S19	Enabling end–to-end in structure of supply chain
MB20	Inaccessible warehousing in foreign market	S20	the CCU can assist SMEs to access proper information
MB21	Offering reasonable finished-prices for consumers	S21	Ability of offering satisfactory prices to clients
MB22	Difficulty to offer competitive prices	S22	Assisting to reduce the general costs of production in order to produce at a competitive price
MB24	Adopting products complying with tastes and needs of foreign market	S24	Collecting analytical information, strengthening administration control, and supporting marketing
MB25	complying standards and quality based on international market criteria	S25	the CCU enabling an effective knowledge management that can lead to produce high quality products for niche market
MB26	Other taste and orientation in foreign market	S26	Enabling to save up costs toward efficient niche production based on market needs

S12: The CCU works as a main actor in networking and in doing after-sales services in an organisation;

The CCU can alleviate the costs of postsales services and enable SMEs to support their customers from large geographical distances in order to sustain their competitive advantages (Zackariasson and Wilson, 2004). Given that previously after-sales service was being thought as a competitive advantage, it now has become an important value creation and profitable activity in enterprise and its network of distributors (Zackariasson and Wilson, 2004) as it has been argued that "After-sales" and installations generated about 25% of firms' revenue and were growing more rapidly than overall sales. In addition, these sales are important for the firms because initial equipment sales could be possible many cases (Timothy et al. 1999).

Moreover, the utilisation of CC can facilitate and boost "interwork" opportunities (Orlikowski, 1999) among the parties related to the health of products. Decision makers in SMEs should be aware of these opportunities and by tapping of CC's capabilities in parties' communication enable to utilise people in distribution and user more supportively and effectively. Exploiting CC as a progressive technology will lead to a quality performance of a firm when the performance of using advanced technology like CC can be considered as the main actor in networking and in doing after-sales services in an organisation (Zackariasson and Wilson, 2004).

S13: Improving road safety, travel reliability, informed travel choices, and traffic resilience to moderate transport/insurance costs;

It is expected that CC could improve transportation securely in terms of alleviating the risk of far distance transport. An intelligent transportation system implemented on clouds can improve transport outcomes such as worldwide weather data, road safety, transport productivity, travel reliability, informed travel choices, environment protection, and traffic resilience (Marston et al. 2011; Bitam & Mellouk, 2012). As in a research proposed by Bitam & Mellouk (2012) the Intelligent Transportation System on cloud, (ITS-Cloud) can improve the distance transportation and consequently it affects the risk of transportation in the line with applying lower insurance costs. Therefore, SMEs by exploiting CC could reduce the executive transportation and insurance costs.

S14: Capabilities in linking up with competent representatives;

It is expected that Using advanced technology like CC could be considered as the main actor in networking in an organisation (Zackariasson and Wilson, 2004) where, firms are able to control their resources such as servers, storage, applications, networking and communication. In addition, While, representative in foreign market with utilising of CC are able to set up their comprehensive governance among structural, operational and behavioural capabilities where some part of these activities can be monitored, controlled and processed by linking up and networking with parent companies by utilising of cloud computing.

S15: The CCU enhances direct networking and eliminates the intermediaries;

The capabilities of CCU enable appliers to benefits from a direct and ubiquitous networking. This networking can be set up between firm as a producer and consumers in the host market. the CCU enables firms to be needless of any agents or intermediaries in host markets, as it is widely accepted that the Internet with allied information and communication technologies facilitate SMEs internationalisation (Bell & Loane, 2010).

In addition, Internet-based capabilities allow firms to avoid or reduce their physical presence in a host market, as this will enable them to enhance their export performance (Pezderka et al. 2012). Cloud computing has the potentiality of automating the functions of price checking and advance payment. It can also allow retailers to access directly information about many existing "private, unwritten brands," which are currently understood only between the wholesalers and the intermediaries; CC has also the potentiality to automate the function of quality checking. Together with other improvements in supply-chain operations, particularly the concept of "consumer visible" branding, this layer of intermediaries drastically can be reduced the importance of intermediaries or even enables the firms to eliminate the layers, and consequently this significantly reduces the supply-chain costs. In addition, the CC assists to reduce the cost of the supply chains between wholesalers and consumers where this enables a distributed hub that drastically reduces the distribution cost (Tsao et al., 2011).

S16: Enable digital promotion through STP strategy (segmentation, Targeting and positioning);

The CCU assists firms to find cheaper solutions for their promotional activities in foreign markets. Using various social networks facilitate firms in order to target their customers conveniently. Moreover, it is surveyed that choosing reliable distributors, difficulties in matching with competitors' prices, and promoting the products are considered as three main difficulties for the SMEs that have engaged with internationalisation (Fillis, 2002). Moreover, the CCU enables firms to find out the status in the target markets when applications in smart phones can collect information due to advertisement platforms that actively are viewed by customers who are interested in particular the products and services in a particular geographical area. Nowadays, "smartphones" enables entities to target specific keywords in mobile businesses in order to

assess both marketing and culture of a target market. Based on this capability Kim and Lee (2015) argue theoretical strategic guidelines through analysing users' psychological tendencies and lifestyles in order to provide an angle for mobile advertisement marketing research by their behaviour and preferences. In addition, Kim, Kim, Lee, (2011) discuss advertising with the CCU enables entities to benefit from better understanding of their business contexts, targeting smartly their customers and also they will be able to use this strategy to enhance targeting of their communication mix more intelligently. These capabilities enable firms to collect series of useful information from the target market in regards of contextual information, customers' time using, the users' profile, users' location, and the scale of data usage.

S17: Assisting to facilitate distribution channels in foreign market;

It is expected that SMEs encounter many difficulties with distribution channels in different foreign markets, where they need to adapt for various methods in target markets' idiosyncrasies. These problematic adjustments can be summarised as: (1) unlike developed markets, the proportional retailers' outlets per capita in developing markets are higher. (2) The distribution channel of some foreign markets consists of different "layer" while in others direct distribution channel are more common. (3) And lastly, the quality of presenting services in distribution varies in different foreign markets (Terpstra and Sarathy 2000, Leonidou, 2004). Moreover, it was surveyed that choosing reliable distributors, difficulties in matching competitors' prices, and promoting the products are three main difficulties for the SMEs who have engaged in internationalisation (Fillis, 2002). The role of Cloud computer can alleviate these problematic difficulties in distribution channels. Based on a report of Taiwan business IT investment of enterprises in 2011, it is unfolded that 61.1% of enterprises are utilised by the CC in terms of electronic system of distribution. Cheng et al. (2014) argue that the electronic system of distribution provide facilities for both customers and suppliers in order to communicate by means of the CCU and as a "bridge" the CCU can also facilitate the transactions between customer and supplier more effectively rather than traditional communication.

In addition, the CCU enables entities to gain better understanding of their target markets by collecting useful information from the contexts, customers' behaviour more intelligently as this facts assist firms to target their audience more effectively (Kim, Kim, and Lee, 2011).

S18: Strengthening the distribution channels by facilitating networking and communication;

It is expected that logistic which comprises transportation, warehousing, distribution, information feedback and it is considered as a sophisticated process that needs demanding in real time with many departments involved. This issue requires a serious demand for a collaborative business process between sectors and enterprises, and importantly it requires the support of a flexible and efficient IT system (Li et al. 2012). Therefore, the CCU can assist the entire supply chain of enterprises both in upstream and downstream of apprehensively. In addition, the CCU can facilitate the EM-SMEs in order to find out the suitability of their product/services in a specific geographical zone(s). For example, firms by applying "Google Analytics[9]" application have better understanding of matching their products in a geographical area where this application can facilitate firms to estimate statically the density of "pull marketing". Google Analytics is a service offered by Google that generates detailed statistics about a website's traffic and traffic sources and measures conversions and sales. It's the most widely used website statistics service as Daisy Downs, Chief Marketing Officer Urbansitter estates "Google Analytics" has reduced our customer acquisition costs by 30%. Our media spend goes right to our best-performing channels". Moreover, the competency of leveraging of foreign distributor is crucially mater for the born globals success in the foreign market. Where other "cybermediaries" on cloud in foreign market can emphasis on the performance of downstream marketing and activities for enhancing international performance in foreign market (e.g., Rosson and Ford, 1982; Bowersox and Cooper, 1992).

In addition, based on aforementioned report among the important distribution-sales operations such as sales management, quality of transportation management, warehouse management and order management, the importance of electronic order management by the means of the CCU is getting higher. The report shows that 55% of enterprises are

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[9] http://www.google.com/analytics/why/
   http://www.google.com/analytics/premium/capabilities.html

wishing to be facilitated by the CCU in distribution platform (Find, 2011; Cheng et al. 2014). Consequently, these evidences show the efficiency of the CCU in terms of facilitating distribution channels in foreign markets for exporters based on facilitated networking and communication (Shivakumar, Jain, and Durresi, 2012).

S19: Enabling end–to-end in structure of supply chain;

It is expected that the CCU enables SMEs to benefit from the cloud supply chain facility that can provide a network of interconnected businesses in CC environment entailing "end-to-end" supplying of product and combined service arrays required by end cloud service customers (Lindner et al 2010; Cheng et al. 2014). For example Fresh, fresher, an end-to-end (E2E), structured supply chain assures full shelves and fresh products. That means loyal and happy customers along with considerable cost savings for manufacturers and retailers (Schwenker et al. 2012); Moreover, related to the physical distance many scholars asserts "death of distance" (Cairncross 1997) and "the end of geography" (Buckley & Ghauri 2004) that point out the importance of Internet and virtual space over the geographical distances. In addition, in the line with these mentioned concepts, The Economist (2003) claims that innovation has gushed in creating connection between virtual locations on the Internet and real places in the world where the traits of the CCU eliminates the distance effectively. As CC could be activated through online services and it enables SMEs to benefit from these services conveniently without feeling of distance (Cheng et al. 2014).

S20: The CCU can assist SMEs to access proper information;

Using the Cloud computing can assist the SMEs to access proper information in target markets in order to find suitable location for warehousing of their products. The SMEs through the CCU are able to control their resources in host countries as these resources could be categorised in servers, storage, applications, networking and communications. Moreover all the SMEs' logistic-activities in host countries such as transportation, warehousing, distribution, informative feedbacks seem to be crucial and timely matters in host countries where these information could not be handled without

using of proper and efficient ubiquitous software that could be supported by IT systems (Zackariasson and Wilson, 2004; Li et al. 2012).

S21: Ability of offering satisfactory prices to clients;

The model of "pay-per-use model", no upfront payment fees, no licence fees, no installation hardware and software fees, no expenses for maintenance, no need to hire expert labours can reduce the cost of products and services for SMEs (Armbrust et al., 2010; Interoute, 2012) . In addition, the CCU are able to mitigate partially some export expenses, as the studies show that the implementation of CC technology in SMEs' export-activities enable them to alleviate the cost of internationalisation in favour of their limited capital resources by leapfrogging the cost of advanced ICTs investment and mitigation of administration costs and skilful employees (Ensley, 2005; Throng, 2010). In addition, there are some costs for firms to acquire customers. These expenditures are considered for customer acquisition (Schmid & Trollinger, 2002) that incurs companies in order to convince customers to buy the product and services. The costs involve research, marketing and administration accessibility that will be added to the finished price of products and services. Intrinsic capabilities of CC facilitate the process of these stages as it can contribute to mitigate the costs of these processes as Botteri (2008) believes that '*customer acquisition cost*' can be utilised in conjunction with SaaS, B2B software sales by the use of CC.

S22: Assisting to reduce the general costs of production in order to produce at a competitive price;

According to Mell and Grance (2011) CC's definition, it can be inferred that CC enables provision of other substitute services and it can eliminate the barriers entrance of all rivals towards a tighter economy. The positive aspect of the CCU is to increase rivalry and consequently it leads to reduce the prices of production/services among other competitors (Shivakumar and Raju 2010). And, it is believed that due to the effect of globalisation and the use of advanced ICTs the barriers in internationalisation has been increased more than before because of the increase of competition in the global markets (Tesar and Tarleton, 1982, Douglas and Craig, 1992). Moreover, the increase of competition in global market drags many competitors into adaptation of CC. Moreover, the advent of CC has brought many advantages for the SMEs produces and they are able to

reduce the finished product prices by pursuing lower production cost. The SMEs by utilising CC are able to stay away from large up-front cost necessary for their hardware and software and they can adjust the use of them based on their production necessities, as this will have a huge effect on the production expenditures to produce at lower prices (Etro 2009). Moreover, Internet technology as an advanced tool particularly enables SMEs to benefit from improving cost, velocity and resilience (Ogawa & Piller, 2006; Bell and Loane, 2010). In addition, the CCU empowers SMEs to be substantially cost effective, experiencing more capabilities and positioning for speedy service activities (Thomas, 2011). The utilisation of CC can assist SMEs to reduce their general cost in order to produce at lower finished costs (Armbrust et al., 2010).

Moreover, the CCU can provide customers an efficient infrastructure, platform and software that can deliver many facilities via subscription-based services and through model of pay-per-use model (Irani 2008; Armbrust et al, 2010; Interoute, 2012). Therefore, this model from one side could mitigate the expenses of SMEs, and form other side do not incur any extra costs on customers. In addition, SMEs do not need initially to pay for the setup costs, as the applications are ready to use when they subscribe. In addition, they pay for what they use when the payment would be exactly for the right intended software and finally the usage is scalable, it means depending on their scale of demand, the facilities can be modified (Interoute, 2012) as the CC promotes the resources to be more scalable and flexible. This leads to the enhancement of elasticity and used-based pricing (Grossman, 2009).

S24: Collecting analytical information, strengthening administration control, and supporting marketing

Some applications in CC enables networking for the SMEs and allow them easily use this potentiality towards establishing networking with different communities of SMEs. This advantage empowers them to set up a mutual communication with their customers, asking their feedbacks through websites or company's weblogs in order to collect the valuable information regarding their performance in host countries. This approach could be considered as external control of customers, where part of business is handed over to the customers. In addition, it is argued that positioning can be possible by the use of crowdsourcing in cloud computing that assist firms to drive changes based on the needs of

target markets and consequently firms may no longer need to understand their external market needs based on the indirect information. Where directly these firms can observe and evaluate the possible changes in the market needs (Tapscott, 2008; Vodafone Australia, 2008). Thus, both sourcing and selling internationally are the greatest challenges for SMEs' developments (Bell & Loane, 2010) and by increasing competition in international market, the use of advanced Internet applications as an advanced competitive edge assists those enterprises that exploit this facilities in their international activities (Ching & Ellis, 2004; Porter, 2001).

Moreover, the CCU enables the SMEs to pursue an efficient and successful marketing in terms of acquiring a superior knowledge in '*market-sensing*', '*customer-linking*', and '*channel-bonding*' (Blesa and Ripolla, 2008; Zhang et al., 2009). This importance can be possible when the SMEs by tapping into the CC capabilities are able to establish their strategic alliances and international networking. As this networking through the alliances, make them being efficiently active in the foreign market (Gulati, 1998). In addition, networking with strategic alliances can be considered as one of the crucial strategies approach that enable SMEs to acquire more new resources and knowledge to prevail over uncertainties to implement their operations (Alvarez and Barney, 2001; Steensma et al., 2000).

Moreover, Based on Coviello and Cox (2006) study, set of connected actors either as organisations or individuals were metaphorically introduced as "network" members as ties among them can lead to the strategic alliances relationships of customers, suppliers, service providers, or government agencies. Such networks in strategic alliances can assist the accomplishment of firms serving in order to distinguish new market opportunities and contribute to build adequate market knowledge (Zhang et al. 2009). Furthermore, the SMEs are suffering from lack of managerial expertise, lack of ability to drive an efficient R&D as well as limited financial resources (Leonidou 2004, McConnel 1979). However, strategic alliance because of the CCU integrated networking with other company can provide the SMEs to alleviate the barriers of innovating services/products to meet foreign market needs.

The use of CC as an advanced ICTs can provide the SMEs better communication, control and collaboration operations (Jean & Sinkovics, 2010; Jean, Sinkovics & Cavusgil, 2010; Jean, Sinkovics, & Kim, 2008; Yamin & Sinkovics, 2007), as this leads to produce based on the foreign market needs, and also where they experience speedy internationalisation with this advanced technology (Sinkovics & Penz, 2005). Whereas previous studies show that, the commitments in traditional internationalisation because of perception of high level of risk in resource and control were greater in the target market (Brouthers, 1995; Nakos & Brouthers, 2002). In addition, it is suggested that the ICTs can deploy better solutions for alleviation risks perception in different modes of entry in internationalisation in regards of offering low-resource commitment and high control alternative to physical market entry (Dunning & Wymbs, 2001). As, Pezderka and Sinkovics, (2011: p414) argued that,

> "*SMEs are more likely to prefer online market entry when total perceived international risk is high than when total perceived international risk is low*".

Moreover, different studies suggest that in regards of marketing activities technology is valuable resources for organisations (Barua, Kriebel, & Mukhopadhyay, 1995; Bharadwaj, 2000; Christensen, Johnson, & Rigby, 2002) and also it has been argued that both employees and technology are two main key players for firm's marketing activities (Barney, 1991, 2001; Peteraf, 1993; Wernerfelt, 1984; Richey et al., 2007).

S25: The CCU enabling an effective knowledge management that can lead to produce high quality products for niche market;

Not only the CCU can mitigate the various administration costs of SMEs in order to allocate their limited resources on producing standard and qualified products and services for foreign markers' criteria, but also, using advanced technology such as CC on internet can facilitate SMEs to build and signal the companies' image in the host countries. Where the standardised products are easier to sell online and this might contribute to reduce the competitive advantage with other products in the host market (Moen et al. 2003, Reuber and Fischer 2011).

By referring to the main characteristics of CC that enables the SMEs to encounter big data technology in terms of mitigating obligation of companies data resources (Purcell, 2014) and with providing sufficient access of information (Villars, Olofson, & Eastwood, 2011) can contribute to the relation of knowledge management and market performance (Lin and Kuo, 2007; Ho, 2008). As the procedure of an effective knowledge management can leads to enhancement of integration of customers and company (Migdadi, 2008). This enables SMEs in foreign market to aim specific market requirements and needs in order to retain customers and sales growth.

Therefore the CCU can lead the SMEs to encounter better knowledge based facilities as it is argued that appropriate knowledge may lead to improve productivity, creativity and sustainability and consequently the knowledge management process assists to product quality and new product development (Lin and Kuo, 2007; Ho, 2009; Pérez-López and Alegre, 2012). In the line with this, Cavusgil and Knight (2009) argue that the born globals' strategies are based on producing unique products for the niche markets of foreign market whereas, the bigger companies are not able to satisfy to meet the needs of small markets as the SMEs have an opportunity to offer the unique high quality products for this market.

S26: Enabling to save up costs toward efficient niche production based on market needs;

The CCU enables firms significantly mitigate the level of costs for hiring more employees (Forrest 2009; West 2010). This capability enables the SMEs to invest more on the preferences of niche-market products. Moreover, business analytics that can use the vast amount of computer resources to understand customers, buying habits, supply chains and so on from capacious amounts of data using of website trafficking tools such as Google Analytic can bring huge advantages to businesses. In order to have a precise survey before launching a new services and products Google Analytics service can generate detailed statistics about a website's traffic and traffic sources and measures sales. By exploiting this technology, the SMEs are able to have a precise benchmarking to meet foreign market needs.

As the basic service of Google Analytics is free of charge, firms with limited financial resources can benefit from this facility in order to acquire customers' picture across ads and videos, websites and social media, tablets and smartphones.

Moreover, Google Analytics application facilitates SMEs to track their visitors from anywhere from the world from various sources such as search engines and social networks, direct visits and referring sites. In addition, this enables to trace display advertising, pay-per-click networks, email marketing and digital collateral such as links within PDF documents (Marston et al., 2011).

2.7.2.1.4 The potential solutions of the CCU for the environmental barriers mitigation

This research argues the following proposed solutions of the CCU in table 2.18 that enable the EM-SMEs to mitigate their environmental barriers for their internationalisation.

Table 2.18 - Environmental Barriers and proposed the CCU solutions

The potential solutions of the CCU for environmental barriers			
Barrier Variable	the EM-SMEs' Environmental Barriers	Proposed Solution	The potential impact of the CCU on Internationalisation Barriers (Solution)
EB27	Instability in currency exchange	S27	Instant and up-to-date currency exchange information
EB28	Psychic distance in business practices, sociocultural & language	S28	Geocentric facilitation of the CCU to adapt language and normative practice
EB29	Rigorous rules and regulation in host countries	S29	Enabling firms to operate beyond hosts' jurisdictions
EB30	Undesirable regulations in home country	S30	Enabling firms to operate beyond home's jurisdictions
EB31	Absence of government incentives in home country	S31	Enabling an instant process in technology development by skipping intermediate stages
EB32	Political turmoil in foreign market	S32	Enabling business activities flow on cloud beyond any political instability
EB33	Bad/Worsening economic condition in foreign market	S33	Efficient capability in alleviating costs and proposing of financial facilitation for end users e.g. "pay-per-use model"

S27: Instant and up-to-date currency exchange information;

The CC technology relatively can mitigate the administration, communication and computing costs and due to the EM-SMEs common attributes (Persinger et al. 2007) and cost-effectiveness of CC, the utilisation of CC could economically and efficiently contribute to the EM-SMEs internationalisation. In addition, the CCU enables firms being needless of having physical presence in foreign market as any turmoil in foreign market has least effect on their losses.

It is obvious that the exchange rate is an external issue and it is beyond controls of any small entities, as constant fluctuations can affect spot contracts of the SMEs. Whilst, the CCU can provide a proportionate facility for the SMEs in order to be enabled of being aware of up-to-minute information about any exchanges in exchange rates. This facility could help the SMEs to have better calculation for their instant or final decisions. Moreover, since any fluctuation in exchange rate may cause to fluctuation of export price in the foreign market and as a result of this, it leads to less favourable prices in the target market. Therefore, the use of CC enables the SMEs to set out their businesses upon digital banking when they can have faster reaction towards any possible or some predictable changes in exchange rate through electronically payment, rather than slow bureaucratic payments. Such secured methods of online standard payment via Visa, MasterCard, and or new online methods as PayPal, Google Wallet, Bit Coins (Research and Markets, 2013).

S28: Geocentric facilitation of the CCU to adapt language and normative practice

Liesch & Knight (1999) mentioned that the SMEs as born globals are able to absorb better information in foreign markets in regards of come up with better solution in order to solve their financial limitations and other lack of resources. The CCU enables the SMEs to set up their own social and business networks. As this approach could help them to collect more useful information from the target markets in the respect of condition of market, opportunities and cultural issues as these powerful facility allows the SMEs to overcome the limitations caused by the lack of information in the target markets (Persinger et al. 2007).

Regarding the aforementioned psychics distance definitions; the sociocultural barriers can hinder internationalisation and act as a barrier for exporting. The contrasts in faith, social merits, way of traditions, social orientations, style, training and social association make up severe difficulties for the EM-SMEs to internationalise. For example, by Hofstede's dimensional theory predicts the sluggish penetration rate of using Internet in Japan in comparison with United State. As Japanese due to having high uncertainty avoidance and large power distance dimensions in their collectivist culture hinders any deal in e-business and taking risks in virtual (Ferle et al. 2002; Leonidou, 2004). Therefore, in the matter of cloud computing utilisation, firm needs to be aware of sociocultural issues that may affect their businesses drastically in the target markets as foreign-market's cultural factors are effective powers that affect individual's perceptions and habits of Internet Usage (Javalgi and Ramsey, 2001). A study by the International Data Corporation shows that e-business through web surfing and the propensity of purchasing through Internet fundamentally differ from country to country (Wilson, 1999; Javalgi, et al., 2004).

The use of the CCU enables the SMEs to penetrate into international market with a neutral culture experience. It has been found that culture, as the key element of born globals is able to expand internationally freely. For example, such American or German born globals carry intrinsically carry their own culture values in their core of their business structures and identities. However, the founders and the managers of these types of enterprises do globally rather than locally as their mind-sets have been oriented for a greater target as "geocentric" or whole-world market (Persinger et al., 2007).

Furthermore, it has been cited that language, education and technical infrastructure are three major factors for growing e-businesses where lack of these factors can hinder the development of e-businesses (Sprano and Zakak, 2000) in a specific geographical area. As Javalgi, et al (2004) mentioned the highest rate of internet diffusion is among those countries that know English language, whereas, nowadays it is testified that the growth of internet because of numerous capabilities of CC is not limited in English language countries. For example, the increasing growth rate of the Internet in Chain as Chinese e-commerce is expected to triple by 2015 (Chiu et al., 2012).

S29: Enabling firms to operate beyond hosts' jurisdictions;

It is expected that the CCU could quell the imposed rules and regulations in foreign market. The SMEs through the CCU can save up the general expenses so they are able to maintain a reasonable margin for their competitive finished prices in foreign market (Armbrust et al., 2010). In addition, the CCU enables the SMEs to maintain their activities beyond hosts' jurisdictions as any changes in foreign market's rules and regulations would have least effect on born globals' sales on services or intangible products. Therefore, currently it would be potentially more difficult for host countries to obtain a digital evidence same as traditional server-based systems in order to impose their rules and regulations on businesses operate on CC systems (Taylor, et al., 2010).

S30: Enabling firms to operate beyond home's jurisdictions;

Despite any constraint in rule and regulation imposed by home country. The CCU enables the EM-SMEs to disseminate their businesses anywhere. Moreover, the CCU enables the EM-SMEs to be active beyond the boundaries and limitations and any constraints because of undesirable regulations in home country have least impact on firm's businesses.

S31: Enabling an instant process in technology development by skipping intermediate stages;

The CCU could provide a suitable facilities for developing countries in order to encounter from a dynamical environment that enable them to benefit from an instant process in economical-technology development by skipping intermediate stages over weaknesses, such as less efficiency, and costs (Iovan & Daian, 2013) and absence of governmental incentives in home country. Moreover, the CCU enables the SMEs to expand their international business without receiving any particular governmental incentives.

S32: Enabling business activities flow on cloud beyond any political instability;

Consistently the CCU allows business activities flow on cloud beyond any political instability in a host country, as any turmoil has a minimum effect on the virtual enterprises. The CCU prevents enterprises from any direct threats of nationalisation, turmoil status and

any changes in government that could impose restriction on enterprises business in a host country. Moreover, the CCU provides a safer approach for enterprises against any chaos caused by war, revolution, reforms in monitory policies, trade restrictions, confiscation civil wars and low level of terrorism.

S33: Efficient capability in alleviating costs and proposing of financial facilitation for end users e.g. "pay-per-use model";

The foreign market might not be attractive for exporters because of high inflation rate, instability in market and periodical rise of unemployment. This situation may lead to seek cheaper products that are more economical for the users (Leonardo 2004).Whereas, the CCU can lead to cost savings (Armbrust et al., 2010) when the SMEs can enhance their competitive advantages based on the marketing mix in foreign markets.

2.7.2.2 The potential solutions of the CCU for the Accelerated internationalisation

Accelerated Internationalisation (AI) refers to any approach by utilising of CC that lead to lift the internationalisation barriers and consequently will speed up the trend of internationalisation. This research argues the following proposed solutions of the CCU in table 2.19 that enable the EM-SMEs to accelerate their internationalisation.

Table 2.19 - Accelerated Internationalisation and proposed the CCU solutions

Solution for Accelerated Internationalisation			
Barrier Variable	the EM-SMEs' and Barriers for speedy internationalisation (Problem)	Proposed Solution	The potential impact of the CCU on Internationalisation Barriers (Solution)
AI1	Existence of rigorous competition in foreign market	S23	Enabling SMEs to internationalise more quickly and effectively

S23: Enabling SMEs to internationalise more rapidly and effectively;

The CCU enables SMEs to deploy all their resources towards internationalisation, moreover by exploiting of this technology firm enables to internationalise more rapidly and more effectively. Moreover, CC enables SMEs to transform Capex to Opex, where the

capital expenditures such as fixed assets can spend into throughput and operating expenditure such as sales, general and administrative expenses (Armbrust et al., 2010). Thus, this strategy can assist the EM-SMEs despite of their financial constraints being able to maintain their niche market along with their competitive advantages in foreign market efficiently. Consequently based on the affirmational competitive advantages of the CCU by mitigation of informational, operational, marketing and environmental barriers empower firm to gain their competitive advantages against other competitors in foreign markets for doing more quickly and effectively in their internationalisation.

2.9 Summary

To sum up, this chapter provided literature reviews for the research study. According to the aims and objectives of this research study, it has been tried to gather a comprehensive literature reviews based on the following areas. Scrutinising the characteristic of SMEs in emerging markets, their potentialities and constraints, the study of various internationalisation theories such as Uppsala, accelerated internationalisation, leapfrogging and Born Globals the study of the EM-SMEs' internationalisation barriers basically on export towards investigating the effectiveness of the CCU for an accelerated internationalisation for the EM-SMEs. Moreover, it has been tried to investigate the literature review based on thirty-three export barriers in four classifications of Informational, Operational, Marketing and Environmental barriers, and allocating potential possible solutions for these barriers by utilising CC. Moreover, among extensive studies that have been done for this research study, the following theories are considered for the key theories and models that have influenced the hypotheses and proposed model of this research study.

Internationalisation, Welch and Luostarinen (1988:36), define internationalisation as: *"The process of increasing involvement in international operations"* also, Johanson and Vahlne (1977), Johanson and Wiedersheim-Paul (1975), and Luostarinen (1979) described internationalisation as, *"The outward growth in a firm's international operations,"*
Internationalisation of the EM-SMEs and the Barriers, Leonidou (2004: 281) defines 'export barriers' as; *"all those constraints that hinder the firm's ability to initiate, develop or sustain business operations in overseas markets"*. Furthermore, the EM-SMEs externally face with some deficiencies in the structure of market, their environmental

stability in economy and political status, taxation system and corruption (Jones, Fallon and Golov 2000; Bekaert and Harvey, 2003).

Accelerated internationalisation, Mathews and Zander (2007) mentioned to three important captures of external resources (i) the "geographical" scattering of utilised knowledge, skills, and assets; (ii) the level of internationalisation of sales; and (iii) the dominating method for getting to and organising assets, practices, and routines.

The born Global, "*Born Globals from inception, seeks to derive significant competitive advantage from the use of resources and the sales of outputs in multiple countries*" (Gabrielsson & Kirpalani, 2004).

Cloud Computing Utilisation, National Institute of Standards and Technology (NIST) defines Cloud Computing as, "*a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g. networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service*" (Mell and Grance, 2011:2).

In the next chapter, the conceptual framework of this research study will be presented based on the aforementioned key theories.

Chapter Three
C o n c e p t u a l   F r a m e w o r k

3.1 Introduction

In order to investigate the effectiveness of CCU to mitigate the EM-SMEs internationalisation barriers for, this chapter tries to propose a conceptual framework for this research study. The conceptual framework enables a researcher to link up the propositions of the research study into the available knowledge (Sunders et al., 2009).

According to the aim of this research study, the key theories for this research needs to be identified and then based on the definitions of each identified factors this chapter will be able to construct and propose its conceptual framework as the conceptual framework aids the researchers to sensitise the research problem more logical (Sekaran, 2003).

Therefore, for investigating the impact of the CCU on the EM-SMEs' internationalisation barriers, this chapter provide a scheme of the conceptual framework, with its variables, and the relations among these variables that can be applied in the conceptual framework. In addition, according to the construct of the framework, this chapter defines the applied notions, abbreviations and terms in the conceptual framework with providing some preliminary investigation.

Moreover, the conceptual model in figure 3.1 has been drawn distinctively based on the impact of the CCU on the EM-SMEs' internationalisation barriers in order to justify to what extend the CCU can mitigate the internationalisation barriers as it have been classified in the literature review. Moreover, in chapter two based on various studies, the study has identified many internationalisation barriers as this research study has nominated thirty-three barriers for investigation. The barriers have been identified and classified into categories of informational, operational, marketing and environmental by this research study. In addition, tables 3.1, 3.2, 3.3, and 3.4 will present in details the classified barriers along with identified and proposed solution(s) by the CCU for each of these barriers.

3.2 Developing of Conceptual Framework and Research Hypothesis

The development of the conceptual framework of this research study is based on the key theories that have been reviewed in the chapter two. According to different studies in the literature reviews, different group factors of barriers have been identified from different studies moreover, other key concepts such as the EM-SMEs, the CCU, Internationalisation and accelerated internationalisation have been defined and scrutinised for this research study. This chapter construct the model and applied notions based on these elements. In the following subsections, this chapter will develop its conceptual model and based on these factors try to develop the research hypothesis based on liking and relating of these elements.

3.2.1 The Theoretical background for EM-SMEs + CCU

The utilisation of CC enables the EM-SMEs to enhance their efficiency in the foreign markets. According to Mathew's theory (2006:5-27), "Linkage, Leverage, and Learning" are strategic elements for the firms from the emerging markets to internationalise effectively. When "linkage" is crucial for linking with suppliers and international customers this networking enables firms to "leverage" these potentialities towards making a secure and sustainable business activities when ongoing practices with other firms could lead these firms to gain effective "learning" from other firms to set up efficient and up-to-date tactics for the needs of market. Utilising of CC can facilitate Mathew's theory, and weakness of the EM-SMEs would be resolved accordingly.

3.2.1.1 The EM-SMEs

In chapter two, the general characteristics of the EM-SMEs have been discussed profoundly. These types of firms because of some shortage and low potency are experiencing many barriers for their internationalisation. According to the literature review, it has been found that mainly these firms choose export activity for their choice of entry modes, where in the aforementioned studies; the barriers of the EM-SMEs have been classified in different subcategories. For instance, Dean et al. (2000) categorise SMEs' barriers into "*procedural and distribution difficulties, internal resource problems, knowledge and experience problems, foreign market factors, legal and political, and management considerations*". Moreover in other studies the barriers have been classified into "*Managerial focus and commitment, Foreign restrictions and standards, Government policy, Knowledge and expertise, Resource constraints, Risk and return, Market development obstacles, Short-term financing constraints, Market mix adaptation, and Currency risk*" (Kahiya, 2013). These barriers have been classified by Leonidou study (2004) into Informational, Functional, Marketing, Procedural, Governmental, Task, and Environmental.

3.2.1.2 The CCU

It is predicted that utilising the capabilities of cloud computing can bring many benefits for the EM-SMEs as these capabilities could mitigate some of the internationalisation barriers towards an accelerated internationalisation. As it has been tried to investigate the effectiveness of the CCU on mitigation of the EM-SMEs internationalisation. In continue, the capability of CC would be studied in order to unfold how these capabilities could effectively effect on four mentioned subcategories to mitigate the internationalisation barriers.

Moreover, the EM-SMEs could benefit from cloud computing utilisation. This technology as an advanced ICTs phenomenon could convert the activities of the EM-SMEs more dynamically. The CCU gives power to the users to enjoy of more storage, enable them to execute their programs, sharing their bulky information through the internet and also enables them to set up their own networking across interne.

Since the CC in working behind the scene of Internet most of the users assume that they are not the user of cloud computing whereas since the advent of this technology, users have encountered many facilities which have been deployed to them. Users have more storage for keeping data in their emails, websites and webpages have more capacities in order to keep information. The infrastructure for processing of data has become stronger and sophisticated. Appliers have access to these infrastructures, as they are able to build up their own networking and communications. Search engines have become more efficient in order to analyse the data and so on.

Therefore, Mell and Grance (2011:2) at NIST define CC as "*a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g. networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service*". Moreover, because of increasing the efficiency in transportation, communication and technology in internationalisation, the tighter competition in global markets pushes the EM-SMEs to use advanced technologies in order to maintain their competitive advantages against their competitors in the markets. By using the advances ICTs such a cloud computing, firms are able to use Cutting-Edge Technology in order to benefit from maximum alleviation for their internationalisation barriers towards boosting informational, operational, and communicational capabilities.

In addition, according to the NIST, the intrinsic characteristics of CC are categorised in, on-demand self-service, broad network access, resource pooling, rapid elasticity, and measured service. Moreover, the service models in CC are classified into Cloud software as a service (SaaS), Cloud platform as a service (PaaS), and Cloud infrastructure as a service (IaaS). In addition, CC can be deployed in four models. Private cloud, public cloud, community cloud, and Hybrid cloud. Therefore, it can be anticipated that the EM-SMEs with utilising cloud computing have an opportunity to alleviate the internalisation barriers to experience a speedy internationalisation.

3.2.2 Classification of Barrier Mitigation

Based on the various studies in the literature review for the EM-SMEs' barriers of internationalisation, this section presents four tables of Informational, Operational, Marketing and Environmental Barriers with possible solutions for each barrier through the CCU, as this research intends to examine the effectiveness of the CCU for each internationalisation barriers of the EM-SMEs. In addition, as result of this, the study develops a hypothesis for each section. According to aforementioned studies in the literature review, mainly this research study has synthesized and categorised these barriers into four main subcategories. These subcategories of internationalisation barriers in this research study comprises of Informational, Operational, Marketing and Environmental.

3.2.2.1 The Theoretical background for Informational Barriers

It has been mentioned that the "Informational Barriers" refer to identifying problems in foreign markets, selecting relevant information, and establishing efficient communication with foreign market (Morgan & Katsikeas 1997; Katsikeas and Morgan 1994; Katsikeas 1994; Al-Hyari et al., 2012; Leonidou, 2004). Table 3.1 presents informational barriers for the EM-SMEs in their internationalisation and the impact of the CCU.

Table 3.1 - Source-Author: Informational Barriers (problems and solutions)

Informational barriers and the potential impact of the CCU					
Barrier	**Problem**	**Studies**	**Proposed Solution**	**Possible Solution**	**Studies**
IB01	Inadequate data to place and analyse for target market	Welch and Wiedersheim-Paul 1980; Leonidou 2004;	S1	Evoking and sorting useful data stored in Cloud by search engines technologies	Purcell, 2014; Pérez-López,2012; Alegre, 2012;Villars, Olofson, & Eastwood, 2011
IB02	Uncertain, misleading and timely data in foreign market	Czinkota & Ronkaien 2001; Loonodou 2004	S2	Accessing to appropriate data through foreign official websites stored on the cloud	Iovan & Daian, 2013

IB03	Identifying opportunities in foreign markets	Naidu and Rao 1993; Leonidou 1995; Leonidou 2000, 2004; Ramaseshan and Soutar 1996; Karagozoglu and Lindell 1998; Tesar and Moini 1998; Dean et al. 2000; Da Silva and Da Rocha 2001; Crick 2002; Suarez-Ortega 2003; Shaw and Darroch 2004; Julian and Ahmed 2005; A-Ortiz and F-Ortiz 2010; Pinho and Martins 2010; Kahiya 2013	S3	Conducting convenient research for business opportunities through official agents websites	Iovan & Daian, 2013
IB04	Weakness of identifying and communicating with potential overseas customers	Leonidou 2004;	S4	Ubiquitous, convenient and on-demand networking to communicate with potential customers;	Mell & Grance 2011; Raymond et al. 2005; Orlikowski, 1999; Zackariasson &Wilson, 2004

Therefore, according to the proposed solutions by the CCU for the Informational Barrier, the following Hypothesis can be proposed:

H₁: The CCU has a significant positive effect on mitigation of Informational Barriers for the EM-SMEs' internationalisation.

3.2.2.2 The Theoretical background for Operational Barriers

It has been mentioned that Operations Management is an area of management deal with supervising, scheming, and controlling the process of production and calculating business operations in the production of goods or services. This area of management ensures businesses to produce service and goods effectively and allocate limited resources efficiently towards meeting the needs of customer needs.

Moreover, operation management is about managing the process of converting inputs such as raw materials, labour, and energy into outputs such as goods or services. Form other side, according to Leonidou study (2004), "Functional", "Procedural" and "Task" related barriers refer to those barriers that can be known as operational barriers. This research study accumulated these categorised barriers under "Operational Barriers" for the SMEs.

Table 3.2 presents operational barriers of the EM-SMEs in their internationalisation and the impact of the CCU.

Table 3.2 - Source-Author: Operational Barriers (problems and solutions)

Operational barriers and the potential impact of the CCU					
Barrier	**Problem**	**Studies**	**Proposed Solution**	**Possible Solution**	**Studies**
OB05	Insufficient managerial time to manage exporting	Naidu and Rao 1993; Leonidou 1995, 2000, 2004; Dean et al. 2000; Da Silva and Da Rocha 2001; Crick 2002; Fllis 2002; Hornby et al. 2002; Shaw and Darroch 2004; Barnes et al. 2006	S5	the CCU assists managers to save up time in order to export	Lopez, Kundu and Ciravegna, 2009; Mell and Grance 2011
OB06	Insufficient skilful personnel for exporting	Naidu and Rao 1993; Katsikeas and Morgan 1994; Leonidou 1995, 2000, 2004; Shoham and Albaum 1995; Kwon and Hu 1996; Morgan and Katsikeas 1998; Dean et al. 2000; Da Silva and Da Rocha 2001; Crick 2002; Fllis 2002; Julian and Ahmed 2005; Da Rocha et al. 2008; Pinho and Martins 2010	S6	the CCU leads SMEs to add up skilful employees in export by reducing IT personnel	Forrest 2009; West 2010; Tsao 2011; Ensley 2005; Throng 2010,
OB07	Insufficient production capacity for exporting	Leonidou 1995, 2004; Peel and Eckart 1996; Morgan and Katsikeas 1998; Dean et al. 2000; Crick 2002; Fllis 2002; Suarez-Ortega 2003; Julian and Ahmed 2005; Da Rocha et al. 2008; A-Ortiz and F-Ortiz 2010	S7	the CCU enables SMEs to be more business focused for their productions	Marston et al. 2011; Kynetix, 2009; Aljabre, 2012; Armbrust et al, 2010; Geczy et al, 2012; Iyer and Henderson, 2010; Luoma and Nyberg, 2011; Yang and Tate, 2009; Carroll et al. 2011
OB08	Insufficiency in finance for exporting	Naidu and Rao 1993; Katsikeas and Morgan 1994; Leonidou 1995,2000.2004; Shoham and Albaum 1995; Campbell 1996; Ramaseshan and Soutar 1996; Bell 1997; Dean et al. 2000; Crick 2002; Fllis 2002; Suarez-Ortega 2003; Shaw and Darroch 2004; Da Rocha et al. 2008; A-Ortiz and F-Ortiz 2010	S8	Assisting to mitigate costs effectively	Vaquero et al., 2008,

OB09	Unfamiliarity with paperwork and export procedure	Dean et al. 2000; Leonidou 2000, 2004; Crick 2002; Fllis 2002; Suarez-Ortega 2003; Julian and Ahmed 2005; Barnes et al. 2006; A-Ortiz and F-Ortiz 2010	S9	the CCU enables information being provided officially and the authorities may even explicitly offer cloud services to the public	Brian et al.2012; Müller et al. 2011
	Unfamiliarity with foreign law	Leonidou (1995); Dean et al. (2000); Leonidou (2004); Neupert et al. (2006)			
OB10	Difficulty in communication with customers in foreign market	Leonidou, 2004; Terpstra and Sarathy 2000	S10	Establishing mass media and interpersonal communication channels	Mohlameane & Ruxwana 2014
OB11	Difficulty in fast collecting debts from the customers	Katsikeas and Morgan 1994; Bell 1997; Bennett 1997; Tesar and Moini 1998; Dean et al. 2000; Da Silva and Da Rocha 2001; Crick 2002; Leonidou 2004; Shaw and Darroch 2004; Julian and Ahmed 2005; Barnes et al. 2006; A-Ortiz and F-Ortiz 2010; Pinho and Martins 2010	S11	Prevalence of new methods in electronic transaction by the CCU	Research and Markets 2013,

Therefore, according to the proposed solutions by the CCU for the Operational Barrier, the following Hypothesis can be proposed:

H₂: The CCU has a significant positive effect on mitigation of operational barriers for the EM-SMEs internationalisation.

3.2.2.3 The Theoretical background for Marketing Barriers

It has been mentioned that the "Marketing Barriers" refer to company's marketing mix such as product, pricing, distribution & logistics, and promotional activities. Table 3.3 presents Marketing barriers of the EM-SMEs in their internationalisation and the impact of the CCU.

Table 3.3 - Source-Author: Marketing Barriers (problems and solutions)

Marketing barriers and the potential impact of the CCU					
Barrier	**Problem**	**Studies**	**Proposed Solution**	**Possible Solution**	**Studies**
OB12	Difficulties in doing after-sales services in foreign market	Shoham and Albaum 1995; Tesar and Moini 1998; Dean et al. 2000; Leonidou 2000, 2004; Crick 2002; Julian and Ahmed 2005	S12	the CCU works as a main actor in networking and in doing after-sales services in an organisation	Orlikowski, 1999; Zackariasson & Wilson 2004

MB13	Immoderate transportation/insurance expenses	Katsikeas and Morgan 1994; Ramaseshan and Soutar 1996; Bennett 1997; Morgan and Katsikeas 1998; Dean et al. 2000; Da Silva and Da Rocha 2001; Crick 2002; Hornby et al. 2002; Suarez-Ortega 2003; Leonidou 2004; Shaw and Darroch 2004; Julian and Ahmed 2005; Da Rocha et al. 2008; A-Ortiz and F-Ortiz 2010 / Leonidou 2004	S13	Improving road safety, travel reliability, informed travel choices, and traffic resilience to moderate transport/insurance costs	Marston et al. 2011; Bitam & Mellouk, 2012
MB14	Linking with potential representatives in foreign market	Leonidou 2004	S14	Capabilities in linking up with competent representatives	Zackariasson and Wilson, 2004
MB15	Holding an effective surveillance upon intermediary in foreign market	Leonidou 2004	S15	the CCU enhances direct networking and eliminates the intermediaries	Tsao et al. 2010
MB16	Setting proper promotional activities in foreign market	Leonidou 2004	S16	Enable digital promotion through STP strategy (segmentation , Targeting and positioning)	Kim and Lee, 2015; Kim, Kim, Lee, 2011
MB17	Difficulty with distribution channels in foreign market	Leonidou 1995, 2000, 2004; Peel and Eckart, 1996; Ramaseshan and Soutar, 1996; Bennett 1997; Karagozoglu and Lindell, 1998; Tesar and Moini, 1998; Dean et al. 2000; Da Silva and Da Rocha 2001; Crick 2002; Fllis 2002; Hornby et al. 2002; Julian and Ahmed 2005; Barnes et al. 2006; Neupert et al. 2006; A-Ortiz and F-Ortiz 2010	S17	Assisting to facilitate distribution channels in Foreign market	Cheng et al. 2014; Kim, Kim, and Lee, 2011
MB18	Availability of proper distribution channels for exporting	Shoham and Albaum 1995; Campbell 1996; Kwon and Hu 1996; Bell 1997; Morgan and Katsikeas 1998; Dean et al. 2000; Da Silva and Da Rocha 2001; Leonidou 2004; A-Ortiz and F-Ortiz 2010	S18	Strengthening the distribution channels by facilitating networking and communication	Knight and Cavusgil, 2004; Mishra, Jain, and Durresi, 2012
MB19	Difficulties to supply the product continuously	Hoejmose et al. 2014; Czinkota et al. 2014; Leonidou 2004	S19	Enabling end–to-end in structure of supply chain	Lindner et al 2010; Cheng et al. 2014

MB20	Inaccessible warehousing in foreign market	Cateora & Graham, 2001; Leonidou 2004	S20	the CCU can assist SMEs to access proper information	Zackariasson and Wilson, 2004; Li et al. 2012
MB21	Offering reasonable finished-prices for consumers	Katsikeas and Morgan 1994; Peel and Eckart 1996; Bell 1997; Karagozoglu and Lindell 1998; Dean et al. 2000; Leonidou 2000, 2004; Crick 2002; Shaw and Darroch 2004; Julian and Ahmed 2005	S21	Ability of offering satisfactory prices to clients	Armbrust et al., 2010; Interoute, 2012; Ensley, 2005; Throng, 2010, Botteri (2008)
MB22	Difficulty to offer competitive prices	Leonidou 2004	S22	Assisting to reduce the general costs of production in order to produce at a competitive price	Ogawa & Piller, 2006; Bell and Loane, 2010; Etro 2009; Mell and Granc, 2011; Shivakumar and Raju 2010; Armbrust et al., 2010
MB23	Existence of rigorous competition in foreign market	Naidu and Rao 1993; Katsikeas and Morgan 1994; Leonidou 1995, 2000,2004; Campbell 1996; Peel and Eckart 1996; Bennett 1997; Jensen and Davis 1998; Morgan and Katsikeas 1998; Dean et al. 2000; Da Silva and Da Rocha 2001; Crick 2002; Fllis 2002; Hornby et al. 2002; Suarez-Ortega 2003; Patterson 2004; Barnes et al. 2006; Da Rocha et al. 2008; A-Ortiz and F-Ortiz 2010; Pinho and Martins 2010,	S23	Enabling SMEs to internationalise more rapidly and effectively	Armbrust et al., 2010
MB24	Adapting products complying with tastes and needs of foreign market	Leonidou 1995, 2004; Dean et al. 2000; Da Silva and Da Rocha 2001; Julian and Ahmed 2005; A-Ortiz and F-Ortiz 2010	S24	Collecting analytical information, strengthening administration control, and supporting marketing	Blesa and Ripolla 2008; Zhang et al. 2009; Gulati 1998; Alvarez and Barney 2001; Steensma et al. 2000; Coviello & Cox 2006; Tapscott 2008; Vodafone Australia 2008; Ching & Ellis, 2004; Porter, 2001; Jean & Sinkovics, 2010; Jean, Sinkovics, & Cavusgil, 2010; Jean, Sinkovics, & Kim, 2008; Jean, Sinkovics, & Kim, 2010; Yamin & Sinkovics, 2007

MB25	complying standards and quality based on international market criteria	Katsikeas and Morgan 1994; Leonidou 1995, 2000, 2004; Ramaseshan and Soutar 1996; Morgan and Katsikeas 1998; Tesar and Moini 1998; Dean et al. 2000; Da Silva and Da Rocha 2001; Neupert et al. 2006	S25	the CCU enabling an effective knowledge management that can lead to produce high quality products for niche market	Cavusgil and Knight, 2009; Moen et al. 2003, Reuber and Fischer 2011; Lin and Kuo, 2007; Ho, 2009; Pérez-López and Alegre, 2012
MB26	Other taste and orientation in foreign market	Leonidou, 2004	S26	Enabling to save up costs toward efficient niche production based on market needs	Marston et al. 2011

Therefore, according to the proposed solutions by the CCU for the Marketing Barrier, the following Hypothesis can be proposed:

H$_3$: The CCU has a significant positive effect on mitigation of marketing barriers for the EM-SMEs internationalisation.

3.2.2.4 The Theoretical background for Environmental Barriers

The environments of emerging markets are risky because of having unstable and uncertain economic and political systems. The export markets are vulnerability and risky and always are being faced by difficulties. Thus, because of these risks, those firms, which are able to control their sources of their raw materials as well as sales of their finished products to the end consumers, are more efficient than those that cannot. These conditions lead firms to operate as part of a business group (Chang & Choi, 1988; Khanna & Rivkin, 2001; Singh, 2009).

Some internationalisation barriers emerge within the environment of the foreign markets. These environmental barriers can occur in economy, politic & legislation and sociocultural status of foreign market(s) within which the EM-SMEs intend to operate (Moini, 1997; Kedia and Chhokar, 1986; Leonidou, 2004).

Table 3.4 presents Environmental Barriers of the EM-SMEs in their internationalisation and their impact of the CCU on these barriers.

Table 3.4 - Source-Author: Environment Barriers

Environmental barriers and the potential impact of the CCU					
Barrier	**Problem**	**Studies**	**Proposed Solution**	**Possible Solution**	**Studies**
EB27	Instability in currency exchange	Czinkota and Ronkainen 2001; Leonidou 2004; Jones, Fallon and Golov, 2000; Bekaert and Harvey, 2003	S27	Instant and up-to-date currency exchange information	Research and Markets 2013
EB28	Psychic distance in business practices /Sociocultural & language	Leonidou 1995, 2000, 2004; Tesar and Moini 1998; Dean et al. 2000; Da Silva and Da Rocha 2001; Crick 2002; Shaw and Darroch 2004; Julian and Ahmed 2005, /Naidu and Rao 1993; Leonidou 1995, 2000, 2004; Kwon and Hu 1996; Peel and Eckart 1996; Ramaseshan and Soutar 1996; Bennett 1997; Karagozoglu and Lindell 1998; Dean et al. 2000; Da Silva and Da Rocha 2001; Crick 2002; Fllis 2002; Hornby et al. 2002; Suarez-Ortega 2003; Julian and Ahmed 2005; Neupert et al. 2006; A-Ortiz and F-Ortiz 2010; Pinho and Martins 2010	S28	Geocentric facilitation of the CCU to adapt language and normative practice	Persinger et al. 2007; Sprano and Zakak, 2000; Javalgi, et al. 2004
EB29	Rigorous rules and regulation in host countries	Shoham and Albaum 1995; Peel and Eckart 1996; Ramaseshan and Soutar 1996; Jensen and Davis 1998; Morgan and Katsikeas 1998; Dean et al. 2000; Leonidou 2000, 2004; Crick 2002; Patterson 2004; Shaw and Darroch 2004; Da Rocha et al. 2008; Korneliussen and Blasius 2008; Pinho and Martins 2010; Jones, Fallon and Golov, 2000; Bekaert and Harvey, 2003	S29	Enabling firms to operate beyond hosts' jurisdictions	Taylor, et al. 2010

EB30	Undesirable regulations in home country	Cateora and Graham 2001; Leonidou 2004; Jones, Fallon and Golov, 2000; Bekaert and Harvey, 2003	S30	Enabling firms to operate beyond home's jurisdictions	Taylor, et al. 2010
EB31	Absence of government incentives in home country	Leonidou 1995,200,2004; Shoham and Albaum 1995; Peel and Eckart 1996; Ramaseshan and Soutar 1996; Morgan and Katsikeas 1998; Dean et al. 2000; Da Silva and Da Rocha 2001; Crick 2002; Fllis 2002; Suarez-Ortega 2003; Shaw and Darroch 2004; Julian and Ahmed 2005; Barnes et al. 2006; Da Rocha et al. 2008; A-Ortiz and F-Ortiz 2010; Pinho and Martins 2010; Jones, Fallon and Golov, 2000	S31	Enabling an instant process in technology development by skipping intermediate stages	(Iovan & Daian, 2013).
EB32	Political turmoil in foreign market	Terpstra and Sarathy 2000; Leonidou 2004; Jones, Fallon and Golov, 2000; Bekaert and Harvey, 2003	S32	Enabling business activities flow on cloud beyond any political instability	Taylor, et al. 2010
EB33	Bad/Worsening economic condition in foreign market	Leonidou 2004; Jones, Fallon and Golov, 2000; Bekaert and Harvey, 2003	S33	Efficient capability in alleviating costs and proposing of financial facilitation for end users	Armbrust et al., 2010

Therefore, according to the proposed solutions by the CCU for the Environmental Barrier, the following Hypothesis can be proposed:

H$_4$: The CCU has a significant positive effect on mitigation of environmental barriers for the EM-SMEs internationalisation.

3.2.3 The Theoretical background for Accelerated internationalisation

Welch and Luostarinen (1988:36), defined internationalisation as*: "The process of increasing involvement in international operations".* Many empirical studies show that many young and small firms despite having little experiences, knowledge and capital resources; they are very agile in terms of exporting at very first early stages after their foundation. As it was studied that, the prevalence and emergence of these type firms are hugely based on the influences of the globalisation trend and the emergence of advanced innovations occurred in ICTs (Knight & Cavusgil, 1996) in addition, the key of these

influences exist in the Internet capabilities (Bell and Loane, 2010). It is noteworthy that, many other studies emphasis that firms in all sizes can benefit from the availability and the advanced ICTs, such as lower marketing communication costs, the standardisation of prices, reducing the time for information circulation, enhancement in communications of buyer and seller, transparency and eliminating or setting the intermediaries (Chattell, 1998; Quelch & Klein, 1996).

According to the literature review and the impact of the CCU on four classified barriers for the EM-SMEs internationalisation, the mitigation in internationalisation barriers can lead to a speedy internationalisation, where the effectiveness of the CCU on alleviating the barriers evens the trend of internationalisation for the EM-SMEs. Any contribution of effectiveness of the CCU for mitigation of internationalisation barriers can assist the EM-SMEs internationalisation trend in order to be encountered of an accelerated internationalisation.

According to Gabrielsson & Kirpalani, (2004) the competitive advantages of equipped firms with the CCU could convert them as BGs as "*Born Globals from inception, seeks to derive significant competitive advantage from the use of resources and the sales of outputs in multiple countries*". Therefore, this study proposes the following hypothesis:

H5: Internationalisation Barrier Mitigation by the CCU has a significant positive impact on accelerated internationalisation.

In conclusion, figure-3.1 illustrates a schematic conceptual framework of this research study in order to test the effectiveness of the CCU for acceleration of internationalisation by SMEs from the Emerging Markets. In other words, the EM-SMEs are able to accelerate their internationalisation when they could eliminate or mitigate the technical barriers of internationalisation by use of CC capabilities.
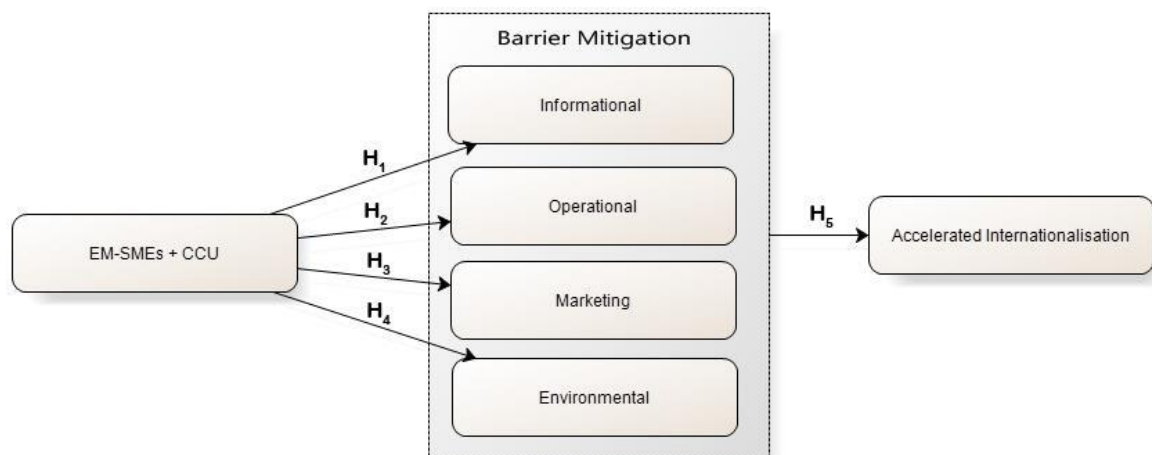
2. Figure 3.1 - Theoretical model of the Research Study
The impact of the CCU on the EM-SMEs' Internationalisation Barriers

In order to examine the effectiveness of the CCU on accelerated internationalisation the following conditions have been hypothesised. In addition, in a deductive approach this research study tests the aforementioned hypotheses in order to find out the positive effectiveness of the CCU towards mitigations of aforementioned group factors barriers. Thus by the CCU barrier mitigation The EM-SMES are able to accelerate their internationalisation.

3.3 Summary

To sum up, the study provided a conceptual thought in order to examine how the CCU can be effective and facilitate the EM-SMEs to accelerate their internationalisation. From the various studies that have been conducted to identify the internationalisation barriers, this research study has scrutinised thirty-four barriers and proposed solutions for each barrier through the CCU. The barriers and the possible proposed solutions have been classified into four main groups of informational, operational, marketing and environmental. This chapter has proposed a theoretical model of the research study where a quantitative empirical study will be examined the correlation between the variables. Moreover, the study has developed Four-research hypothesis. These hypotheses need to be tested in a quantitative method for assigning the effectiveness of the CCU in mitigation of internationalisation barriers and ultimately to evaluate whether these capabilities can lead to mitigation of internationalisation towards a speedy internationalisation.

Chapter Four
Research Methodology

4.1 Introduction

This research attempts to investigate the impact of the CCU in mitigation of internationalisation barriers for the EM-SMEs towards an accelerated internationalisation. According to the aim of this research study, this chapter will structure the research and perform how the major sections of the research study, including the sample, measures, and methods of assignment, work together to address the research question. Moreover, an appropriate research methodology for the research study will be undertaking with logical research process, adopting an appropriate philosophy, selecting suitable approach for the research, finding appropriate strategy for data collection, and choosing appropriate choice of method for data collection.

Furthermore, the researcher in details will discuss the empirical research methodology including data collection and data analysis, defining population and sample selection, developing a survey questionnaire, piloting the study for assessing the reliability and validity of the questionnaire, justifying the data and finally defining the time horizons for the research study.

4.2 Research Philosophies

The first step of designing the research methodology is to define the research philosophy, which is the outer layer of Saunders et al. (2009) research onion-diagram. This comprehensive term delineates to the development and nature of knowledge (Saunders et al., 2009:l07). The adapted research philosophy would contain important belief about a path in which a researcher sees the world. As these beliefs can support the research methods and strategy that the researcher chooses for the arguments of the study (Saunders et al., 2009). Thus this is about examining the researchers' or other beliefs on how knowledge is developed, how the researchers know what they know, and what the researchers regard as adding acceptable knowledge within a particular field of study (Longbottom, 2010). Generally, in the philosophy of knowledge, ontology and epistemology are both important elements and they are clearly distinctive. While ontology is about what things are, epistemology is concerned with the way researchers know things.

4.2.1 Ontology and Epistemology philosophies

According to Saunders et al. (2009), ontology is about the nature of reality. An ontological explanation would suggest a belief in a way that there is a single reality or truth and that reality is objective that can be tested for acceptance or rejection. Objectivism and subjectivism are the two main aspects of the ontology. As objectivism depicts the position of social entities that exist in reality and as external social-actors are concerned with the existence of these entities whereas, subjectivism maintains social phenomena that are caused from the ability to see the consequent actions of these social players. Whereas, the epistemological principles are based on knowledge that scientifically either deductively or objectively is tested. While for the research philosophy that is based on the epistemological principles the interpretivism/phenomeno1ogy of the knowledge will be constructed inductively, and subjectively.

In addition, an ontological explanation would suggest a belief that there is no single reality or truth, but that reality is subjective and bound by the interpretations of the social actors. Table-4.1 presents the contrast between positivism and interpretivism in regards of ontological research philosophy.

Table 4.1 - Ontological principles (Longbottom, 2010)

Research philosophy	Positivism	Interpretivism/Phenomeno1ogy
Ontological assumptions:	Single reality or truth which may be tested and proven	No single reality or truth, but is subject to interpretation in different contexts

Therefore, it can be inferred by the tables 4.1 that with quantitative techniques, there are clear rules with statistical procedures that can be followed to produce objectively of generalizable findings. Whereas, Qualitative research has to tackle issues 'subjectivity', based on the 'social construction' that are considered as concepts which are open for interpretation.

Bryman and Bell (2011) define epistemology as a theory of knowledge that is used to describe a situation. According to this definition, it can be inferred that what may be considered as underpinning principles and values associated with procedures for capturing an acceptable knowledge. Moreover, according to Longbottom (2010), based on the epistemological point of view can be explained based on two extreme and opposing research philosophies that have been identified as positivism and interpretivism/phenomenology. The table-4.2 presents the contrasts between positivism and interpretivism in regards of epistemological research philosophy.

Table 4.2 - Epistemological principles (Longbottom, 2010)

Research philosophy	Positivism	Interpretivism/Phenomeno1ogy
Epistemological principles:	Scientifically tested: Deductive Objective	Socially constructed Inductive Subjective

Moreover, a discussion on research philosophy usually commences with consideration of two opposite research perspectives, positivism and interpretivism /phenomenology (Longbottom, 2010).

Therefore according to these aforementioned philosophical explanations and based on the investigation of this study about the effectiveness of the CCU in mitigation of the EM-SMEs' barriers internationalisation, the ontological positivism would be an appropriate justification for this study. Therefore, it can be predicted that the emergence of CC as a new technology enables entities like the EM-SMEs to benefit from utilisation of cloud computing in order to mitigate their internationalisation barriers to speed up their internationalisation. So gaining effective benefits from the CCU can be tested for acceptance or rejection in this study in order to find out the reality of cloud computing facilitations that could enable these entities to mitigate their barriers.

4.2.2 Positivism and Interpretivism philosophies

The concept of positivism is directly associated with the idea of objectivism where researchers relies on their viewpoints in order to assess the matters in society objectively rather than subjectively (Cooper and Schindler 2006). The philosophy of Positivism can be classified as a quantitative method, such an exploratory model that can investigate potentially the reality and the source of a social phenomenon (Schutt, 2006). Creswell (2009) claims that the positivism philosophy can be employed as a determinist approach "*whereby the cause determines the effects or outcomes*" Creswell (2009:8). Based on this fact it can be inferred that the effect of the CCU on mitigation of internationalisation barriers can be considered as cause and effects in which this research study intends to investigate whether the EM-SMEs are able to mitigate their internationalisation barriers by the CCU.

Moreover, Creswell (2009:7) includes that a researcher tests variables in a scaling down and reducing contemplation of a distinctive set of thoughts, which "*comprise hypotheses and research questions*" (Creswell, 2009: p.7) where this research study has set some hypotheses that need to be tested quantitatively. In order to find the relationship between variables, this research also intends to design a survey for collecting data. In addition, it has been stated that positivism research explains "*the interrelationship between real and observable phenomena*" (Riley et al. 2000), and this consequently can be considered as a model by "*seeking to apply scientific methods to the study of social phenomena*" (Riley et al., 2000:10). In fact, in the positivist approach, the role of human involvement in the

process of investigation is limited where the use of a scientific template for investigation implies scientific inquiries that lead to measurement of fact and reality (Guba, 1990; Crotty, 1998; Maguire, 1987). Commonly this measurement can be included of experiments, surveys and some statistical data analysis (Saunders et al., 2007) and more importantly positivist believes that everything can be found and demonstrated the truth (Fisher, 2007), where a researcher is able to acquire reliable empirical data in order to assess them statistically for knowing the cause and effects (Hudson and Ozanne, 1988).

Whereas a quantitative method for the pattern of Interpretivism, would be suitable for social sciences to analyse activity and behaviour (Remenyi et al., 2009). The prominence of interpretivists is considered by examinations and their consequences when they consider the nature of social reality is a "subjective" rather than "objective" matter (Collis and Hussy, 2003; Lindlof and Taylor, 2002; Prus, 1996; Schutt, 2006). This philosophy is about understanding, argument, experiences, explanation, assessment and descriptions (Jupp, 2006). The Interpretivists sees the world as a complex reality that needs justification towards the expansion of general rules, theories and hypotheses, where the researchers of this discipline believe in the difficulty of comprehension of the word surrounding (Saunders et al. 2007).

Moreover, Sander et al. (2007) assert that human beliefs and their behaviour underpin world's interpretation. The philosophy of this interpretation can be conducted through a qualitative research methodology and they argue that the philosophy of Interpretivists is "contextual" when this cannot be generalised. In addition, this type of philosophy could lead to interpretation of human being and their point of views.

Therefore, in a research study, the outcome of this type of examinations could lead to construct theories on a phenomenon and in fact, researchers consider this type of philosophy as an inductive research study (Hatch and Cunliffe, 2006); where, this research study is for a theory that has been set already. Based on these facts and regarding the theme of this research study the effectiveness of the CCU in mitigation of the EM-SMEs' barriers towards a speedy internationalisation is a theory in which needs to be conducted deductively and tested quantitatively. Interpretivists-researches conduct their own research studies based on the qualitative method in order to appreciate the social phenomenon;

therefore, this method cannot meet the needs of this research study, where this study predominantly intends to conduct its research by measuring up the variables in its conceptual framework and empirically validate the conceptual model by its hypotheses. Table-4.3 presents the main differences between positivism and Interpretivism adapted from Longbottom (2010).

Table 4.3 - The main differences between Positivism and Interpretivism

Positivism	Interpretivism
Word is external and objective	World is socially constructed and subjective
Observer is independent	Observer is part of what is observed
Focus on facts	Focus on meaning
Deduction	Induction
Nomothetic	Ideographic
Quantitative Data	Qualitative data
Casualty and laws	Understanding of what is happening
Focus on individual elements	Look at totality of situation
Large sample	Small sample in depth over time

(Adopted from Longbottom, 2010)

In conclusion, as this research study investigates the effectiveness of the CCU on mitigation of the EM-SMEs' internationalisation barriers and in order to achieve the aim based on measurable hypotheses from the literature review; it can be inferred that the appropriate philosophical approach for this research study is positivism. Where this type of philosophical approach as the main dominant philosophy for this study enables the researcher to test its conceptual framework according to the patterns of the positivist approach, which are based on numeracy, accuracy, neutrality and intensity (Jupp, 2006).

Moreover, according to the objectives and the research questions that are provided for this research study also based on the nature of the positivism philosophy, it seems the proposition of positivism is the most suitable philosophy for the purpose of this research study. Hence, this paradigm provides an objective reality against which researchers can compare their claims and ascertain truth. Where, it can be assumed that there are general patterns of cause and effect that can be used as a basis for predicting and controlling natural phenomenon as this research tries to find out the effective relationship of the CCU and the classified barriers in internationalisation for the EM-SMEs, as the aim has been set

to discover these patterns. Moreover, based on the most empirical articles that are related to this research presented in literature reviews (Leonidou, 2004; Kahiya, 2013) this research study intends to be conducted objectively by positivism approach.

4.3 Research Approach

Backing to the Saunders et al. (2009) research onion model, after considering the outer layer of research philosophies the immediate next layer for constructing the research methodology is research approaches. According to Saunders et al. (2003), there are two main approaches exist for a research study as the deductive approach deals with testing a theory and the inductive approach deals with building a theory. Moreover, normally an inductive approach involves reflecting on recent and past experiences and a new theory can be the outcome of it; whereas, a deductive approach is the reverse of inductive research approach and is very much dependent on the research philosophy adopted. Usually positivism is based on deductive approach and interpretive based on inductive approach. Therefore, mainly researches can be conducted inductively or deductively where, this can be conducted either by a hypothesis, being tested by a new theory, or it can be achieved by collecting data in order to form a theory by the new findings (Saunders et. al, 2009).

4.3.1 Deductive approach

A deductive research refers to testing a hypothesis in order to confirm a theory, which is already stated. As the basic procedures for a deductive research is stated as, deducting a hypothesis, expressing the hypothesis in operational term, testing the hypothesis, exploring the outcome of testing and finally in some cases to determine some modifications in the stated theory (Robson, 2002). As Saunders et al. (2009) stated that the matter in a deductive research is testing hypothesis to confirmation of a specific theory as this approach is often used in scientific research and natural science. Moreover, a deductive research can be a lower risk to be conducted because it takes less time and effort, but an inductive research can be quite risky because there is always an uncertainty of getting the right data needed (Saunders et.al., 2009).

According to the chosen philosophy for this research study (Positivism) and the characteristic of aforementioned research approaches, a deductive approach seems to be

the most suitable approach for the purpose of this research as this study will be conducted by a quantitative research approach and it follows a deductive approach. Moreover, this research is also intending to test empirically five hypotheses in order to find out whether they are confirmed or rejected later by this study.

In addition, this study has a positivist research primarily attempts to investigate the proposition of a conceptual model in terms of evaluation of the effectiveness of the CCU for the EM-SMEs for mitigating the barriers of internationalisation; therefore, a quantitative approach would be the best appropriate method for this purpose. Moreover, finding relationship among variables in a testing objective theory is considered as qualitative approach (Cresswell, 2009) where in this research study the effectiveness relation of the CCU on the classified internationalisation barriers are matters. In addition, according to a quantitative approach for this research study, a survey as an experiment study would be suggested and in the following sections, full details of the chosen research strategy will be justified the study. Figure 4.1 presents the process of this research study and according to the study of Bryman and Bell (2011) the following processes for a deductive research will be followed by this research study:

> 1. Theory
>
> 2. Thesis Hypothesis
>
> 3. Data Collection for Thesis
>
> 4. Findings of thesis
>
> 5. Hypothesis confirmation or rejecttion
>
> 6. Revision of theory
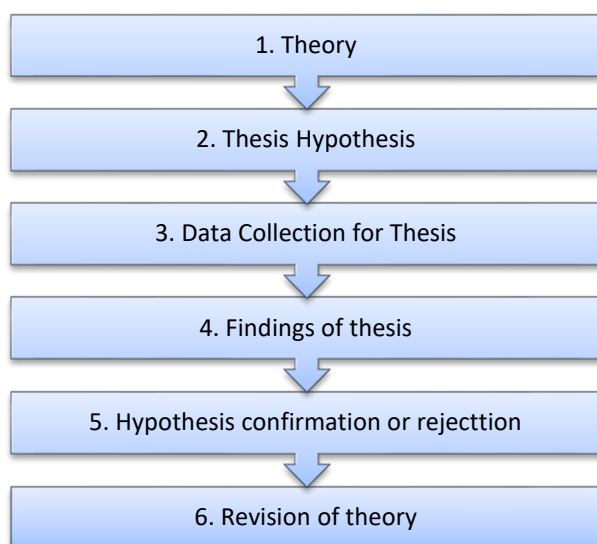
Figure 4.1 - The process of deduction (Bryman and Bell, 2011)

4.3.2 Inductive approach

In contrast, it can be assumed that inductive approach is the reverse process of a research study, which is examined deductively (Collis & Hussey 2009), moreover, an inductive approach leads to theories development and the outcomes of a research and generally is inferenced and induced from a specific sample (Collis & Hussey 2009). It is necessary to collect data qualitatively for adopting this research approach (Gasson 2003). In addition, there are some constraints exist for using method in a research study inductively; however, many researchers point to the advantages of this method. These advantages can be mentioned as grasping human behaviour in a contextual aspects that cannot be inferred by the theories and understanding of those situations that cannot be hypothesised initially and basically require some personal observations as part of the phenomenon.

Whereas, this research study initially based on the literature review has developed five hypotheses that need to be confirmed or rejected through research findings. Moreover, Saunders et al (2009) believe that the constraints of approaches which are conducted inductively lead researchers to lack of generalisability of findings, bias, as this type of research needs more time to be completed and requires a strategy to overcome a high risk and threat because of possible lacks in emergence of useful data and theory. While as an advantage in an inductive approach, the important thing is to realise what choices of the research path entirely will be depended on the main research questions (Saunders et al. 2009) as this research study makes effort to find response for the main question through its hypotheses.

4.4 Research Strategy

How to answer the research questions is considered as research strategy; moreover, the strategy is considered as a methodological link between chosen philosophical approaches and later this will be connected to the choice of methods in collecting and analysing data. In addition, research strategies can be categorised generally in different approaches such as case study, survey, operational research, narrative inquiry, and experiment grounded theory (Saunders et al. 2012). In addition, research strategies are defined within the third layer of the research onion, which needs to be considered after

peeling away the outer two layers -research philosophies and research approaches. Research strategy and the other two central layers (research choices and time horizon) are the main parts of research design. The research design is defined as a general plan of how a researcher will proceed to respond her/his research questions (Saunders et al. 2009).

Many factors are involved in choosing of a research strategy. Factors such as type of research question, budgeting, time and the capability of researcher are known as the important elements that influence on the assigning a specific strategy for a research study (Remenyi et al 2009). Hakim (2000) stated that a research design depends upon researchers' preference, their research philosophy, and the researches idea as the most appropriate strategy and choice of methods for conducting their research. Research strategy is about choice, to determine appropriate methods to answer the emerging research questions and to form these into a research design and develop research instruments. The choice of research strategy will be leaded by research aim, objectives, research questions, the amount of time needs for doing the research, the availability of knowledge scope, philosophical foundations and other resources which available for the researcher (Saunders et al. 2009).

Saunders et al. (2009) described the following strategies which are the most commonly used in research strategies. These strategies are survey, experiment, action research, case study, archival research study, ethnography and grounded theories. As it was discussed earlier in this chapter, this research follows positivism philosophy and deductive approach. Also due to the essence of the research questions, the availability of resources, the matter of geographical sampling in two countries of Iran and Turkey, and also the limitation of time for collecting data are matter for this research study. Therefore, survey strategy can be as the most appropriate strategy for the purpose of this research and this will be discussed in details in the following section as it is suggested that experimental studies and survey are appropriate methods for a quantitative research strategy (Collis and Hussey 2014).

4.5 The rationale behind the choice of the research strategy

Breech (2005) has proposed a research design map (Figure 4.2). The model is comprised of several layers that need to be peeled off before getting to choose a relevant data collection and data analysis for this research study.

Phylosophy
Posivitism

Approches
Deductive

Strategy
Survey

Choice of method
Mono method

Time Horizons
Cross sectional

Techniques and procedures
Data collection

Figure 4.2 - The research process adapted on Saunders et al. (2009)

4.5.1 Survey research method

Many stages are involved in the research procedures, as they need to be addressed for the research aims, objectives and hypotheses. The main stages involved in the survey design process as Creswell (2003) proposes as follow:

4.5.1.1 The intention of survey research

The ultimate intention of survey research leads to the generalisation. Study of the characteristic, behaviour and attitudes of a population will be possible through the study of sample of that population. The sample needs to be collected properly in order to be representative of that population. This research intends to study the effectiveness of the CCU in mitigation of internationalisation barriers of SMEs in emerging markets. Therefore, the study has chosen the context of emerging markets and the study will be carried out upon SMEs in these markets. According to the definition and the characteristics of SMEs and emerging markets in the literature review, generalising and the possibility of studying this vast area could be possible through sampling in some countries, which can be

considered as appropriate representatives of this context. Turkey and Iran are nominated to be representative of the EMs in this study as the samples are taken from these two countries in order to study the effectiveness of the CCU in mitigation of the EM-SMEs' barriers in internationalisation.

4.5.1.2 Preference of survey method

One of the common and popular methods for collecting data is survey. This method enables researches to collect required data for statistical analysis and ultimately generalise the outcomes for a population (Collis & Hussey, 2014). Survey is considered as an efficient approach to collect considerable amount of data from a major population and assist researchers to have a power and control the procedures (Saunders et al., 2009). Generally, collecting data with survey strategy is connected with a deductive approach where research study commences a theory and it follows the hypothesis in the research in order to test whether these hypothesis are significant or not (Bryman and Bell, 2011).

In addition, surveys are related to positivism that initially tries to examine a theory for enhancing the prediction of understanding of a phenomenon (Collis and Hussey, 2014). The advantages of a survey are known as relatively easy to manage; in comparison of other collecting method can be produce in lesser time; remotely can be mange through online questionnaire. This method can be conducted conveniently beyond geographical boundaries; moreover, survey has the capability of data collection in large quantity; the collected data statistically can be analysed by survey software, and a broad sort of data can be collected. In contrast survey can have some whereas, disadvantages such as respondents may not feel encouraged to provide accurate, honest answers, the participants my not feel comfortable to provide some answers that put themselves in critical situation. Surveys questions can be interpreted by different participants and causes errors (Wyse, 2012).

4.5.1.3 Time horizon

In a survey method, '*Longitudinal*' and '*cross sectional*' are generally mentioned as time horizon in the process of a research method (Crosell, 2003; Saunders et al., 2009). The longitudinal study points to a method of collection of data in which data are collected over an expanded time when data can be collected more than once at different intervals of

time, whereas cross sectional research shows that the data can be gathered at one spot in a specific time (Saunders et al., 2009). Therefore based on a process of strategic decision-making, as this study was involved in an examination for assessing the effectiveness of the CCU on the mitigation of the SMEs' internationalisation barriers that the collection of data will be made at one point of time, and consequently time is limited for data collection. Moreover, regarding the nature of this research study, the time constraints does not affect the nature of the findings hence this research study is static rather than being dynamic. It is noteworthy that the data was collected during Mid-December 2015 to March 2016 as cross sectional in time horizon.

4.5.1.4 Form of data collection

Data collection is considered as a procedure of collecting and measuring some information from a specific population that enables researchers to find answers for research hypothesis through evaluating the outcomes. Creswell (2003) identifies four types survey such as, structured observations, interviews, questionnaires created by self-administration, and reviews by structured record such financial information as he argues that it is necessary to recognise data-collection forms for a research study. Therefore, the methods of collecting data can be varied however; the emphasis must be on the accuracy of collecting data. More importantly, the aim of data collection is capturing a qualified snapshot of evidences from a population to find credible answers for proposed research questions. In addition, regardless of quantitative or qualitative methods of a research study, the accuracy of collecting data is essential for preserving the honesty of a research study. The both methods of collecting data should determine an instrument for collecting appropriate data and help to avoid the likelihood of errors. Therefore, it is essential to ensure that method for the data collection is valid and accurate and has been gathered based on the argument of research study (Sapsford, 2006; Jupp, 2006).

Generally, data collection can be conducted in three ways of survey, interviews and focus groups. Where in a survey a standard questionnaire can be conducted through postal mail, telephone, email, and online survey whereas in an interview a structured and unstructured questionnaire can be conducted through face-to-face conversation with an important person in a community. An online survey is considered as an appropriate method for this study in order to examine its five hypotheses. Collecting data through an online survey would be

suitable and cheapest way that enables researchers to collect abundant amount of data in just short period. In addition, the link of an on-line survey can be disseminated by emails, social networks, different communicative application in cloud computing and by using of direct web survey. Moreover, collecting data through online survey even assists researcher to minimise the human errors that may cause by manual data entering. In addition, an online survey enables researcher to have a better geographical accessibility as this method can be considered as an appropriate and therefore, is rational way for accessing to SMEs in different countries. Furthermore, an online survey enables the researcher to provide the questionnaire in different languages for the ease of participants and maximising the clarity of understanding.

This research study intends to deploy its designed questionnaires by using of Survey monkey at https://www.surveymonkey.com/. Collecting data by SurveyMonkey has been chosen because this online facilitator can be customised easily, the results can be shared and exported conveniently, generating copies and transferring the surveys is easily. Images, logos and documents can be easily stored with feature of a shared library, moreover the site is accessible anytime, anywhere and the survey can target audiences.

In addition, researcher is able to see how the results stack up to other organisations with benchmarks. Furthermore, in high security, a professional report from the collected data can be created and published in just a few minutes. This online survey facilitator supports multi language where, for the convenience of participants and avoiding any misunderstanding, the questionnaires have been translated in three languages of English, Turkish and Farsi as three collectors are defined in Survey Monkey for these purposes. A Likert scale uses in this survey and it is expected that participants categorise their relative responses in five categories.

4.6 The research method choice

This section tries to justify the research method choice. Firstly based on the classification of research method, which has been done in the study of Saunders et al. (2009). Secondly, the research method choice with the rationale behind, and the chosen choice will be investigated. Lastly, in this section the survey research method will be proposed for this study.

4.6.1 Research Method

In the research method, two main methods are specified as quantitative and qualitative. Regarding the contrast of quantitative and qualitative, it was stated that,

> "*Qualitative* researchers stress the socially constructed nature of reality, the intimate relationship between researcher and what is studied, and the situational constraints that shape inquiry. Such researchers emphasize the value-laden nature of inquiry. They stress answers to questions about how social experience is created and given meaning. In contrast, *quantitative* studies emphasize measurement and analysis of causal relationships between variables, not processes. Proponents of such studies claim that their work is done from a value free framework".
>
> (Denzin and Lincoln, 2007:10)

4.6.1.1 Quantitative method

Bryman and Bell (2007) underlined quantitative research on quantification of the data analysis and data collection. Moreover, in a quantitative research, an author tries to measure up the cause and effect of variables in an array rather than to analyse the process of a trend (Denzin and Lincoln 2007). The method for quantitative approach is deductive as it leads the research study (Collis and Hussey, 2014). Attempting to predict and understanding a phenomenon by testing a theory through a preliminary intention can be done by a quantitative approach, which is associated with positivism (Saunders et al., 2012).

In a deductive research study, the study commences with a theory and later on, it leads to hypothesis. Afterwards the study follows the stage of data collection and findings as this will be rejected or confirmed by hypothesis and revision of the theory later in the study (Bryman and Bell, 2007). Generally, a quantitative research study entails survey and experimental research strategies (Collis and Hussey, 2014) and it conducts survey by means of questionnaire, structural observation and interviews (Saunders et al. 2012). Generally, data collection in quantitative research methods can be conducted in various approaches. The approaches that can be used for data collection by the researchers are named in Table 4.4.

Table 4.4 - Quantitative Research through Common Approaches (Sukamolson, 2005)

No.	Methods	No.	Methods
1	Survey	7	Correlational research
2	Custom surveys	8	Trend analysis
3	Internet surveys/e-mail/ Mail	9	Exploratory research
4	Telephone surveys	10	Descriptive research
5	Self-administered questionnaire surveys	11	Experimental research
6	Omnibus surveys		

In addition, Sukamolson (2005) has pointed to many advantages for using a quantitative research method. Table 4.5 presents the advantages of quantitative research method, which have been mentioned accordingly.

Table 4.5 - Advantages of Quantitative Research (Sukamolson, 2005)

No	Advantages of quantitative method
1	Providing large populations for estimation;
2	Ability to indicate the characteristics of people in large quantity;
3	Providing outcomes statistically;
4	Allowing statistical comparisons among various groups;
5	Creating definitive and standardised precision;
6	Measuring the level of occurrence, actions, trends, and so on;
7	Being able to answer such questions as "How many?" and "How often?"

4.6.1.2 Qualitative method

In contrast, a qualitative research study entails inductive method when the theory of a study would become a result of a research study (Collis and Hussey, 2014). Bryman and Bell (2007) state that the emphasis of qualitative method is on the expression of the words through analysis of collected data; where, delving and grasping the meaning of groups and individuals allocate to human or social problems (Cresswell, 2009). Moreover, in an inductive research study a researcher collect some generalizable outcomes out of an observation in order to construct a new theory (Bryman and Bell 2011). The process of a qualitative research study, which is associated with interpretative philosophy, can be

preceded through a topic within a context; thereafter this method uses an emerging designs and categories, as they will be recognised during the research study process (Collis and Hussey, 2014). Generally, narrative research, case studies, ethnography and grounded theories can be considered for a qualitative study (Saunders et al., 2012). In regard of four main areas in the analogy of research study, table 4.6 presents a comparison between a quantitative and qualitative research study in different sectors of specification, the role of research study, the philosophy of the research and the strategy of research (Saunders et al. 2012).

Table 4.6 - An analogy of quantitative and qualitative research study (Saunders et al. 2012)

Sectors	Quantitative	Qualitative
Specifications	Testing the connection and relationships among the variables; measuring numerically; and analysing statistically.	Collecting data by using of various technics; a new theory is developed by the participant's meaning and their relationships
The role of theories in a research	Conducted Deductively; the process starts with testing of hypothesis thereafter the proposition can be confirmed or rejected.	Conducted Inductively; a generalizable conclusion of an observation or findings leads to create a new theory.
The Research philosophy	Positivism- Initially it attempts for testing a theory to rise the prognostic understanding of a phenomenon	Interpretivism- some sort of categories are identified during the study of a subject in its ground and the use of an outcome design.
The strategy of research	Survey and experimental	Grounded theory, Case studies ethnography and narrative research studies

4.6.2 Classification of research method

The research purposes have been classified into three categories: exploratory, descriptive, and explanatory research. An individual study could have multiple purposes or might be part of a program of research that spans two or all three purposes. Moreover, the research process typically begins with a question that needs an answer or a problem that must be solved (Saunders et al. 2009). Regarding the classifications, it is essential to

appreciate three different types of research studies. This could help and enable the researcher in order to pick the most appropriate research study for his research study.

4.6.2.1 Exploratory studies

In this type of study Saunders et al. (2009) believe that a researcher needs to obtain three preliminary procedures to conduct a research that comprises literature review, methods in interviewing in order to elicit views and insights of experts based on conducting focus group interviews. The advantages of this type of study are its flexibility and adaptability (Adams and Schvaneveldt, 1991); however, the risk of determent of time is high because of changes in the direction of the research and consequently the necessity for recollecting new data. Moreover, Mack et al. (2005) claim that an exploratory study tends to use qualitative research method and needs to be conducted in-depth interviews. It seems, for a research process in strategic decision-making, the researchers most often have tried to adopt explanatory studies rather than studies that are based on the exploratory studies, when researchers need to be ensured for their research effort that results to do not to involve with any changes in its orientation. Hence, this research study intends to be conducted quantitatively through collecting data by questionnaire survey therefore an exploratory study cannot be set out for this research.

4.6.2.2 Descriptive studies

Descriptive research seeks to provide an accurate description of observations of phenomena. The object of the collection of census data is to describe accurately basic information about a population at a specific spot in time. The objective of much descriptive research is to map the terrain of a specific phenomenon. It has been argued that the studies based on descriptive way are pioneers to either explanatory or exploratory research studies also it has been claimed that, this type of study is much an expansion of an explanatory research (Saunders et al. 2009). While it has been found that in the context for process of strategic decision-making as well as in many disciplines, researchers extensively use and follow their studies based on a descriptive path. Furthermore, Saunders et al. (2009) state that in the descriptive research studies the researchers emphasise this matter that the descriptive studies cannot be ended by themselves, when these studies need to be ended by the researchers. This means, descriptive research studies usually will lead to interpretation,

as these studies alone cannot be considered sufficient for an empirical research. Based on this fact this research study san not be categorised in this group where finding certain relationship in the research and testing series of hypotheses with understanding of the relationships between the variables are the main concern of this research study.

4.6.2.3 Explanatory and Confirmatory Studies

Explanatory data analysis (EDA) looks for explanations of the nature of certain relationships. Hypothesis testing provides an understanding of the relationships that exist between variables. Causal relationship among different variables can be established by EDA studies. Moreover, Saunders et al. (2009) state EDA studies are able to focus on a situation that the relationship between two variables can be identified for this situation. They added that in EDA study, researchers through a quantitative research study could explain a phenomenon.

In addition, many researchers apply different research study types like survey, experiment, case study, ground theories, and ethnography as generally the research type can be considered as strategy for a research study (Saunders et al. 2009). Given that conducting EDA research studies by means of survey and experiment might fall in a quantitative research method while the other strategies can be classified as qualitative research strategy.

Moreover, data analysis for a research study often conducted into two phases initially starts with an EDA and then completes with a confirmatory data analysis (CDA). In the EDA phase "*isolates patterns and features of the data and reveals these forcefully to the analyst*" (Hoaglin, Mosteller, and Tukey; 1983). Therefore, if a model is fitted to the data, the EDA is able to find patterns that represent deviations from the model. Consequently, these patterns would lead the analyst to revise the model, and also the process is repeated. Whereas, the CDA "*quantifies the extent to which -deviations from a model- could be expected to occur by chance*" (Gelman; 2004) as CDA uses traditional statistical tools of inference, significance, and confidence.

Therefore, concerning this type of study, it seems initially an EDA study can be appropriate for this research where finding the relationship between the variables by considering the CCU phenomenon in order to investigate the effectiveness of this phenomenon on mitigation of internationalisation barriers for the EM-SMEs could be possible by a quantitative method in an explanatory study. Furthermore, in statistics, the EDA is an approach to analyse data sets in terms of summarising their main characteristics, based on visual methods. Thus, a statistical model can be used primarily based on the EDA to evaluate what data can be unfolded beyond the formal modelling or hypothesis-testing task. Secondly, as the EDA is sometimes compared to investigation work and the process is considered as gathering evidence for confirmation of these evidences, the study as well needs to be proceeded by the CDA which is comparable to a court trial and also this is considered as a process of evaluating evidence. Therefore, the exploratory analysis and confirmatory analysis "*can -and should-proceed side by side*" (Tukey; 1977). Consequently, this research study benefits EDA and CDF for its argument.

4.7 Research design

According to Czaja and Blair (2005) this survey tries to be conducted through five different stages: (1) survey design, (2) pilot testing, (3) rectifying the questionnaires and samples, (4) data collection and (5) data analysis. Moreover, this research study intends to be conducted through a quantitative method. Based on Sekaran study (2003) a quantitative research could be comprised of series of sections such as the study purpose, type of study, the setting for a study, the analysis units, the time horizon of a research study in which the constraints a research could interfere with the study, collecting data and data analysis comprise a research design. Moreover, Kumar (2005) argues that designing of a research comprises descriptions of research problem through pointing precisely of aim, objectives and hypotheses that lead to ultimate analysis of the collected data whereas, the outline of the research has been defined as "*a framework or blueprint for conducting the research project*" (Malhotra, 2010:78).

Having a general plan for answering the research question is defined as research design. The plan should have a clear objective for the research question; it needs to specify the source of data collection and having plan for analysing them also consider the ethical

issues (Saunder et al. 2012). Moreover, the research design has been defined as a detailed procedure, which is used by researchers to lead and centralise their study (Collis and Hussey 1997).

This research study has taken a detailed reviews on the literature for identifying internationalisation barriers for the EM-SMEs and proposed solutions for these barriers by the CCU. The first step presents the following four constructs as results of the literature review: Scale of Informational, Scale of Operational, Scale of Marketing, and Scale of Environmental. Backing to the chapter three the conceptual model was developed along with five proposed hypothesis. The chosen strategy for this research study is survey and its justification will be provided in this chapter. The second phase is to gather the data and this research study intends to perform initially a pilot research study in order to check the reliability and validity of self-administered questionnaire through on-line survey in the context of Iranian and Turkish markets as nominated emerging markets. Then, the researcher will amend and rectify the questionnaire accordingly in order to be able to create the final questionnaire for the study. Thereafter, the main collected data will be conducted by an on-line survey. Furthermore, in the final phase of this study, the researcher intents to analyse and discuss the outcomes of the gathered data and the outcome of this plan is to achieve the aim and objectives, which have been set earlier in this research study.

4.7.1 Development of the survey instrument

For testing the research hypothesis, a survey and a questionnaire has been designed to collect data for this analysis. The researcher has developed the questionnaire into two main sections. The first part comprises Likert questions as this section is comprised into five sections of informational, operational, marketing and environmental barriers and accelerated internationalisation.

The second part of the questionnaire consists of closed answer questions for collecting more information about the magnitude level of integration of participants with cloud computing usage. This part has been designed in a way to determine the frequent use of CC applications by the EM-SMEs. This can be indicated as the degree of the EM-SMEs integration with CC. In other words, this part will help the researcher to find to what extent

the EM-SMEs are integrated with the CCU. In addition, the questionnaires have been provided in three languages (English, Turkish and Farsi) as this enables to facilitate participants to answer more confidently to the survey with minimum risks in ambiguity and lack of misunderstanding for helping to obtain precise answers. This section lists the main items that were incorporated with each scale in the questionnaire.

4.7.1.1 Part 1: Likert questionnaire

According to the literature review of the EM-SMEs' internationalisation barriers and the possible solutions of the CCU (NIST 2011) the following tables match up the problems of internationalisation barriers with the proposed solution(s) by designing relevant instruments for each scale. Moreover, following Likert instruments have been developed in order to measure the effectiveness of the CCU on the different barriers.

Developing instrument for scale of Informational Barriers:

According to the literature reviews, four informational barriers are matched up with four CC possible solutions and the instruments of Q3 and Q4 will examine these solutions for the items. Table 4.7 presents the instrument of Likert Questionnaire for this scale.

Table 4.7 - Developing instrument for informational barriers

Barrier	Problem	Proposed Solution	Possible Solution	Q. Code	Likert Questionnaire
IB01	Inadequate data to place and analyse for target market	S1	Evoking and sorting useful data stored in Cloud by search engines technologies	Q4	Our Company identify customer information by using of search engines in home/foreign official websites.
IB02	Uncertain, misleading and timely data in foreign market	S2	Accessing to appropriate data through foreign official websites stored on the cloud	Q3	Our Company finds effective information for trading opportunities on home/foreign official websites.
IB03	Identifying opportunities in foreign markets	S3	Conducting convenient research for business opportunities through official agents websites	Q4	Our Company identify customer information by using of search engines in home/foreign official websites.
IB04	Weakness of identifying and communicating with potential overseas customers	S4	Ubiquitous, convenient and on-demand networking to communicate with potential customers;	Q3	Our Company finds effective information for trading opportunities on home/foreign official websites.

Developing instrument for scale of Operational Barriers:

According to the literature reviews, seven operational barriers are matched up with seven CC possible solutions and the instruments of Q6, Q7, Q8, Q9, Q10, and Q11 will examine these solutions for the items. Table 4.8 presents the instrument of Likert Questionnaire for this scale.

Table 4.8 - Developing instrument for operational barriers

Barrier	Problem	Proposed Solution	Possible Solution	Q. Code	Likert Questionnaire
OB05	Insufficient managerial time to manage exporting	S5	the CCU assists managers to save up time in order to export	Q6	Utilising various applications connected to internet on mobile phones, tablets and PCs can save up daily activities of the management.
OB06	Insufficient skilful personnel for exporting	S6	the CCU leads SMEs to add up skilful employees in export by reducing IT personnel	Q7	Utilising various applications connected to internet on mobile phones, tablets and PCs can help our management to be more focused on their business rather than IT.
OB07	Insufficient production capacity for exporting	S7	the CCU enables SMEs to be more business focused in their productions		
OB08	Insufficiency in finance for exporting	S8	Assisting to mitigate costs effectively	Q8	Utilising various applications connected to internet on mobile phones, tablets and PCs can help our management to reduce current costs and allocate more finance on its core business.
OB09	Unfamiliarity with paperwork and export procedure	S9	the CCU enables information being provided officially and the authorities may even explicitly offer cloud services to the public	Q9	Utilising various applications can help our management to use informative and official websites in target markets and get familiar with rules and regulations of document procedures.
	Unfamiliarity with foreign law				
OB10	Difficulty in communication with customers in foreign market	S10	Establishing mass media and interpersonal communication channels	Q10	Utilising various applications have facilitated communication with customers and representatives in foreign markets and enable firm to monitor their requirements and activities.
OB11	Difficulty in fast collecting debts from the customers	S11	Prevalence of new methods in electronic transaction by the CCU	Q11	Using applications of digital banking on mobile phones, tablets and PCs enable our company to manage relatively easy financial transactions in both home and target markets.

Developing instrument for scale of Marketing Barriers:

According to the literature reviews, fourteen Marketing barriers are matched up with fourteen CC possible solutions and the instruments of Q13, Q14, Q15, Q16, Q17, Q18, Q19, and Q20 will examine these solutions for the items. Table 4.9 presents the instrument of Likert Questionnaire for this scale.

Table 4.9 - Developing instrument for marketing barriers

Barrier	Problem	Proposed Solution	Possible Solution	Q. Code	Likert Questionnaire
MB12	Difficulties in doing after-sales services in foreign market	S12	the CCU works as a main actor in networking and in doing after-sales services in an organisation	Q14	Utilising various applications connected to internet such as email, networking, storing, data sharing, and audio-visual communications can facilitate the company after-sales services duties.
MB13	Immoderate transportation/insurance expenses	S13	Improving road safety, travel reliability, informed travel choices, and traffic resilience to moderate transport/insurance costs	Q19	Due to accessing clear information such as, weather condition, road and travel safety, environment protection, and traffic awareness, our company experiences lesser insurance and transportation costs.
MB14	Linking with potential representatives in foreign market	S14	Capabilities in linking up with competent representatives	Q16	Utilising powerful networking and convenient communication with applications on mobile phones, tablets and PCs cause our company effectively manages distribution channels in target market.
MB15	Holding an effective surveillance upon intermediary in foreign market	S15	the CCU enhances direct networking and eliminates the intermediaries	Q20	Company is able to set out efficiently some promotional activities in foreign market through social networking applications with targeting right customers.
MB16	Setting proper promotional activities in foreign market	S16	Enable digital promotion through STP strategy (segmentation, Targeting and positioning)		
MB17	Difficulty with distribution channels in foreign market	S17	Assisting to facilitate distribution channels in Foreign market	Q16	Utilising powerful networking and convenient communication with applications on mobile phones, tablets, and PCs cause our company effectively manages distribution channels in target market.
MB18	Availability of proper distribution channels for exporting	S18	Strengthening the distribution channels by facilitating networking and communication		

MB19	Difficulties to supply the product continuously	S19	Enabling end–to-end in structure of supply chain	Q17	Utilising various applications enable the company consistently connects with its representatives in foreign markets and this leads to foresee any deficits in the markets.
MB20	Inaccessible warehousing in foreign market	S20	the CCU can assist SMEs to access proper information	Q18	Utilising various applications connected to internet on mobile phones, tablets, and PCs assist the company and our agents to gain proper information for warehousing in target markets.
MB21	Offering reasonable finished-prices for consumers	S21	Ability of offering satisfactory prices to clients	Q15	Utilising various applications connected to internet on mobile phones, tablets and PCs can help to produce cheaper products or services by reducing of general costs.
MB22	Difficulty to offer competitive prices	S22	Assisting to reduce the general costs of production in order to produce at a competitive price		
MB24	Adapting products complying with tastes and needs of foreign market	S24	Collecting analytical information, strengthening administration control, and supporting marketing	Q13	Utilising various applications connected to social media network can help our management to collect useful information from target markets in order to develop product/service based on their needs.
MB25	complying standards and quality based on international market criteria	S25	the CCU enabling an effective knowledge management that can lead to produce high quality products for niche market		
MB26	Other taste and orientation in foreign market	S26	Enabling to save up costs toward efficient niche production based on market needs		

Developing instrument for scale of Environmental Barriers:

According to the literature reviews, seven environmental barriers are matched up with seven CC possible solutions and the instruments of Q22, Q23, Q24, and Q25, will examine these solutions for the items. Table 4.10 presents the instrument of Likert Questionnaire for this scale.

Table 4.10 - Developing instrument for environmental barriers

Barrier	Problem	Proposed Solution	Possible Solution	Q. Code	Likert Questionnaire
EB27	Instability in currency exchange	S27	Instant and up-to-date currency exchange information	Q22	Utilising various applications enable the company to be needless of having physical presence in foreign market as any economic turmoil in foreign market has least effect on our business losses.
EB28	Psychic distance in business practices /Sociocultural & language	S28	Geocentric facilitation of the CCU to adapt language and normative practice	Q24	Based on the target markets, company's website can be designed in various languages, where any promotional activities for products can be deployed according to the target-market's language and relevant practice norms.
EB29	Rigorous rules and regulation in host countries	S29	Enabling firms to operate beyond hosts' jurisdictions	Q23	It can be predicted that utilising various applications connected to internet on mobile phones, tablets, and PCs enable the company to meet the least loss in foreign markets because of any change in rules and regulations.
EB30	Undesirable regulations in home country	S30	Enabling firms to operate beyond home's jurisdictions	Q25	Our management believes that Cloud computing utilisation facilitates to mitigate the lack of technical supports from government side by using useful applications in cloud computing environment.
EB31	Absence of government incentives in home country	S31	Enabling an instant process in technology development by skipping intermediate stages	Q25	Our management believes that Cloud computing utilisation facilitates to mitigate the lack of technical supports from government side by using useful applications in cloud computing environment.
EB32	Political turmoil in foreign market	S32	Enabling business activities flow on cloud beyond any political instability	Q23	It can be predicted that utilising various applications connected to internet on mobile phones, tablets, and PCs enable the company to meet the least loss in foreign markets because of any change in rules and regulations.
EB33	Bad/Worsening economic condition in foreign market	S33	Efficient capability in alleviating costs and proposing of financial facilitation for end users	Q22	Utilising various applications enable the company to be needless of having physical presence in foreign market as any economic turmoil in foreign market has least effect on our business losses.

Developing instrument for scale of Accelerated Internationalisation:

According to the literature reviews, one item for Accelerated Internationalisation will be match up with the CCU solution and the instruments of Q26, and Q27 will examine the solution for these items. Table 4.11 presents the instrument of Likert Questionnaire for this scale.

Table 4.11 - Developing instrument for Accelerated internationalisation

Barrier	Problem	Proposed Solution	Possible Solution	Q. Code	Likert Questionnaire
MB23	Existence of rigorous competition in foreign market	S23	Enabling SMEs to internationalise more quickly and effectively	Q26	Utilising various applications connected to internet on mobile phones, tablets and PCs has assisted the company to alleviate the barriers in foreign markets and speed up the trend of internationalisation.
				Q27	Our management believes that our international business could be developed and progressed more quickly by using various applications in smartphones, tablet and PCs.

4.7.1.2 Part 2: developing instrument to measure the EM-SMEs' integration with the CCU

According to the literature review and the definition of the CCU by Mell and Grance (NIST, 2011:2), this research study has developed instruments in order to measure up the magnitude level of the EM-SMEs' integration with cloud computing utilisation. Table 4.12 presents the developing instruments for the items of this scale.

Table 4.12 - Developing instrument for Accelerated internationalisation

Solution	Suggested Solution	Code	Instrument
"*A model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g. networks, servers, storage, applications and services) which can be quickly provisioned and released with minimal management effort or service.*" (Mell and Grance: NIST, 2011:2)	INTEapplication	Q32	Downloading any CC application for business purpose facilitation
		Q36	Using different CC applications for business purposes
	INTEstorage	Q34	Storing business documents on clouds
	INTShare	Q35	Sharing business documents by clouds
	INTEnetworking	Q37	Using social networking applications for business purposes
	INTEcommunication	Q38	Using cloud computing applications for VoIP
		Q39	Using cloud computing applications for business communications

4.8 Piloting Test

For assuring the quality of the research process, the piloting test is an important in the procedure of collecting data. This stage can help the researcher to evaluate the questionnaire to be adjusted before being launched the main survey. Any correction in the questioner can be possible by this stage as it enables to convert an open-ended question into a closed question by determining the range of possible answers. It has been asserted that, the basic aim of piloting examine is to correct the materials in the questionnaire for enabling the researcher to acquire an evaluation for created questions in terms of validity and reliability precision. This also enables to perform a trial diagnosis of any possible error in questionnaires survey that will also help to maximise the accuracy of response rate.

Two elements of validity and reliability and validity will be check for the quality of the research process in piloting test. The validity implicates the process of asking an expert to annotate on the competency and of the questionnaire, whereas the concern of reliability is about the consistency of responses to the questions. Initially the author tries to evaluate the validity of the questionnaire by gaining the opinion of academic expertise at Brunel University for more consistency, clarity and attractiveness (Saunders et al., 2012).

4.8.1 Reliability

Reliability is about outcome of a question in which to make ensure the repeatability of outcomes for a research study (Bryman and Bell 2011) and the degree to which data collection methods and analysis will yield consistent findings, similar observations would be made and conclusions reached by other researchers repeating the process (Saunders et al., 2009). According to Bryman and Bell (2011), reliability refers to the consistency of a measurement of the thought or concept. One of the prominent factors involved when considering whether the measures included in the questionnaires of this research are reliable is the internal reliability. In regards to internal reliability, the key issue is whether the index those create the scale or indexes are consistent and stabled. In other words, whether or not respondents' score on any one indicator tend to be related to their scores on the other indicators. Pallant (2010:97) described the latter as a degree to which the items of one scale can make up the scale and to what extent they can '*hang together*'. One way of testing internal reliability is the split-half method. The internal reliability usually is being tested by Cronbach's alfa. Mainly, this method calculates the average of all possible half coefficient of reliability. The outcome of this test varies between one and null. Where Bryman and Bell (2009) point that one indicates to a complete internal reliability and null indicates no internal reliability. Ideally, the outcome for Cronbach's alpha test needs to be measured more than 0.7 outcomes (DeVellis, 2003, cited in Pallant, 2010). In addition, for checking the internal reliability of the measures/scales which is used in this research study, a pilot survey questionnaire including four scales of informational, operational Marketing and environmental were deployed with using of random sample techniques and 42 questionnaires were received. Then the data were entered to SPSS 2.0 and Cronbach's Alpha for each scale was calculated. The values for Cronbach's alpha for all three scales are more than 0.80, suggesting very good internal consistency reliability for the scales (table-4.13 to 4.16).

The results of the Cronbach's Alpha (>0.70), employing the simple random sampling method and colleting a relatively large number of samples can suggest that the samples are normally distributed and parametric tests can be used to analyse the data. Prior to pilot survey, some pre-pilot surveys were conducted and the results were used in the design of the survey questionnaires. In these pre-pilot surveys, it was confirmed that respondents could consider success and sustainability as one variable.

In this research study, there are twenty-five inventories determined for four different subscales. Firstly, the study needs to analyse the internal reliability consistency among these items. This analysis is very important before doing any statistic data analysis especially when inventories are combined scores together. Cronbach's Alpha analysis is a common method for finding consistency among the inventories in a subscale. It can help to determine whether the items in a subscale are justifiable to interpret the scores that have been agreed or not.

Mainly Cronbach's Alpha analysis by SPSS assists researches to find out the internal consistency reliability. Table 4.13 presents the Cronbach's alpha in informational scale estimated that 0.838 it means 83.8% of the variability of the composite score by combining three items within the composite score is true score variance or internal consistent reliable variance.

Table 4.13 - SPSS results for internal reliability test for Scale of Informational Barriers

Reliability Statistics Informational Scale (Pilot test n=42)		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.838	.869	3

Table 4.14 presents the Cronbach's alpha in operational scale estimated that 0.787 it means 78.7% of the variability of the composite score by combining three items within the composite score is true score variance or internal consistent reliable variance.

Table 4.14 - SPSS results for internal reliability test for Scale of Operational Barriers

Reliability Statistics Operational Scale (Pilot test n=42)		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.787	.794	7

Table 4.15 presents the Cronbach's alpha in marketing scale estimated that 0.830 it means 83% of the variability of the composite score by combining three items within the composite score is true score variance or internal consistent reliable variance.

Table 4.15 - SPSS results for internal reliability test for Scale of Marketing Barriers

Reliability Statistics Marketing Scale (Pilot test n=42)		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.830	.834	9

Table 4.16 presents the Cronbach's alpha in Environmental scale estimated that 0.768 it means 76.8% of the variability of the composite score by combining three items within the composite score is true score variance or internal consistent reliable variance.

Table 4.16 - SPSS results for internal reliability test for Scale of Operational Barriers

Reliability Statistics Environmental Scale (Pilot test n=42)		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.768	.744	5

4.8.2 Validity

According to Bryman and Bell (2011) validity refers to the issue of whether an indicator (or set of indicators) that is devised to gauge a concept really measures that concept. Saunders et al. (2009) also defined validity as the extent to which data collection

methods accurately record and measure of what has been intended. The measures or scales, which are used in the survey questionnaires of this research, have been developed and validated by other researchers and practitioners of cloud computing appliers in different industries and also identified through the literature review. However, the questionnaires are consulted with academics and practitioner team within the research organisation for face validity and appropriateness. The results of the internal validity test (Cronbach Alpha >0.70) in the pilot survey (42 cases) were in line to validate appropriateness of the scales.

4.8.3 Bias

Bias is avoided in this research study where in research, bias occurs when "systematic error is introduced into sampling or testing by selecting or encouraging one outcome or answer over others". Bias refers to the extent to which the researcher or researched may seek to influence the data gathering process, analysis, and findings. Therefore the matters of "researcher bias's" and "participant bias's" may need to be considered in research procedures. As with all research may be issues of bias however steps taken to minimize include: Define sample frame, Use random sampling, Consider 95% confidence level with 3% margin of error, Assumption of normal distribution.

4.9 Main survey

This section as the main survey identifies the following studies for this research such as population, sample size, sampling strategy including identifying a framework for sampling and the suitability of sample size, the data collection and analysis through the Structural Equation Modelling (SEM) and the Confirmatory Factor Analysis (CFA).

4.9.1 Population

The research involves to investigate the effectiveness of the CCU for mitigation of SMEs barriers in the emerging markets, where the population of SMEs in this context needs to be identified and according to a study of World Bank Group (2015) there are between 365-445 million micro, small and medium enterprises in the emerging markets (the EM-SMEs). Among these Micro-plus the EM-SMEs, 25-30 million are formal SMEs; 55-70 million are formal micro enterprises; and 285-345 million are informal enterprises. It is noteworthy that according to the given statistics, it is not clear how many of these the

EM-SMEs are involved with international trading where the focus of this research study is based on those SMEs in the emerging markets that have already involved with international businesses.

Furthermore, the sampling frame for any probable sampling is a complete list of all the cases in the population from which the research sample will be drawn. Since the study of this research is concerned with the effectiveness of the CCU for the EM-SMEs' internationalisation mainly in Turkey and Iran as context. Therefore the sampling frame are listed all SMEs in Iran and Turkey that firstly they have international business and secondly they are using cloud computing as an advance ICTs for facilitating their internationalisation.

These two countries are good representative of emerging markets. Hence, from one side, Turkey as a member of G20 countries and as a successful emerging market can be a good representative for those prosperous emerging markets. Whereas, from other side, Iran as an emerging market that suffers from economic sanctions for many years can represent those emerging markets that political elements have tied up with priorities in their economies thus these two markets are appropriate nominees to present emerging markets status. These choices encapsulate the characteristics of many countries in emerging markets in a well-presented contrast to encompass many countries in emerging markets in a bipolar context.

These data will satisfy the requirement for having access to a precise, accurate and updated sampling framework as every member of population can have an equal chance in order to be chosen randomly in sampling method. Moreover, the results of simple random sampling could be considered as samples that represent the total population.

4.9.2 Sample size and strategy

Generalisation about population can be possible by collecting data randomly and using of any probability in sampling. The larger sample's size can lead to the lower likely errors in generalisation. Probability sampling is a compromise between the accurate data and the amount of time and money a researcher invests in collecting, checking and analysing the data. In addition, the choice of sample size within this compromise is ruled by, the

confidence that researcher needs to have in data collecting. When these collection needs to represent the characteristics of the total population. In addition, the margin of error needs to be calculated, as this requirement can estimate the level of accuracy in their sample. The types of analysis is other important issue which a researcher needs to undertake in particular categories as sometime they wish to subdivide the data as many statistical techniques have a minimum threshold of data cases for each cell, and lastly the size of the total population from which the samples will be drawn. In the most conducted researches based on business and management, researchers are content to estimate the characteristics of populations at 95% certainty within ± 3% to 5% of its true values as these figures have been used to calculate the minimum sample size that is required for this research.

Moreover, since this research study are intending to be conducted based on the structural equation modelling (SEM) by SPSS Amos software the following criteria have been considered for obtaining the minimum sampling as the following section identifies the sampling framework for this research study.

Thus based on the chosen data analysis for this study, the sample size would be an important issue for conducting SEM technique. Data analysis by SEM technique is sensitive to sample size, when small and inappropriate sample size make the use of this technique unreliable in order to develop the exploratory factor analysis. It is noteworthy that collecting large data is usually time consuming and expensive while SEM technique enables researchers to obtain appropriate and trustworthy results on basis of how large a sample is needed for a research study (Hair et al. 2013).

There are different ideas regarding obtaining the minimum sample size for a research study based on the SEM technique however, the proposition of Hair et al. (2013) for obtaining a minimum sample size are summarised based on following five important elements.

(1) Multivariate normality, the researcher always tries to provide adequate sample size to permit for the sampling error's impact in the model reaches to its minimum. They believe that "*a general accepted ratio to minimize problems with deviations from normality is 15 respondents for each parameter estimated in the model*".

(2) Estimation technique, in this procedure the maximum likelihood estimation (MLE) can provide stable and valid results even with a small sample size of 50. However, other study recommends a sample size of 200 can provide a sound basis for estimation. Furthermore other studies show that the sample size becomes large at (>400), when the model becomes more sensitive and making goodness-of-fit indicators poor fit (Tanaka, J. 1993).

(3) Model complexity, when the complexity of model leads to collecting larger sample and role of sample size is to obtain more information and better stability. When the model has more constructs which need more parameters to be estimated, in addition, constructs have less than three measured variables as this requires an adequate sample for each group to carry out Multigroup analysis. Given that by exceeding the absolute minimum size, researchers will be faced up with less variability but increasing stability in the situation.

(4) Missing data, missing data in SEM makes the testing more complicated and this causes to reduce the samples size from its original size. when researcher needs to consider a plan for an increase for sample size to balance any problem caused by missing data.

(5) Average error variance of indicators, since communality represent the average amount of variance among the measured variables by a measurement model, the community of an item can be measured directly as the square of the standandardised construct loadings. As the studies show that lager sample sizes are required as communities become smaller and models in which contain multiple constructs with communities <0.5 (standardised loading estimate <0.7) also need larger sample size for their stability and convergence. It is noteworthy that the problem will be exaggerated when the model have constructs with one or two items (Hair et al, 2013)

4.9.2.1 Identifying the sampling frame

This study intends to collect samples from wide array of business activities of SMEs in Iran and Tukey and the survey will be inquired main managers of these firms by the

provided questionnaires. The samples will represent array of typical the EM-SMEs from any industries, which use cloud computing in their internationalisation. Regardless type of the EM-SMEs' activities in different industries and the level of stages after their establishment in these countries, the core purpose of sampling of this research study is mainly focused on the use of cloud computing that can be applied for these firms in their international businesses (internationalisation). According to the definition of internationalisation given in chapter two "*the outward growth in a firm's international operations*" (Cavusgil and Nevin, 1981; Johanson and Vahlne, 1977; Johanson and Wiedersheim-Paul, 1975; Luostarinen, 1979; Sylvie 1999); this research study intends to collect samples from any SMEs from Iranian and Turkish context, which have foreign-business relations for their business growth and development. The sampling of this research study are mainly targeted those firms which have outward activities or international businesses, regardless of the type of activities that they have, the context of industries they are active, the level of stage they are after their establishment as well as their skills, capital and resources that they have for their businesses. Whereas the importance of applying CC in their trend of internationalisation is the core focus of this research study. Mainly entrepreneurs and top managers who are considered as the core decision makers in the firms are asked to answer the questions of the survey of this research study. Moreover, based on the statistics of two market-contexts, the research study tries to find out the effectiveness of the CCU for the EM-SMEs accelerated internationalisation; and given that Welch and Luostarinen (1988:36) define internationalisation as "*the process of increasing involvement in international operations*" (Mathews and Zander 2007). Thus the finding will lead to collect information from SMEs that are able to accelerate their involvement in international operations based on using of cloud computing. This research study intends to collect data from top managers of SMEs in two countries of Iran and Turkey Thus, based on the selected contexts of this research study (Iran and Turkey) for collecting data the following information would be appropriate for the basic knowledge of these two markets.

Turkey

According to Turkish statistical institute (2013) in industry and service sectors, 2,591,082 enterprises were active for the year 2011. The proportion of the Small and

Medium Sized Enterprises (SMEs) which had 1-249 employees was 62.6% for exports in 2012. The rate of micro enterprises with 1-9 employees was 20.6%, small enterprises with 10-49 employees was 24.3%, medium-sized enterprises with 50-249 employees was 17.7% and large enterprises with 250+ was 37.2% in exports.

Moreover, according to foreign trade by country groups, the proportion of exports to the EU and Asian countries made by the SMEs was 43.9% and 42.2% for 2012. The rate of the EU was 51.2% and Asian Countries was 37.9% in imports. In addition, in this country SMEs performed 92.9% of manufactured products exports. As In 2013, 92% of enterprises used computer, 53.8% of enterprises has their own website and 90.6% of enterprises used broadband connection to access the Internet, while DSL was the most widely-used broadband connection type with 86.4% among all enterprises. At the same period, these ratios were 91.8%, 52.9%, 90.4% and 86.4% in SMEs respectively. In addition, the proportion of enterprises that used the Internet for interaction with public authorities was 73.7 per cent in 2012. This ratio was 73.2 per cent in SMEs. 10.1 per cent of enterprises received orders for products or services via web pages or Electronic Data Interchange (EDI) in 2012. This percentage was 9.7 in SMEs (Turkish statistical institute, 2013).

Iran

Regrettably, the statistic related to Iran is scattered and unreliable. However, it can be reckoned around 345,000 SMEs have been officially registered. Where 96.1% of this amount is classified as micro-enterprises with 1-9 employees, 3.3% of this amount is classified as small enterprises with 10-49 employees, 0.3% of mentioned amount is classified as medium sized enterprises with 55-99 employees and 0.4% of mentioned amount is classified as larger 100 employees. Moreover, the newest study unfolds that SMEs in Iran have provided about 1.3 million jobs out of 15.6 million employed labour-forces. Moreover, this study shows that in Iranian market 98.4% of all business are considered as micro businesses with 1-9 employees and just 1.42% of small businesses with 10-49 employees are operating in this market.

These statistics show a heterogeneous pattern for this context where a large number of micro enterprises are active in contrast a tiny marginal of SMEs operate in this market as it has been noted that the absence of a logical number of medium-sized enterprises could

negatively affect the efficiency of this market (Molanezhad, 2010). In addition, according to the local definition, the SMEs have defined and categorised differently in these two countries. As this study intends to consider these definitions based on the local definitions. Table 4.17 shows the comparison of SMEs' classifications in Turkey and Iran.

Table 4.17 - The comparison of SMEs' classifications in Turkey and Iran

Country	Enterprise Size	Number of employees
Iran	Micro	<10
	Small	10-49
	Medium	50-99
Turkey	Micro	<10
	Small	10-49
	Medium	50-250

4.9.2.2 Suitable Sample Size

According to Hair et al. (2013), "*always maximize your sample size*" and "*sample size of 300 are required*" are no longer appropriate. Generally, it is true that larger samples are more likely replicable and lead to more stability; however, the sample size decisions must be made according to following factors that are indicated in the following table of 4.18 in which suggests that for minimum sample size according to its model complexity and its basic measurement model characteristics.

Table 4.18 – Suggestion for minimum sample size based on the model complexity and basic model measurement characteristics (Hair et al., 2013)

Number of Constructs	Minimum Sample size	Communalities
≤ 5	100	Each constructs with more than three items (observed variables) and with high communalities (0.6 or higher)
≤ 7	150	With modest communalities (0.5) and no under identified constructs.
7	300	With lower communities (< 0.45) and/or with multiple under identified (< 3) constructs
≥ 7	500	with some lower communalities, and/or having (< 3) items

Hence, the model of this research has six constructs (EM-SMEs+CCU, Informational, Operational, Marketing, Environmental and Accelerated internationalisation) and each construct has more than three items for its measurement therefore according to Hair et al. (2013) the minimum sample size for obtaining appropriate results based on reliability and validity would be 150 samples. Moreover, in this study, the researcher intends to set communalities for each item more than 0.7 where all the items in all constructs with loading factors below 0.7 will be deleted. It is noteworthy that more than the mentioned minimum thresholds, for the model of this research study, a number of 227 valid and clean samples have been collected for SEM data analysis.

Furthermore, Saunders et al. (2012) define that a sample collection from any part of a population can represent the population, regardless whether this part of sample represents the population or not. Moreover, they define population as the complete set of instances that can be taken as a sample. Generally, researchers by taking of a portion of a population can peruse and observe the features of a smaller group in order to generalise their finding to the large population (Burns, 2000).

In addition, the purpose of probability sampling can be divided into three categories. Firstly, identifying an appropriate sampling plate according to the research-study questions or objective, secondly deciding on a suitable sample size and thirdly, selecting the most appropriate sampling techniques and selecting the samples.

4.9.3 Data collection, sampling and data analysis

It is essential to identify a framework for data collection; Creswell (2003) argues that four types of data collection can be defined for a research study such as interviews, self-administered questionnaire, structured observation and financial information. This research study uses a self-administered questionnaire for collecting data as the advantages of this type of collecting data can be counted as efficiency and lower costs in which the researcher does not need to be at the place of collecting data. However, inappropriateness in questionnaire wording might lead to respondents misunderstanding as the consequences can reduce the quality of a research study, which is based on self-administered questionnaire as this fact can be condensed as the weakness of this type of research study

(Saunbers et al., 2009). Therefore, in the case in which respondents might find difficulties in understanding the questions and it might lead to a possible misinterpretation of the questions. In order to minimise this possibility, the researcher needs to consider enough attention through pre-examination of the questionnaire in order to finalise it before launching for the data collection process.

4.9.3.1 Data collection and sampling

The research population are targeted on the SMEs in the Emerging Markets (EM-SEMS) in two countries of Iran and Turkey. As it has been mentioned earlier these two countries have been nominated for collecting data. The questionnaire was randomly distributed among 950 SMEs in two countries of Iran and Turkey from 15th Dec. 2015 to 10th March 2016. Given that, simple random sampling requires that each member of the population have an equal chance to be selected. This study has been deployed a self-administered data collection and the questionnaires were translated into three languages of English, Farsi and Turkish and were accessed by the SurveyMonkey Website.

The links of questionnaires were disseminated randomly for sampling through different methods such as direct emails to SMEs in both contexts of Iran and Turkey by using of approved official websites lists and directories. As MacNealy (1999:155) stated that "*The selection of the sample from the population list is made by randomly selecting a beginning and choosing every n*th *name.*" The links of questionnaires were sent randomly to SMEs in turkey by use of Turkish-Manufacturers.com who is "*Turkish SME's Trade Development Center*" is a sub-construction of KOBI Inc and certified by Republic of Turkey Ministry of Economy as the website possesses more than 60.000 Turkish manufacturers and exporters are listed for easy search.

In addition, the link of questionnaire were sent to the Iranian SMEs by using of official website of Trade Promotion Organisation of Iran affiliated to Iranian Ministry of Commerce, Tehran Chamber of commerce and the profile list of superior Iranian exporters.
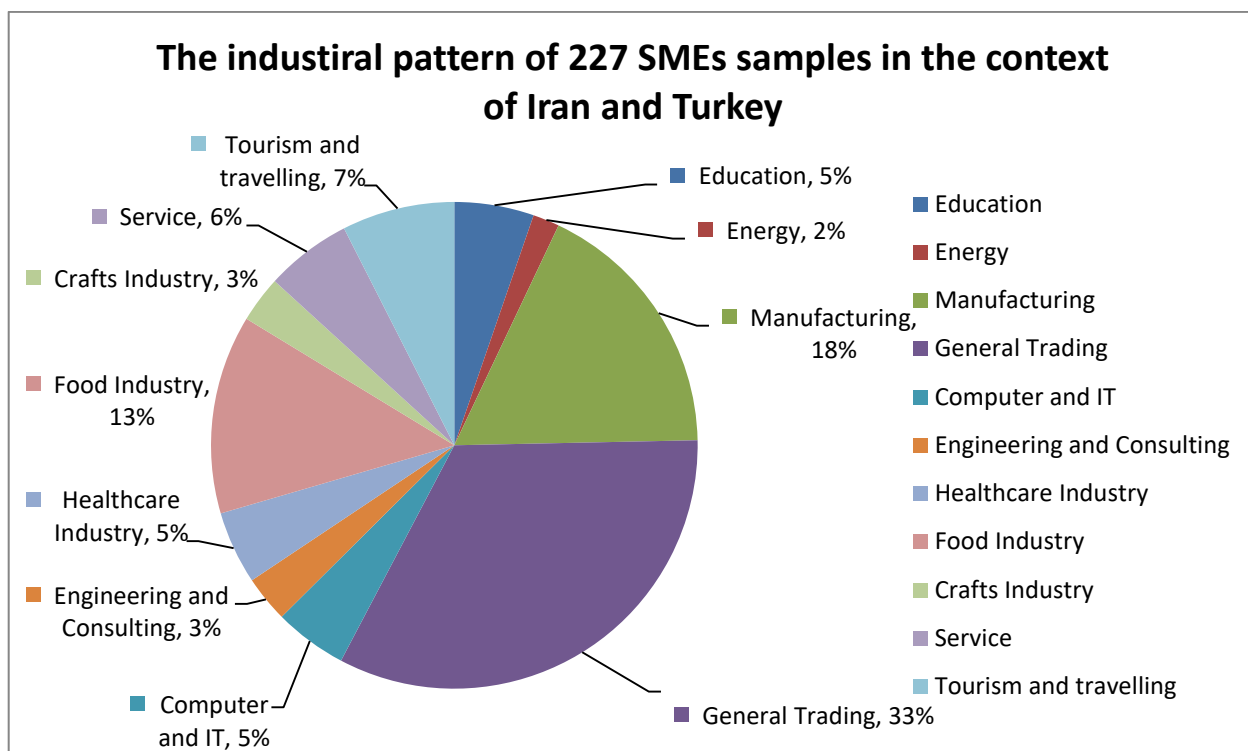
Figure 4.3-The pattern of research samples of SMEs industrial activities in Iran & Turkey contexts

Moreover, in some cases and in an infrequent occasion, this research study has used snowball-sampling strategy. *"Snowball sampling also includes relying on previously identified group members to identify others who may share the same characteristics as the group already in place"* (Henry, 1990:21). In addition, this research study has identified other SMEs clusters in social media such as Facebook, twitter and Telegram who are active in international business in two markets. Thus, in some cases, the researcher has targeted randomly some firms form any industry in the contexts and asked the respondents to pass the questionnaire to the other colleague-firms who have international business activities. Moreover, the links of questionnaire have been sent and were targeted those managers of SMEs in the contexts of the research that were active internationally and presented in official report lists of the chamber of commerce and department of commerce in these two countries. In response, total 243 questionnaires were collected; consisting 114 participants from Iran and 129 participants from Turkey. Moreover, Sixteen incomplete questionnaires were deleted and 227 valid questionnaires were used for data analysis of this research study. The details of descriptive analysis will be scrutinised in chapter five and gathered in appendix VIII.

4.9.3.2 Data analysis by Structural Equation Modelling (SEM)

Structural Equation modelling (SEM) is a technical method for estimation series of regression equations in a research study (Janssens et al, 2008). Many scholars identified SEM as a mixture of factor analysis, analysis of regression and/or path analysis (Janssens et al. 2008; Hox and Bechger 1998). The SEM presents a generic and appropriate framework for data analysing in use of statistics. Moreover, the SEM is stated as a multivariate process which is included as factor analysis, regression analysing, interpretation for discriminant and legal correlation (Hox and Bechger 1998). In addition, SEM can be considered as mixing of factor analysis as well as series of regression tests for the models in research subjects (Abramson et al. 2005). Application of factor analysis is to diminish of series of variables to lesser basic factor sets in order to enable the researches to find out those variables in which can be loaded with main factors. Similar factor analysis, the analysis of multiple regressions enables the researchers to find out and specify among dependent and independent variables exist a logical relationship (Tabachnick and Fidell 2001). Given that, the suitability of 277 samples in this research study has been justified earlier in 4.9.2.2.

4.9.3.3 Data analysis by the Confirmatory Factor Analysis (CFA)

Factor analysis is a statistical technique for discovering a small set of unobserved variable. "*This statistical analysis also is named latent factors, which enables a researcher to explain for covariance among larger set of observed variables as set of manifest variables*" (Albright and Park, 2009). Confirmatory factor analysis is a useful statistical method in data analysis for investigating the nature of non-observed variables as well as enables the researcher to find out the relations amongst non-observed variables, such as rationality, intuitiveness, the impact of decision immensity, effectiveness of decision process. It has been argued that CFA is widely used as an analytical device by many researchers to develop research instruments, refining the instruments, examining the validity of construct, determining method effects and assessing factor invariance across time horizons and contexts (Brown 2006). Moreover, this method can be used for assessing the reliability and validity of instrument scales (Carmines and Zeller 1979).

4.10 Ethical consideration

Collis and Hussey (2014) state based on a code of conducts, ethical consideration refers to principles and moral values. In addition, the research ethic refers to a path in which a researcher should conduct and report the results. In addition, they added that researchers should avoid any harm to participants and maintain the right of confidentiality even for voluntary participants needs to be considered for an ethical research. This research study intends to consider all ethical requirements for the participants throughout the procedures of the research. Therefore, all the participants will be notified the aim of the research study, and why they are being surveyed, mentioning that their contributions are voluntary and they are able to withdraw at any time of stage in the survey procedure.

Moreover, it is important the researcher convince the participants of their confidentiality and anonymity. Moreover, this research study will follow the code of conducts and ethical issues, which are leaded by the Brunel University, based on the guidelines of the committee both the associated supervisor and the researcher are needed to confirm and sign the ethical form for the research and submit to the academic program office at the university. Consequently, data collection can be possible after the final approval of the committee (Appendix I).

4.11 Summary

To sum up, this chapter has proposed the methodology for the research study. The study is conducted based on the positivism philosophy where the interrelationship between fact and observable occurrence and consequently following a scientific methods for the research to study a social phenomenon. Moreover, a quantitative method is assigned for conducting the research study where, in a quantitative research study, the author tries to measure up the cause and effect of variables in an array rather than to analyse the process of a trend. Furthermore, the study provides a comprehensive justification for its chosen research strategy as it is suggested that experimental studies and Likert survey along with constructing of structured questionnaires are appropriate methods for this quantitative research strategy. An online survey through internet would be an appropriate method due to convenience of publication among the targeted population and assigning short time period to collect the responses. In addition, the samples size for the study is 227 among

population of SMEs from the context of Iran and Turkey as representative of the emerging markets. The structural equation modelling (SEM) will be used for this research study in order to test statistically the hypotheses and the relations among observed and latent variables. Estimating, and testing the linear relations and path coefficient between the variables.

Chapter Five
Data Analysis

5.1 Introduction

In order to demonstrate the potentiality of merging theories and practice, this chapter presents the procedures of describing the data gathering, data analysis and findings for its research study. According to the aim of this research study which has been focused on investigation of the CCU contribution for barriers mitigation of the EM-SMEs, and also the theoretical literature reviews in chapter 2, and proposed conceptual framework in chapter 3, this chapter intends to use Analysis Moment of Structure (AMOS) Ver. 21.0 for implementing SEM on the collected data. AMOS is statistical software that is added to SPSS module. This software is specially used for SEM, path analysis, and confirmatory factor analysis as is known for analysis of covariance or causal modelling software. Moreover, AMOS is a visual program for SEM and this software enable to draw the proposed model graphically through using simple drawing tools also this software quickly performs the computations for SEM and displays the results as its output.

This chapter begins by demonstrating the units of analysis and the calculation of the response rate. Then, the screening of the data in preparation of further quantitative analyses will be addressed by Structural Equitation modelling (SEM) as SEM technique will be applied in this research study in order to accredit the proposed hypotheses as well as confirming the proposed conceptual framework.

Furthermore, in order to accomplish the SEM technique, this study needs to perform variety of tests. These tests comprises of Cronbach alpha for measuring the internal constancy. This is a measure of scale reliability to evaluate how items in a group are closely related to a set. KMO and Bartlett's Test which play an important role for accepting the sample adequacy, as this test is a test, which is conducted statistically for the overall significance of all correlations within a correlation matrix. Mainly KMO is a test to assess the appropriateness of using factor analysis on data, and Bartlett's Test checks whether if there is a certain redundancy between the variables that could be summarise with a few number of factors.

In the following, the confirmatory factor analysis (CFA) and validity test for the constructs in the Structural Model will be conducted. Factor Analysis is a commonly used variable reduction technique as this multivariate statistical technique is used for three primary reasons for reducing the number of variables, establishing underlying dimensions between measured variables and lastly enables to construct and provide validity evidence. In addition, by validating the construct the study will be able to confirm the hypothesis and its conceptual model.

5.2 Units of analysis

Two countries of Turkey and Iran have been nominated for sampling and collecting data where the questionnaire was randomly distributed among 950 SMEs in these two countries from 15th Dec. 2015 to 10th March 2016. The link of questionnaire was disseminated in different ways to target those SMEs which were active internationally. In total 243 questionnaires were collected, consisting 114 participants from Iran and 129 participants from Turkey within the aforementioned period of time and after screening due to incompleteness number of 16 questionnaires were deleted. Therefore, 227 valid and

clean questionnaires were used for data analysis of this research study. Furthermore, due to online surveying a completion rate refers to the number of surveys filled out completely and submitted divided by the number of surveys started by respondents as this number represents 23.89% of response rate for this research study. Table 5.1 presents the status of the data collection for this research study.

Table 5.1 - Responses rate

Status	Number	Rate%
Total disseminated questionnaire by sent links and Emails	950	100.00%
The number of respondents who entered the questionnaire	243	25.57%
The number of deleted questionnaire	16	6.58%
Participant rate/ the number of completed questionnaire	227	23.89%

Characteristics of the sample

Size of SMEs

The number of employees in sub categories of Micro, Small and Medium sized enterprises is shown in table 5.2.

Table 5.2 - The cumulative percentage of SMEs for the study

Number or employees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Micro (1-9)	18	7.9	7.9	7.9
	Small (10-49)	160	70.5	70.5	78.4
	Medium (50-250)	49	21.6	21.6	100.0
	Total	227	100.0	100.0	

Type of Industry

The type of industries in which SMEs are operated internationally is shown in table 5.3. This table shows that how the data collection of this research is randomised among different industries as working with randomised samples is the way quantitative studies would usually work with moreover a quantitative research strives for random sampling for its research study.

Table 5.3 - Randomised data collection among different industries

In which industry does your company operate internationally?

	Industry	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Education	12	5.3	5.3	5.3
	Energy	4	1.8	1.8	7.0
	Manufacturing	40	17.6	17.6	24.7
	General Trading	75	33.0	33.0	57.7
	Computer and IT	11	4.8	4.8	62.6
	Engineering and Consulting	7	3.1	3.1	65.6
	Healthcare Industry	11	4.8	4.8	70.5
	Food Industry	30	13.2	13.2	83.7
	Crafts Industry	7	3.1	3.1	86.8
	Service	13	5.7	5.7	92.5
	Tourism and travelling	17	7.5	7.5	100.0
	Total	227	100.0	100.0	

5.3 Descriptive statistics

According to the theoretical framework of this research study, the descriptive statistics of this research study has been sought in relation with the theoretical framework as this section represents the survey's constructs, which has been developed by descriptive statistics. Thus according to the theoretical framework, the constructs of this survey are composed of informational barriers, operational barriers, marketing barriers, environmental barriers, accelerated internationalisation and the cloud computing utilisation by the EM-SMEs.

It is noteworthy that this the descriptive statistic for this research has composed from two parts: part One Likert 5 scale questionnaire for constructs of informational, operational, marketing, environmental barriers, and accelerated internationalisation. Part Two is designed for the EM-SMEs the CCU, as this assessment is designed for examining the integration of the EM-SMEs with cloud computing in order to calculate the magnitude level of the CCU for each respondent. In other words, the obtaining data by this assessment will show to what extend the EM-SMEs by using different applications are integrated with the CCU for their internationalisation.

All the items in this survey were evaluated based on scale of five point Likert with format of Strong Disagree=1, Agree=2, Neutral=3, Agree=4 and Strongly Agree=5. In addition, according to the obtained data from the Likert survey, the mean or average numbers for all five constructs in this survey are as follow: Informational is between 3.90 and 3.99; Operational is between 3.83 and 3.91; Marketing is between 3.81 and 4.00; Environmental is between 3.70 and 3.91 and Accelerated Internationalisation mean is 4.03.

Based on five scale Likert style which is used to allow the individual to express how much they agree or disagree with a particular item in the construct. The obtained data show that all constructs items have a mean or average greater than the neutral point (3) which this issue points to that fact that the majority of the respondents are agree with the items. Later in this section, the items of each construct will be examined and analysed. Furthermore, the constructs of this research study with their items will be analysed by the calculation of their means/averages and Standard Deviation which a quantifying expression in order to express how much the members of a group differ from the mean value for the group.

5.3.1 Questionnaire

The questionnaire of the survey consists of two parts. The first part of the questionnaire deals with the five scales Likert questions and the second part of the questionnaire deals with the level of magnitude integration of the EM-SMEs with different applications in cloud.

5.3.1 Part 1: Likert Questionnaire

The first part of questionnaire deals with the Likert questionnaire. The researcher designed this section for obtaining data for five constructs of informational barriers, operational barriers, marketing barriers, environmental barriers and accelerated internationalisation.

5.3.1.1 Informational Barriers Constructs

This construct measures the impact of the CCU on informational barriers of the EM-SMEs internationalisation. According to the literature reviews and the theoretical framework of this research study on informational barriers and the CCU capabilities, the

following instruments in table 5.4 are designed for the measurement of Informational Barriers Construct. According to the proposed solutions of the CCU for informational barriers of this research study in aforementioned table -4.7, the construct comprises two items in order to measure the impact of the CCU on informational Barriers. The participants were asked to rate to what extent the CCU impacts on informational barriers of the EM-SMEs in internationalisation. The 5-point Likert scale range is used for this instrument to measure up the extensity of agreement based on Strong Disagree=1, Agree=2, Neutral=3, Agree=4 and Strongly Agree=5.

Table 5.4 - Informational Construct

Constructs	Item Code	Item measurements	N	Mean	Std. Deviation
Informational Barriers	Q3INFO	Our Company finds effective information for trading opportunities on home/foreign official websites.	227	3.91	.705
	Q4INFO	Our Company identify customer information by using of search engines in home/foreign official websites.	227	3.88	.764

5.3.1.2 Operational barriers Construct

This construct measures the impact of the CCU on operational barriers of the EM-SMEs internationalisation. According to the literature reviews and the theoretical framework of this research study on operational barriers and the CCU capabilities, the following instruments in table 5.5 are designed for the measurement of Operational Barriers Construct.

According to the proposed solutions of the CCU for operational barriers of this research study in aforementioned table -4.8, the construct comprises six items in order to measure the impact of the CCU on operational barriers. The participants were asked to rate to what extent of the CCU impacts on operational barriers of the EM-SMEs in internationalisation. The 5-point Likert scale range is used for this instrument to measure up the extensity of agreement based on Strong Disagree=1, Agree=2, Neutral=3, Agree=4 and Strongly Agree=5.

Table 5.5 - Operational Construct

Constructs	Item Code	Item measurements	N	Mean	Std. Deviation
Operational Barriers	Q6OPER	Utilising various applications connected to internet on mobile phones, tablets and PCs can save up daily activities of the management.	227	3.83	.757
	Q7OPER	Utilising various applications connected to internet on mobile phones, tablets and PCs can help our management to be more focused on their business rather than IT.	227	3.90	.731
	Q8OPER	Utilising various applications connected to internet on mobile phones, tablets and PCs can help our management to reduce current costs and allocate more finance on its core business.	227	4.00	.779
	Q9OPER	Utilising various applications can help our management to use informative and official websites in target markets and get familiar with rules and regulations of document procedures.	227	3.70	.744
	Q10OPER	Utilising various applications have facilitated communication with customers and representatives in foreign markets and enable firm to monitor their requirements and activities.	227	3.82	.757
	Q11OPER	Using applications of digital banking on mobile phones, tablets and PCs enable our company to manage relatively easy financial transactions in both home and target markets.	227	3.81	.784

5.3.1.3 Marketing Barriers Construct

This construct measures the impact of the CCU on marketing barriers of the EM-SMEs internationalisation. According to the literature reviews and the theoretical framework of this research study on marketing barriers and the CCU capabilities, the following instruments in table 5.6 are designed for the measurement of Marketing Barriers

Construct. According to the proposed solutions of CCU for the marketing barriers of this research study, in the aforementioned table-4.9, the construct comprises eight items in order to measure the impact of the CCU on marketing barriers. The participants were asked to rate to what extent the CCU impact on marketing barriers of the EM-SMEs in internationalisation. The 5-point Likert scale range is used for this instrument to measure up the extensity of agreement based on Strong Disagree=1, Agree=2, Neutral=3, Agree=4 and Strongly Agree=5.

Table 5.6 - Marketing Construct

Constructs	Item Code	Item measurements	N	Mean	Std. Deviation
Marketing Barriers	Q13MARK	Utilising various applications connected to social media network can help our management to collect useful information from target markets in order to develop product/service based on their needs.	227	3.84	.847
	Q14MARK	Utilising various applications connected to internet such as email, networking, storing, data sharing, audio-visual communications can facilitate the company after-sales services duties.	227	3.81	.869
	Q15MARK	Utilising various applications connected to internet on mobile phones, tablets and PCs can help to produce cheaper products or services by reducing of general costs.	227	4.03	.703
	Q16MARK	Utilising powerful networking and convenient communication with applications on mobile phones, tablets, and PCs cause our company effectively manages distribution channels in target market.	227	3.89	.726
	Q17MARK	Utilising various applications enable the company consistently connects with its representatives in foreign markets and this leads to foresee any deficits in the markets.	227	3.86	.772

	Q18MARK	Utilising various applications connected to internet on mobile phones, tablets, and PCs assist the company and our agents to gain proper information for warehousing in target markets.	227	3.97	.710
	Q19MARK	Due to accessing clear information such as, weather condition, road and travel safety, environment protection, and traffic awareness, our company experiences lesser insurance and transportation costs.	227	3.86	.824
	Q20MARK	Company is able to set out efficiently some promotional activities in foreign market through social networking applications with targeting right customers.	227	3.93	.862

5.3.1.4 Environmental Barriers Construct

This construct measures the impact of the CCU on Environmental barriers of the EM-SMEs internationalisation. According to the literature reviews and the theoretical framework of this research study on environmental barriers and the CCU capabilities, the following instruments in table 5.7 are designed for the measurement of Environmental Barriers Construct. According to the proposed solutions of the CCU for environmental barriers of this research study in aforementioned table -4.10, the construct comprises four items in order to measure the impact of the CCU on marketing barriers.

The participants were asked to rate to what extent the CCU impact on marketing barriers of the EM-SMEs in internationalisation. The 5-point Likert scale range is used for this instrument to measure up the extensity of agreement based on Strong Disagree=1, Agree=2, Neutral=3, Agree=4 and Strongly Agree=5.

Table 5.7 - Environment Construct

Constructs	Item Codes	Item measurements	N	Mean	Std. Deviation
Environmental Barriers	Q22EN	Utilising various applications enable the company to be needless of having physical presence in foreign market as any economic turmoil in foreign market has least effect on our business losses.	227	3.90	.841
	Q23EN	It can be predicted that utilising various applications connected to internet on mobile phones, tablets, and PCs enable the company to meet the least loss in foreign markets because of any change in rules and regulations.	227	3.70	.753
	Q24EN	Based on the target markets, company's website can be designed in various languages, where any promotional activities for products can be deployed according to the target-market's language and relevant practice norms.	227	3.89	.842
	Q25EN	Our management believes that Cloud computing utilisation facilitates to mitigate the lack of technical supports from government side by using useful applications in cloud computing environment.	227	3.91	.720

5.3.1.5 Accelerated internationalisation Construct

This construct measures the impact of the CCU on accelerated internationalisation of the EM-SMEs. According to the literature reviews and the theoretical framework of this research study on accelerated internationalisation and the CCU capabilities, the following instruments in table-5.8 are designed for the measurement of Accelerated Internationalisation Construct.

According to the proposed solutions by the CCU in this research study, in the aforementioned table -4.11, the construct comprises two items in order to measure the impact of the CCU for an accelerated internationalisation experiences. The participants were asked to rate to what extent the CCU impact on their trend of international business in

terms of speed and acceleration. The 5-point Likert scale range is used for this instrument to measure up the extensity of agreement based on Strong Disagree=1, Agree=2, Neutral=3, Agree=4 and Strongly Agree=5.

Table 5.8 - Accelerated Internationalisation Construct

Constructs	Item Code	Item measurements	N	Mean	Std. Deviation
Accelerated Internationalisation	Q26AI	Utilising various applications connected to internet on mobile phones, tablets and PCs has assisted the company to alleviate the barriers in foreign markets and speed up the trend of internationalisation.	227	4.07	.684
	Q27AI	Our managements believe that our international business can be more quickly developed and progressed by using of various applications in smartphones, tablet and PCs.	227	4.03	.678

5.3.2 Part 2: Eliciting the EM-SMEs integration with the CCU

In the second part the questionnaire (Questions from 28 to 40), the survey elicits participants the magnitude level of the EM-SMEs integration with cloud computing applications for using in their internationalisation business. Based the theoretical explanation in chapter 2 an3 this part has been designed with Close-Ended Questions in order to calculate the EM-SMEs integration with the CCU. The following section provides more explanation for this part of questionnaire.

5.3.2.1 The EMSMES and the CCU Construct

The scale was developed according literature review and theoretical framework of this research study and the definition of the CCU by Mell and Grance (2011), the scale comprises different items such as application, storage, share, networking, and communication (NIST, 2011:2) in order to elicit participants their frequent use of CC. This scale identifies the level of the EM-SMEs integration with the CCU. Later in this research study, the relation and the strength of this scale among other aforementioned scales will be assessed. The questions of Q32, Q34, Q35, Q36, Q37, Q38, and Q39 in the survey elicit the degree of the EM-SMEs integration with CC. The magnitude of the CCU

by the EM-SMEs can be considered as a parameter to evaluate its impact on other scales in this research study.

This scale designs to measure up the level of firm's integration with CC as the following questions in different sections of Part 2 in the questionnaire elicit the magnitude level of utilisation of CC by a firm. In other words, participants are asked to enumerate the applications that they use to facilitate their international activities. The maximum level of firm's CC integration is shown in table 5.9 by the number of application usage.

Table 5.9 - The instrument for obtaining the integration of the CCU by the EM-SMEs

Item	Description of Instrument	The max number of integration of the CCU that can be obtained
Q32	Downloading any CC application for business purpose facilitation	1
Q34	Storing business documents on clouds	6
Q35	Sharing business documents by clouds	1
Q36	Using different CC applications for business purposes	14
Q37	Using social networking applications for business purposes	8
Q38	Using cloud computing applications for VoIP	1
Q39	Using cloud computing applications for business communications	10

Table 5.10 illustrate the descriptive statistic of the EM-SMEs' integration with the CCU. The construct comprises five items of INTEapplication, INTEstorage, INTShare, INTEnetworking, and INTEcommunication.

INTEapplication refers to a degree of application usage that could be use by the EM-SMEs; INTEstorage refers to a degree to which the EM-SMEs use different applications in order to store their documents.

INTShare refers to a degree in which the EM-SMEs use different applications in order to share their data.

INTEnetworking refers to a degree in which the EM-SMEs use different applications in order to stablish networking between stakeholders.

INTEcommunication refers to a degree in which the EM-SMEs use different applications in order to communicate with stakeholders.

Table 5.10 - Descriptive statistics of the CCU integration

Descriptive Statistics of the EM-SMEs and the CCU								
Construct items	Item Code	Instrument	N	Min	Max	Sum	Mean	Std. Deviation
INTEapplication	Q32	Downloading any CC application for business purpose facilitation	227	2	15	1497	6.59	3.289
	Q36	Using different CC applications for business purposes						
INTEstorage	Q34	Storing business documents on clouds	227	1	6	547	2.41	1.501
INTShare	Q35	Sharing business documents by clouds	227	1	2	407	1.79	.406
INTEnetworking	Q37	Using social networking applications for business purposes	227	1	8	714	3.15	1.951
INTEcommunication	Q38	Using cloud computing applications for VoIP	227	1	10	828	3.65	2.097
	Q39	Using cloud computing applications for business communications						

5.3.3 Reliability Assessment

Reliability is the degree to which an assessment tool produces stable and consistent results. Reliability of an assessment refers to the accuracy and precision of a measurement in which that measurement maintains its reproducibility. Bryman and Bell (2007) defines reliability assessment as the consistency of a motion measurement. There are three principle factors validate which assign the reliability of a measurement. These factors are internal reliability, stability, and validation for inter-observer consistency.

Validation for stability factor can be considered as a measurement to assess whether a measure over time is stable. Internal reliability assesses one construct internally to

determine whether the findings of items in one construct are consistent in their relations. Lastly, Inter-observer constancy implies to an assessment in which rates to different observers to give consistent estimates of a same phenomenon. Mostly this happens when researcher uses open-ended questions and responders have different judgment about the phenomenon as this may lead to inconsistency. This research study adapts internal reliability for its further validation and Cronbach's alpha test is the best way to examine internal reliability. As a rule of thumb, Hinton et al. (2004) emphasised that any outcome from Cronbach Alfa assessment evaluates as follow: Any figure of $\leq$ 0.90 is considered as excellent reliability, any figure between 0.70-0.90 is considered as high reliability, any figure between 0.50-0.70 is considered as moderate reliability and any figure of $\leq$ 0.50 is considered as low reliability.

Table 5.11 - Reliability Assessment by Cronbach's Alfa

Construct	Code	Items	Cronbach's Alfa	Reliability outcome
Informational Barriers	IB	2	0.740	High
Operational Barriers	OB	6	0.643	Moderate
Marketing Barriers	MB	8	0.774	High
Environmental Barriers	EB	4	0.693	Moderate
CCU Integration	CCU	5	0.792	High
Accelerated Internationalisation	AI	2	0.717	High

Table 5.11 shows the results of Cronbach's Alfa test for the internal reliability of each construct for this research study. According to Cronbach's alfa reliability assessment, the results highlight that the internal constancy of IB, MB, AI and the CCU constructs have high reliability and also, the internal consistency of OB and EB constructs have moderate reliability.

5.3.4 KMO and Bartlett's Test

The Confirmatory Factor Analysis (CFA) needs to be tested for further assessment in this research study. This assessment is important to examine all of the solution items (which were extracted from literature review and theoretical framework and listed in the aforementioned tables of 5.4, 5.5, 5.6, 5.7, 5.8 and 5.9) by KMO and Bartlett's Test to find out whether they are suitable for the CFA (Hinton et al. 2004). Further to the explanations which have been provided in the introduction of this chapter Hair et al. (2010) state that KMO examines the variables in a sample that adequately are correlated with each other and Bartlett's Test sphericity confirms the elation with the variables. In addition, the rule of thumb for KMO figure needs to be exceeded above the minimum value of 0.60 and the outcome for Bartlett's test needs to be $p \leq 0.05$. The table 5.12 shows that the results for KMO and Bartlett's Test are respectively 0.911 with p-value less than 0.05. As these results, exceed the minimum requirements for these tests. Consequently, results show reliable values to determine for these tests as this approve the rightness of data set for proceeding to CFA for this research study.

54. Table 5.12 - KMO and Bartlett's Test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.911
Bartlett's Test of Sphericity	Approx. Chi-Square	3591.035
	df	351
	Sig.	.000

5.4 Structural Equation Modelling (SEM)

Giving that as an explanatory data analysis, which is based on comparison, investigation and process and mostly is considered as gathering these evidence for confirmation, SEM technique tries to be proceeded by Confirmatory Data Analysis which is comparable to a court trial and also considered as a process of evaluating evidence. Therefore, this research study benefits from both explanatory and confirmatory data analysis for its argument (Tukey; 1977).

The SEM is known as an array of statistical methods that allow complex relationship between one or more IVs and one or more DVs. The SEM is a generic technique for statistical modelling, which is widely applied in the behavioural sciences. This technique can be seen as a composition of factor analysis and regression/path analysis. This study carries out SEM for its data analysis and the technique that will be used is SPSS Amos version 21.0 in order to validate the hypothesis and the performance of the proposed conceptual framework. The SEM comprises of two different model types, which are known as confirmatory factor analysis (CFA), or the measurement model and the structural model (Hair et al. 2006).

The CFA confirms the relationship among items of measurement and their factors according to the proposed theory when, the structural model approves the relationship among the factors as hypothesised in a research study. Later in this chapter, this study conducts the results of the CFA and the structural model for confirmation of its proposed hypotheses and theoretical model.

5.4.1 Confirmatory Factor Analysis (CFA)

The CFA is a multivariate statistical procedure that is used to test how well the measured variables represent the number of constructs. Moreover, the CFA allows to test the hypothesis of a research study with assessing the relationship between observed variables and also finding the existence of underlying latent constructs. Amos 21.0 facilitates the measurement of the structural model. Hair et al. (2006) proposed that the CFA validation needs to be assessed through two stages, firstly goodness of fit indices, secondly through assessing the validation of construct. Therefore, this study intends to conduct these two stages in order to validate the CFA of the collected data.

5.4.1.1 Goodness of fit indices (GFI)

Based on this research study, the initial CFA is conducted based on six constructs (informational, operational, marketing, environmental barriers, accelerated internationalisation and the CCU of the EM-SMEs) along with 26 items (as it was created for the instruments of this research study explained in tables of 5.4, 5.5, 5.6, 5.7, 5.8 and 5.9.

Figure 5.1 illustrates the constructs as informational barriers (IB), operational barriers (OB), marketing barriers (MB), environmental barriers (EB), the integration of the CCU of the EM-SMEs (CCU-Integration) and accelerated internationalisation (AI). Each constructs has been loaded with its items and they have been tested by the CFA analysis.

According to the study of Hair et al. (2010), it has been suggested that for the confirmatory factor analysis and the confirmation of a structural model, the data analysis needs to be tested at least by four model fits. Further, on this suggestion, this study even tests eight indices of "goodness of fit" in order to investigate the level of acceptance of the initial CFA at its maximum of confidence. These tests are comprised of Chi Square (P-Value), GFI or goodness of fit indices, AGFI or adjusted goodness of fit index, TLI or Tucker-Lewis, IFI or Index incremental fit index, CFI or comparative fit index, and RMSEA or root mean square error of approximation and ChiSq/df.

Figure 5.1 shows the initial CFA model of this research study. The AMOS generated factor loading for each variable relations. Factor loadings represent how much a factor explains a variable in factor analysis. Moreover, for each survey question (item), examine the highest (positive or negative) loadings to determine which factor affects that question the most. Loadings can range from -1 to 1. Loadings close to -1 or 1 indicate that the factor strongly affects the variable. Loadings close to zero indicate that the factor has a weak effect on the variable. Examine the loading pattern in the Minitab factor analysis output to determine the factor that has the largest effect on each variable. Some variables might have high loadings on multiple factors.
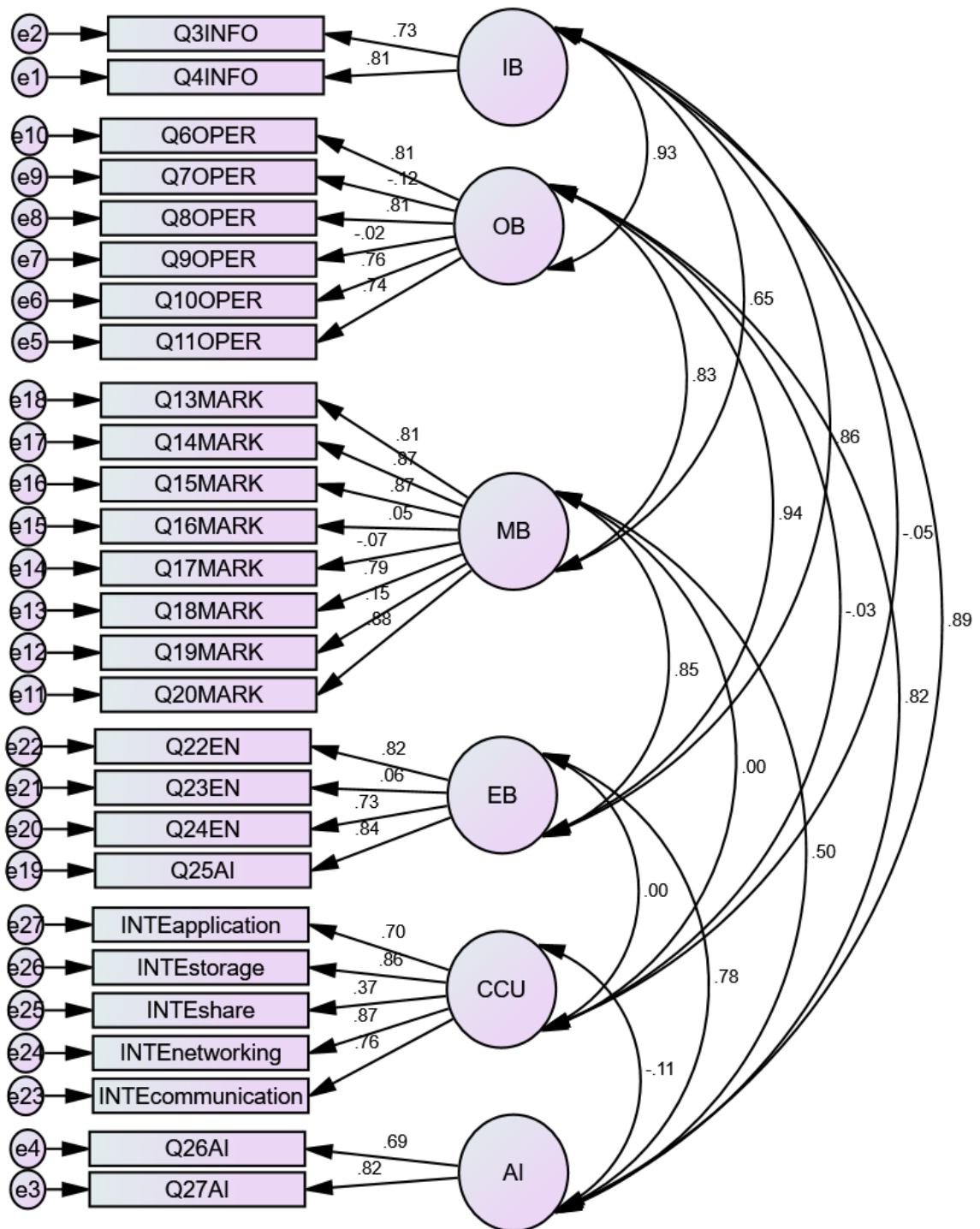
Figure 5.1 - Initial Confirmatory Factor Analysis (CFA) model

According to the figure 5.1 and the results that have been achieved by the initial CFA shown in table 5.13, these figures show that the level of acceptance for these model fit have achieved unacceptable fit indices.

Table 5.13- The goodness of fit indexes for the initial CFA The three categoies of model fit and the level of acceptance

Name of chategory	Name of index	Level of acceptance	Defult Model
Absulute fit	Chi-Square	P-Value $\geq$0.05	**.000**
	RMSEA	RMSEA < 0.08	**.077**
	GFI	GFI $\geq$ 0.90	**.796**
Incremental fit	AGFI	AGFI $\geq$0.80	**.750**
	CFI	CFI $\geq$0.90	**.877**
	IFI	IFI $\geq$0.90	**.879**
	TLI	TLI $\geq$0.90	**.860**
Parsimonionous fit	Chisq/df	Chi-Square/df <3.0	**2.354**

The results indicate that GFI (0.792) and AGFI (0.746) indices in the initial CFA are lower than the recommended level of acceptance. Also the results for CFI (0.877), IFI (0.878) and TLI (0.860) indices in initial CFA are lower than the recomanded level of acceptence in this model. However, RMSEA (0.086), P Value (0.000) and Chisq/df (2.354) indicate acceptable results for initial model. Therefore, since the model could not obtain at least four fitted tests for confirmatory factor analysis and confirming its structural model therefore the initial model rejected (Hair et al. 2010).

Generally the outcomes for the initial CFA indicate that the initial model needs refinement in order to achive acceptable level of indices for being fitted when these indices are below the minmimum recommended criteria indicated in table 5.13 (Anderson & Gerbing 1984) in the column of the level of acceptance (see Apandix IV).

In Amos the goodness of model fit can be progressed by finding of the standardised residuals, indices of modifiaction and specified serchers in covariances, variances and regression weights (Hair et al. 2010).

According to the instruction of Amos in which is to delete the direct paths from the model those items which are not significant, this study has improved the initial model by deleting some of the items (Q7OPER, Q9OPER, Q16MARK, Q17MARK, Q19MARK, Q23EN) to obtain the minimum acceptance for its final CFA structure model. In order to reach to the level of acceptance in the CFA and after removing the problematic items that are indicated by low factor loadings in the initial model once again, another test was run by the Amos.
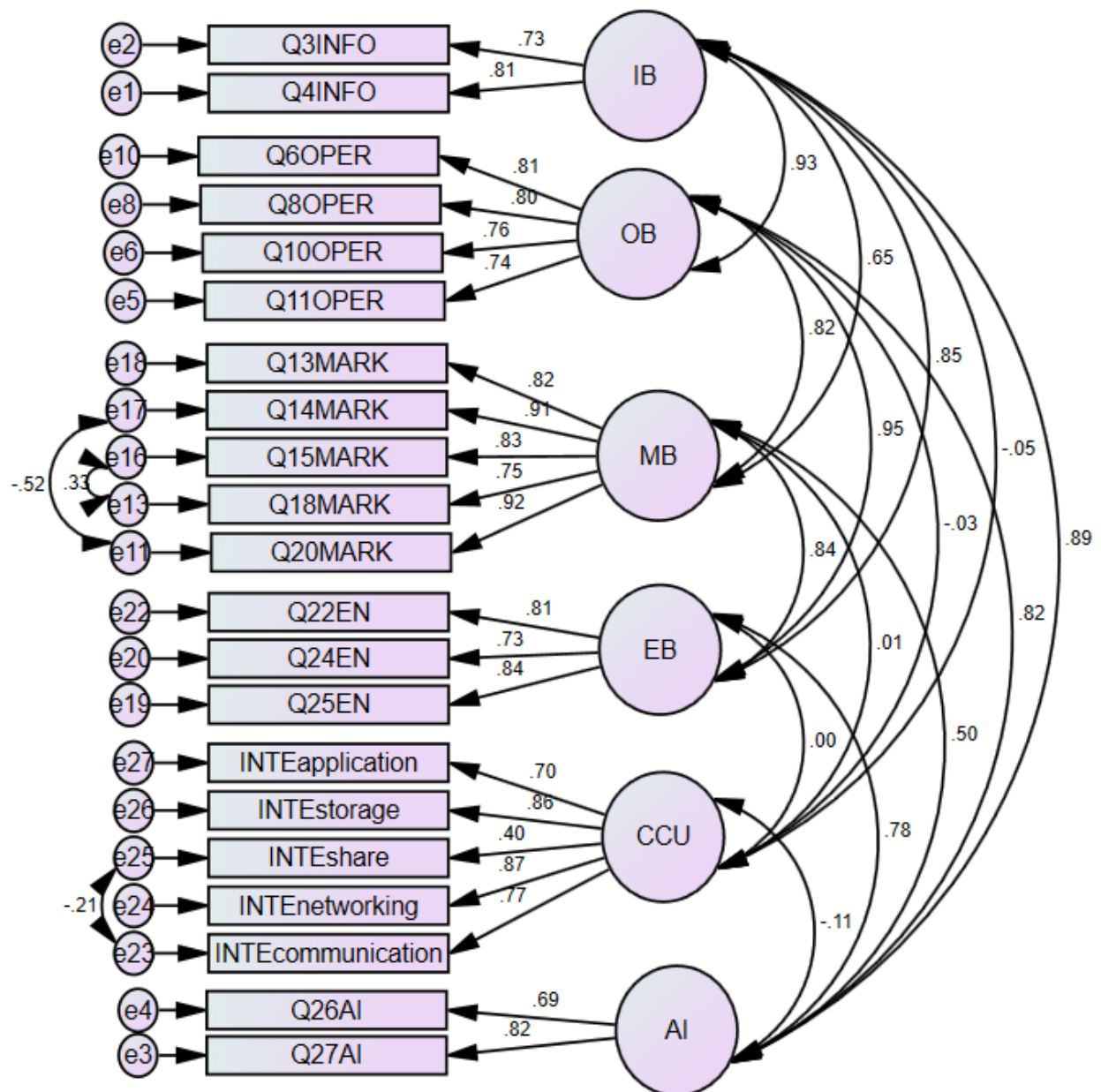
Figure 5.2 - Final Confirmatory Factor Analysis (CFA) Model (Fitness Indexes)

As indicate in the figure 5.2, after deleting items further for improving the indices fit in the final model, it needs to correlate those errors in one construct that have theoretical rationale relationship with each as they are proposed by the Amos.

Table 5.14 - The goodness of fit indexes for the final CFA

Name of chategory	Name of index	Level of acceptance	Defult Model
Absolute fit	Chi-Square	P-Value >0.05	**.000**
	RMSEA	RMSEA < 0.08	**.052**
	GFI	GFI ≥ 0.90	**.900**
Incremental fit	AGFI	AGFI ≥0.80	**.866**
	CFI	CFI ≥0.90	**.967**
	IFI	IFI ≥0.90	**.967**
	TLI	TLI ≥0.90	**.959**
Parsimonionous fit	Chisq/df	Chi-Square/df <3.0	**1.607**

Table 5.14 presents with the satisfactory results of goodness of fit indices presents, all the figures for the final CFA model are above the minimum level of acceptance. The results indicate that GFI (0.9) and AGFI (0.866) indices which are obtained in the final CFA are more than the recommended level of acceptance. Also the results for CFI (0.967), IFI (0.967) and TLI (0.959) indices obtained in the final CFA are greater than the recommended level of acceptance in this model. In addition, RMSEA (0.052), P Value (.000) and Chisq/df (1.607) indices have acceptable results for the final model.

As the final figure illustrates a good fit for the further measurement such as validity assessment, testing of the structural model and finally testing of proposed hypothesis for this research study.

5.4.2 The assessment of validity

The validity refers to the accuracy of inferences drawn from an assessment, in other words, validity is a degree to which an assessment evaluates of what it is intended to be measured. In addition, validity is the most important issue in selecting of an assessment, when it refers to the characteristics of the test measures to see how well the measures of a test is characterised as validity tells researchers whether the characteristic being measured by an assessment is related to qualifications of a work and its requirements. Moreover, validity gives meaning to the scores of an assessment and this indicates that there is

linkage between the assessment performances and work performance. In addition, the validity delineates the degree to which a researcher can make specific predictions about a phenomenon based on the assigned test scores. In other words, the validity indicates the usefulness of the assessment.

Therefore, regarding the validity assessment of this research study through the CFA, as the items, which are measure of a particular construct, needs to converge or share a high ratio in common variance. As reliability can be considered as, an indicator of convergent validity and reliability that can delineate for the researcher how trustworthy a score on that assessment will be while the researcher cannot draw valid conclusions from a test score unless they are sure that the assessment is reliable. Even when an assessment is reliable, it might not be valid. Thus, researchers need to be careful that any assessment needs to be tested not only in its reliability but also in its validity. Hair et al (2010) suggest that it is important to validate the constructs of a model through CFA results. In addition, this validity assessment ensures that scales in a model are unidimensional, and conforms to one conceptual definition. This means, the convergent design of items in each construct needs to be followed by one concept. For examining the model validation, this study has carried out two assessments firstly Convergent Validity Assessment, secondly Discriminant Validity Assessment.

5.4.2.1 Convergent Validity Assessment

This validity refers to the level of two measures of constructs (items) that should be theoretically related are also empirically related with each other. Hair et al (2010) mentioned that this assessment reveals the items that measure a construct share a high proportion of in common variances.

Moreover, Average Variance Extracted (AVE) is a test uses for measuring this assessment. The AVE is important because this assessment shows the average amount of variance in indicator variables that a construct is managed to explain. The AVE for each construct can be obtained by sum of squares of completely standardized factor loadings divided by this sum plus total of error variances for indicators. For the completely standardized solution, all indicator and latent variables are scaled to have unit variance.

As it was explained for achieving this assessment, the following formula is known to measure up the AVE,

$$AVE = \frac{\sum_{i=1}^{n} \lambda_i^2}{n}$$

Where λ is the factor loading and i represents the total number of items. Nunnally (1978) raised his suggested minimum acceptable reliability from 0.7 to 0.8 Nunnally (1993) however, suggested that a compelling demonstration of convergent validity would be an AVE of 0.5 or above. Average Variance Extracted (AVE) needs to be more than 0.5 but in the study of Fornell & Larcker (1981), they accepted the outcome of 0.4. They emphasised on the adequacy of lower AVE because if AVE is less than 0.5, but construct reliability (CR) is higher than 0.6, the convergent validity of the construct is still adequate.

It is not worthy that, CR is usually generated when running Structural Equation Modeling (SEM) test, that is the measure for internal consistency of reliability that does not assume equal indicator loadings, whereas Cronbach Alpha is the measure of internal consistency of reliability that presume equal indicator loadings (Hair, Hult, Ringle & Sarstedt, 2017). As it will be shown in table-5.15, in this study the CR is higher than AVE so the convergent validity assessment for the constructs of this research study is adequate.

The Construct Reliability (CR) is adapted in the SEM analysis, as its value is usually higher than Cronbach Alpha in which the difference is inconsequential (Peterson & Kim, 2013). This measures the internal constancy of a construct and based on a rule of thumb this measurement needs to be more than the outcome of 0.7 (Bagozzi and Yi 1988). Furthermore, the below formula is applied for calculating the values for each construct.

$$CR = \frac{(\sum_{i=1}^{n} \lambda_i)^2}{(\sum_{i=1}^{n} \lambda_i)^2 + (\sum_{i=1}^{n} \delta_i)}$$

Where λ is the factor loading, i represents the total number of items and σ represents the error variance for each latent constructs. Table 5.15 shows the adequacy of CR for the construct of this research study.

Table 5.15 – The Assessment of Convergent Validity, AVE and CR

Construct	Item	Factor Loading	Critical Ration T-value	AVE	CR
IB	Q3INFO	.730	.532	0.592075	0.743
	Q4INFO	.807	.652		
OB	Q6OPER	.811	.657	0.605502	0.860
	Q8OPER	.805	.648		
	Q10OPER	.758	.575		
	Q11OPER	.736	.542		
MB	Q13MARK	.817	.667	0.716848	0.926
	Q14MARK	.908	.824		
	Q15MARK	.830	.688		
	Q18MARK	.750	.563		
	Q20MARK	.917	.840		
EB	Q22EN	.814	.662	0.633212	0.838
	Q24EN	.729	.532		
	Q25EN	.840	.706		
CCU INTEGRATION	INTEapplication	.702	.492	0.546568	0.851
	INTEstorage	.859	.737		
	INTEshare	.395	.156		
	INTEnetworking	.867	.752		
	INTEcommunication	.771	.594		
AI	Q26AI	.685	.469	0.567541	0.723
	Q27AI	.816	.665		

Table 5.15 shows the convergent validity assessments of the AVE and the CR for this research study. According to the rules of thumb, all the factor loadings should be statically significant and the Standardised Estimates should be also ≥ 0.5 and ideally ≥ 0.7. In addition, CR should be indicated more than the AVE and also the AVE needs to be stand more than 0.5. Furthermore, according to the rules of thumb, the validity of Construct Reliability thresholds should achieve the following results. The CR should be more than 0.7; and CR should be indicated more than AVE as AVE should be indicated more than 0.5.

5.4.2.2 The Assessment for Discriminant Validity

Discriminant validity assessment can be considered as a divergent validity assessment to measure to what extent whether a concept in a construct is not supposed to be related or unrelated. Hair et al. (2006, p. 137) defines the discriminant validity as

"*the degree to which two conceptually similar concepts are distinct.*"

This means when the variables correlate low or highly with other variables outside their parent factor. This evaluation can be assessed by comparing the AVE for any two constructs with squared correlation that estimate between these two constructs. Thus, the evaluation would be significant when the outcome for the AVE is more than squared correlation that is estimated between two constructs.

Table 5.16 – The Discriminant validity Test

	EB	IB	AI	OB	MB	CCU
EB	0.796					
IB	0.855	0.769				
AI	0.777	0.887	0.753			
OB	0.945	0.927	0.821	0.778		
MB	0.838	0.647	0.497	0.818	0.847	
CCU	0.000	-0.053	-0.110	-0.026	0.007	0.739

Table-5.16 shows that the significant degree of discriminant validity when the value of AVE is more than the value of squared correlation estimates for each constructs. The discriminant validity in constructs of the CCU, the MB and the EB are significant (Fornel and Lacker, 1981). However, the construct of the OB, the IB and the AI have relatively low discriminant validity and according to the study of Bagozzi and Phillips (1982) and Henseler et al. (2015:131) "*failure to establish discriminant validity between two constructs does not necessary imply that the underlying concepts are identical. Specially when follow-up research provides continued support for differing relationships with the antecedent and the resultant concepts*".

5.4.3 Structural Model and Hypothesis Testing

By confirming the results for CFA stage of this study, the next phase is to examine the structural model. The structural model approves the relationships among the factors that have already been proposed. According to Hair et al. (2010), essentially four tests have been emphasised to be carried out at least in order to fit indices for the model.

Likewise, the assessment of goodness of fit for two previous models, for maximum assurance seven fit indices will be carried out for the structural model in order to evaluate

the goodness of fit. These indexes are Chi Square (X^2) to the degree of freedom (df), GFI, AGFI, IFI, TLI, CFI, and RMSEA. The structural model investigates the relationships among constructs of the EM-SMEs the CCU Integration (the EM-SMEs + CCU), the Informational Barriers (IB), the Operational Barriers (OB), the Marketing Barriers (MB), the Environmental barriers (EB) and the construct of Accelerated internationalisation (AI). The structure of relationship between the EM-SMEs the CCU integration with four factors of Informational, Operational, Marketing and Environmental and accelerated internationalisation are illustrated in figure 5.3 and Table 5.17 shows the CFA of structural model by obtaining the minimum of acceptance in goodness of fit for this model.

Table 5.17 - The goodness of fit for structural model

Name of chategory	Name of index	Level of acceptance	Defult Model
Absulute fit	Chi-Square	P-Value >0.05	**.000**
	RMSEA	RMSEA < 0.08	**.052**
	GFI	GFI ≥ 0.90	**.901**
Incremental fit	AGFI	AGFI ≥0.80	**.861**
	CFI	CFI ≥0.90	**.968**
	IFI	IFI ≥0.90	**.969**
	TLI	TLI ≥0.90	**.959**
Parsimonionous fit	Chisq/df	Chi-Square/df <3.0	**1.601**
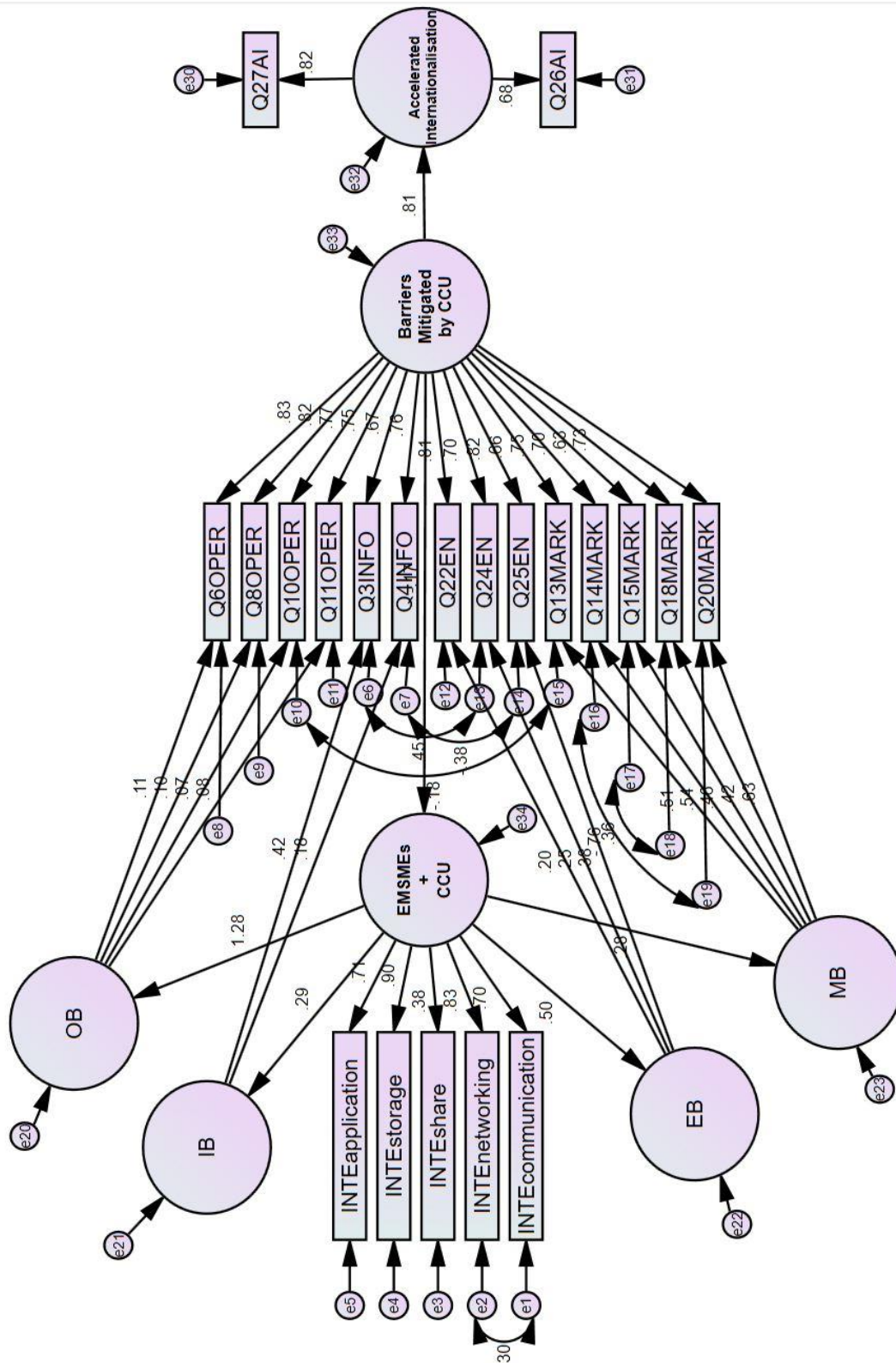
Figure 5.3 - The Structural Model, The Regression Path Coefficients between the constructs

5.4.3.1 Hypothesis Testing

The hypotheses in this research study are examined by interpreting the significant path of each relationship. The five hypotheses of this research study will be examined by the use of the standardised estimate, critical ratios (C.R.)/ t-value and p-value. Given that, the critical ratio or t-value can be calculated through dividing the regression weight estimate (Estimate) by standard error (S.E). Thus, relationships between variables are significant when a t-value is more than 1.96 with a p-value of ≤0.05.

Table-5.18 shows the outcomes for path estimates of five hypotheses in this study. Moreover, the outcomes show that all five paths are significant as the calculations report that the C.R. or t-values are above 1.96 and the p-value is ≤0.05. Therefore, the relationship between CCUInte and Informational Barriers (IB) is significant because of t-value of 1.987 and a significant p-value of ≤0.05 and consequently the hypothesis H_1 can be supported. In addition, the relationship between CCUInte and Operational Barriers (OB) is significant because of t-value of 2.224 and a significant p-value of ≤0.05 and consequently the hypothesis H_2 can be supported. Moreover, the relationship between CCUInte and Marketing Barriers (MB) is significant because of t-value of 3.008 and a significant p-value of ≤0.05 and consequently the hypothesis H_3 can be supported. Furthermore, the relationship between CCUInte and Environmental Barriers (EB) is significant because of t-value of 3.339 and a significant p-value of ≤0.05 and consequently the hypothesis H_4 can be supported.

Table 5.18 - Hypothesis testing

Regression Weight of the Hypothesis				Estimate	S.E.	C.R.	P	Finding
H_1	IB	<---	CCUInte	.553	.278	1.987	.047	Supported
H_2	OB	<---	CCUInte	.624	.281	2.224	.026	Supported
H_3	MB	<---	CCUInte	.946	.314	3.008	.003	Supported
H_4	EB	<---	CCUInte	.890	.226	3.339	***	Supported
H_5	AI	<---	BarrierMitigation	.998	.115	8.653	***	Supported

Finally, the relationship between Barrier Mitigation by the CCU and Accelerated Internationalisation (AI) is significant because of t-value of 8.653 and a significant p-value of ≤0.05 and consequently the hypothesis H_5 can be supported. In addition, figure 5.4

illustrates the path regression-weight of five relationships in the proposed conceptual framework. The outcomes show that the existence of significant and positive association between the EM-SMEs+CCU and mitigated informational barriers (IB) with a path regression-weight value of 0.287 so, these results support H_1. In addition, the outcomes show that the existence of significant and positive association between the EM-SMEs+CCU and mitigated operational barriers (OB) with a path regression-weight value of 1.283thus, these results support H_2. Moreover, the outcomes show that the existence of significant and positive association between the EM-SMEs+CCU and mitigated marketing barriers (MB) with a path regression-weight value of 0.283; therefore, these results support H_3. Furthermore, the outcome show that the existence of significant and positive association exists between the EM-SMEs+CCU and mitigated environmental barriers (EB) with a path regression-weight value of 0.502 thus, these results support H_4. Finally, the results indicate that the existence of significant and positive association between the mitigated barriers by the CCU and accelerated internationalisation (AI) with a path regression-weight value of 0.811; as, these results support H_5.

5.4.3.2 Confirmation of the Conceptual Model and Research Hypothesis

To sum up, table-5.19 presents the path regression-weight values for all five relationships variables in this research study are significant and consequently according to the findings all five proposed hypothesis by this research study are supported.

Table 5.19 - Confirmation of Research Hypothesis

Hypothesis		Path Coefficient	Finding
H_1	*The CCU has a significant positive effect on mitigation of informational barriers for the EM-SMEs internationalisation.*	0.287	Supported
H_2	*The CCU has a significant positive effect on mitigation of operational barriers for the EM-SMEs internationalisation.*	1.283	Supported
H_3	*The CCU has a significant positive effect on mitigation of marketing barriers for the EM-SMEs internationalisation.*	0.283	Supported
H_4	*The CCU has a significant positive effect on mitigation of environmental barriers for the EM-SMEs internationalisation.*	0.502	Supported
H_5	*Internationalisation Barrier mitigation by the CCU has a significant positive impact on accelerated internationalisation.*	0.811	Supported

In addition, according to the mentioned findings, the conceptual model is significant and consequently the model structure for this model is supported.
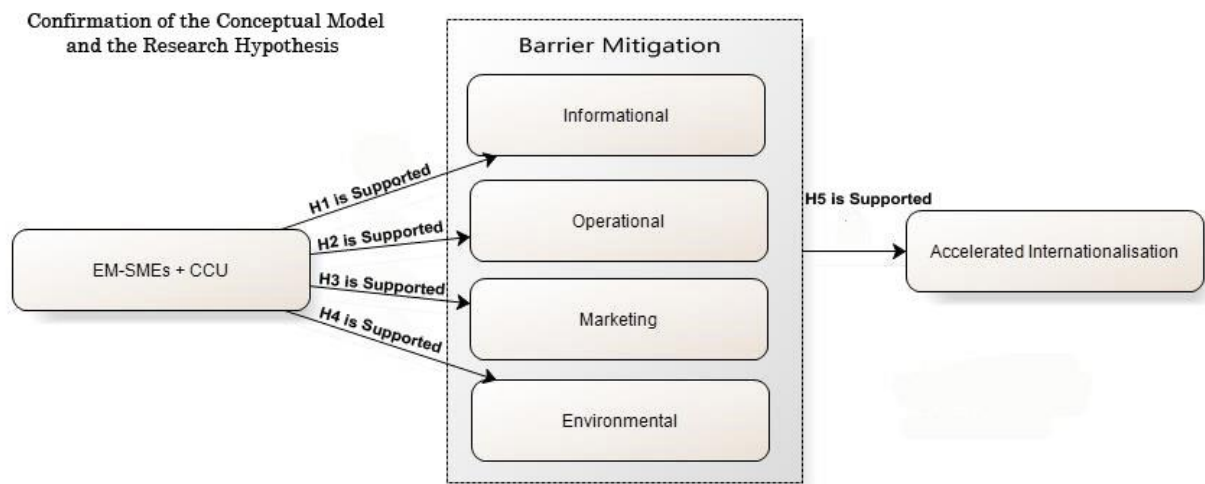
Figure 5.4 - The supported hypothesis in the Theoretical model of Research Study
The impact of the CCU on the EM-SMEs' Internationalisation Barriers

5.5 Summary

To sum up, the research population was SMEs in Emerging Markets where two countries of Turkey and Iran have been nominated for collecting data. The questionnaire was randomly distributed among 950 SMEs in two countries of Iran and Turkey from 15th Dec. 2015 to 10th March 2016. The survey deployed through the SurveyMonkey Website and the links of the questionnaires were disseminated by emails and other social networking into three languages of English, Farsi and Turkish to the EM-SMEs. In total 243 questionnaires were collected almost equally, from these two countries within the aforementioned period of time and after screening, the numbers of 16 questionnaires were deleted due to incompleteness. Therefore, 227 valid and clean questionnaires were used for data analysis for this research study.

The SEM technique has been conducted for this research study by using of IBM SPSS STATISTICS version 20 and IBM SPSS Amos Ver. 21.0 were used for evaluating the

confirmatory factor analysis (CFA). Moreover, for being ensured that the measurement for the constructs precisely is associated with the concept of this research study, this study has assessed the convergent and discriminant assessment. Hair et al. (2010) state that the assessment of convergent validity can be validated by factor loadings, AVE and construct reliability. As a rule of thumb, factor loadings need to have standardised regression weight more than 0.50 and critical ratio or t-value needs to be more than 1.96. Moreover, the value of AVE needs to be more than 0.5 and its weight needs to be more than 0.70 (Hair et al. 2010). Therefore, the assessment for the validity of the instrument indicated that the minimum necessity for validating of factor loading, t-value, the AVE and the construct reliability have been achieved in the data analysis of this research study. As obtained figures present, an acceptable degree of assessment for validated convergent have been achieved for all latent constructs, which have been used for the model of this research study. Moreover, as Hair et al. (2010) indicated that the discriminant validity could be examined by the comparison the values of the AVE of each two constructs with the squared correlation estimate between these two constructs. As data analysis outcomes for this research study show that, the validity of the AVE is higher than the squared correlation estimate for all these constructs.

In addition, the test of Cronbach's alpha has been applied for assessing the internal reliability of the instrument. According to the rules of thumb figure of ≤0.90 is excellent reliability, 0.70-0.90 is high reliability, 0.50-.70 is moderate reliability, and ≤0.50 is low reliability (Hinton et al. 2004) as the figures of findings revealed that the internal reliability for all constructs were validated from moderate to high reliability throughout the constructs.

Moreover, the KMO and Bartlett's Tests showed that the variables in the sample adequately were correlated with each other and the Bartlett's Test sphericity confirmed the elation with these variables (Hair et al. 2010). According to the rule of thumb, the KMO figure should be exceeded above the minimum value of 0.60 and Bartlett's test should be indicated p< 0.05 (Hair et al. 2010). As the figure of findings showed, the tests have higher results of their assigned minimums. In general, by achieving high level of appraisement in

the instruments of this research study, this can be inferred that applied instruments have high validity with a high internal reliability.

Moreover, the CFA was conducted to measure up the goodness of fit (GFI) indices in order to assess whether the collected data for each construct is valid for the validity of the constructs. Furthermore, the assessment of the AVE, discriminant validity and the construct reliability were performed for assessing the validity of constructs in the structure. Finally, the structural model and hypotheses were tested and the results revealed that all five proposed hypotheses for this research study were supported by the findings.

Chapter Six
Discussion of Findings

6.1 Introduction

In this chapter, author intends to discuss the rational connection among empirical findings and the existing theories of this research study. According to the multidisciplinary literature in this research study, amount of discussion is required to interpret the consistency and/or inconstancy of findings with the existing theories in the thesis. In other words, this chapter discusses the research results with research question and proposed hypothesis whether why the findings approve or disapprove the hypothesis and ultimately this chapter will look into the main research question to find out whether empirical outcomes of the study are able to propose a certain answer to the main question of this research study.

Due to argument of this research study, the internationalisation barriers of the EM-SMEs have been categorised into four main subcategories of informational, operational, marketing and environmental. Where the utilising the CC can mitigate these barriers and enable the EM-SMEs to accelerate their internationalisation.

Moreover, according to the findings of this research study which have been conducted empirically for each proposed the CCU's solution and its relevant the EM-SMEs' barriers in chapter five, the findings enable the author to discuss and interpret the effectiveness of these proposed solutions on mitigation of the EM-SMEs' barrier. Furthermore, the researcher would be able to discuss the consistency and/or inconsistency of these proposed solutions with the existing barriers in the literature towards accelerated internationalisation. This chapter consists of two sections. The first section will discuss about the hypothesis testing and second section intends to answer and discuss about the main research question, whether the CCU can be effective to mitigate the internationalisation barriers and accelerate the EM-SMEs internationalisation.

6.2 Discussion of Hypothesis Testing

This section intends to provide an overview of the research hypotheses and discuss the obtained results for each hypothesis along with providing a comprehensive solution for each barrier item reflected in literature review. Table 6.1 presents five supported hypotheses of the research study that have been examined the effectiveness of the CCU for the EM-SMEs to mitigate the internationalisation barriers towards an accelerated internationalisation. The result of each hypothesis will be discussed in details in the following sub sections.

Table 6.1 - Hypothesis findings

Hypothesis		Finding
H_1	The CCU has a positive significant effect on mitigation of informational barriers for the EM-SMEs internationalisation.	Supported
H_2	The CCU has a significant positive effect on mitigation of operational barriers for the EM-SMEs internationalisation.	Supported
H_3	The CCU has a significant positive effect on mitigation of marketing barriers for the EM-SMEs internationalisation.	Supported
H_4	The CCU has a significant positive effect on mitigation of environmental barriers for the EM-SMEs internationalisation.	Supported
H_5	Internationalisation Barrier mitigation by the CCU has a significant positive impact on accelerated internationalisation.	Supported

6.2.1 The integration of the CCU and the EM-SMEs,

According to the NIST's definition, cloud computing is "*a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources and can be rapidly provisioned and released with minimal management effort or service provider interaction* (Mell & Grance 2011:2)". According to aforementioned definition five items of INTEapplication, INTEstorage, INTEshare, INTEnetworking, and INTEcommunication make the construction of the integration of the CCU. The magnitude level of usage has been measured up according table 6.2.

Table 6.2 - The integration of Cloud Computing Utilisation

Q. Code	Item	Description	Minimum units	Maximum units
Q32	INTEapplication	Downloading any CC application for business purpose facilitation	2	15
Q36		Using different CC applications for business purposes		
Q34	INTEstorage	Storing business documents on clouds	1	6
Q35	INTEshare	Sharing business documents by clouds	1	1
Q37	INTEnetworking	Using social networking applications for business purposes	1	8
Q38	INTEcommunication	Using cloud computing applications for VoIP	2	11
Q39		Using cloud computing applications for business communications		

Q32 and Q36 are designed to elicit the magnitude level of using various applications by the EM-SMEs for their internationalisation (INTEapplication). The respondent were asked whether they have downloaded any application for business purposes and also how many applications are being used for their businesses. These applications are Voice Communication, Audio & Visual, Finance & Banking, Email, Promotional, Storing and archiving, Service & Maintenance, Networking, Domain and Website, Accounting, Socializing, Messaging, Searching information, Surveillance. The results found that the regression weight between 'the EM-SMEs+CCU' and 'INTEapplication' has a significant positive impact with path estimate of 0.708, t-value of 5.792 and a significant p-value of $\leq$

0.05. Thus, the results are consistent with prior definitions of CC by Mell & Grance (2011); Edwards, Sheynkman, Bragg in (Geelan, 2008); Vaqueroet al. (2008); Cavusgil & Knight, (2009) and Chan et al. (2012). Moreover, the outcomes are matched with the argument of Armbrust et al., (2010) that argue CC applications can facilitate users to pay exactly for the right amount of software usage. Q34 is designed to elicit the magnitude level of using storage applications on cloud by the EM-SMEs for their internationalisation (INTEstorage). The respondent were asked whether how many applications are being used for storage of documents over cloud. These applications are E-mail spaces, Dropbox, Google Drive, OneDrive, iCloud. The results found that the regression weight between 'the EM-SMEs+CCU' and 'INTEstorage' has a significant positive impact with path estimate of 0.897, t-value of 6.113 and a significant p-value of $\leq$ 0.05. Thus, the results are consistent with prior definitions of CC by Mell & Grance (2011); Sheynkman, in (Geelan, 2008); Cavusgil & Knight, (2009), Chan et al. (2012); and Vaqueroet al. (2008). In addition, the outcomes show the consistency of findings with prior reasoning in the literature that argues the CCU provides sufficient benefit to access data storage as a new generation of innovation and architecture that support high volume of data, storage and analysis (Villars, Olofson, & Eastwood, 2011).

Q35 is designed to elicit the magnitude level of using sharing applications by the EM-SMEs for their internationalisation (INTEshare). The respondent were asked whether they use or not, any applications for sharing their documents over the cloud. The results found that the regression weight between 'the EM-SMEs+CCU' and 'INTEshare' has a significant positive impact with path estimate of 0.382, t-value of 4.531 and a significant p-value of $\leq$ 0.05. Thus, the results are consistent with prior definitions of CC by Mell & Grance (2011); and Vaqueroet al. (2008). When these definitions indicate to a new facilitation on internet that enables firms remotely store, share, control and programme their data and physical resources through internet and controlling of the shared resources among the stakeholders on the Cloud make the internet more dynamic and centralised. Q37 is designed to elicit the magnitude level of using social networking applications by the EM-SMEs for their internationalisation (INTEnetworking). The respondent were asked how many applications they use for social networking over the cloud applications such as Facebook, Twitter, LinkedIn, Google Plus+, WhatsApp, Instagram, Telegram and imo.

The results found that the regression weight between 'the EM-SMEs+CCU' and INTEnetworking has a significant positive impact with path estimate of 0.829, t-value of 6.044 and a significant p-value of $\leq$ 0.05. Thus, the results are consistent with prior definitions of CC by Mell & Grance (2011). In addition, the outcomes are matched with the prior studies in the literature where, many scholars do unanimously agree that networking and communication can be possible by advanced ICTs through an electronical collaboration in firm supply chain management (Hammant, 1995; Porter, 2001; Fong, 2005; Porter & Millar, 1985; Jin, 2006). Q38 and Q39 are designed to elicit the magnitude level of using communication applications by the EM-SMEs for their internationalisation (INTEcommunication). The respondent were asked whether they prefer to communicate with available applications or direct telephone/mobile calls and also how many applications are being used for communication over the cloud, applications such as Skype, WhatsApp, Telegram, imo, Viber, Line, ooVoo, BBM, FaceTime, and Tango. The results found that the regression weight between 'the EM-SMEs+CCU' and 'INTEcommunication' has a significant positive impact with path estimate of 0.703, t-value of 5.739 and a significant p-value of $\leq$ 0.05. Thus, the results are consistent with prior definitions of CC by Mell & Grance (2011). In addition, the outcomes are matched with the prior studies in the literature, when Moen (2002) argues that the success of BGs is mainly known because of the uniqueness, breakthrough in advanced communication and technology development, and international networking with their alliances. The results are constant with widely accepted fact that Internet with allied information and communication technologies facilitate SMEs internationalisation (Bell & Loane, 2010). Furthermore the findings confirm that the use of the CCU as an advanced ICTs can provide SMEs a better communication, control and collaboration operations (Jean & Sinkovics, 2010; Jean, Sinkovics, & Cavusgil, 2010; Jean, Sinkovics, & Kim, 2008; Yamin & Sinkovics, 2007).

6.2.2 Informational Barriers

According to literature review, informational barriers refer to those barriers that hinder the EM-SMEs' internationalisation because of lacking adequate information and data in target markets (Da Rocha et al., 2008; Köksal and Kettaneh, 2011; Korneliussen and Blasius, 2008; Milanzi, 2012; Altintaset al., 2007; Pinho and Martins, 2010; Shaw and

Darroch, 2004; Yannopoulos and Kefalaki, 2010; Arteaga-Ortiz and Fernandez-Ortiz, 2010; Morgan and Katsikeas, 1998; Suarez-Ortega, 2003). The results of this study found that the utilisation of cloud computing (CCUInte) has a significant positive impact on Informational Barriers (IB) with path estimate of 0.287, t-value of 1.987 and a significant p-value of ≤ 0.05 and consequently hypothesis (H$_1$) is supported. Thus, the results are consistent with the prior study of Pérez-López, Alegre (2012) that argues the CCU can facilitate firms to use search engines to access data in target markets. Also these findings are consistent with the study of Villars, Olofson, and Eastwood, (2011) that discusses the CCU provides SMEs adequate privilege to access high volume of data and informational storage that are refined and analysed appropriately. As Purcell (2014) emphasises the CCU enables firms to utilise big data technology more conveniently and with lesser obligation. Furthermore, the findings prove that the CCU enhances firms' informational capabilities as well as enabling them constantly being aware of possible business opportunities in the foreign markets (Iovan & Daian, 2013). Therefore, according to the findings, the study discusses and argues the effectiveness of the following proposed solutions of the CCU (table-6.3) in mitigation of the EM-SMEs informational barriers.

Table 6.3 - Informational Barriers and proposed the CCU solutions

Informational Barriers in Internationalisation				
Barrier	**the EM-SMEs' IB Barriers**	**Proposed Solution**	**The potential impact of the CCU on Informational Barriers in internationalisation (solution)**	**Q. Code**
IB01	Inadequate data to place and analyse for target market	S1	Evoking and sorting useful data stored in Cloud by search-engines technologies	Q4INFO
IB02	Uncertain and misleading data in foreign market	S2	Accessing to appropriate data through foreign official websites stored on cloud	Q3INFO
IB03	Identifying opportunities in foreign markets	S3	Conducting convenient research for business opportunities through official agents websites	Q4INFO
IB04	Weakness of identifying and communicating with potential overseas customers	S4	Ubiquitous, convenient and on-demand networking to communicate with potential customers;	Q3INFO

6.2.2.1 CC search-engine applications to access sorted information in target markets

IB01-barrier refers to inadequacy of target-market data for analysing. Inadequate information barricades the EM-SMEs to gain essential information from their target markets. By collecting adequate information from target markets SMEs are able to be more certainties in internationalisation (Welch and Wiedersheim Paul 1980; Leonidou 2004). S1 is a proposed the CCU solution for IB01 barrier; where, by utilising CC the EM-SMEs are able to access ubiquitous, convenient, and on-demand networking (Mell & Grance, 2011) in order to carry out systematic research and communicate with potential customers in target markets. The proposed solution for this barrier was questioned by Q4INFO variable to find out whether the respondents utilise search-engines to identify official websites for recognising customer and market information in home/target markets. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q4INFO variable with path estimate of 0.763, t-value of 9.536 and a significant p-value of ≤ 0.05. Consequently, the study findings support empirically the proposed solution of S1, which has a significant impact on mitigation of IB01-informational barrier. Thus, the results are consistent with prior studies of Pérez-López, and Alegre (2012) that argued search engines could be considered as powerful tools for SMEs in terms of extracting useful information from target market resources. Moreover, in the line with this argument it has been stated that the CCU facilitates the process of management knowledge towards various performance in market such as product quality, customer retention, sales growth, and even in the success of a new-launched product. In addition, utilisation of CC enables SMEs to extract information from big data (Purcell 2014) towards benefiting from accessing to sufficient data storage and analysis (Villars, Olofson, & Eastwood, 2011).

6.2.2.2 The CCU effectiveness in accessing authentic data on official governmental websites

IB02- barrier refers to uncertain and misleading data in foreign market. Leonidou (2004) infers to inconsistency of data and resources in foreign markets when SMEs might be misled by unsure information in target markets, which may be disseminated through unofficial websites. Thus, these barriers could be mitigated when the EM-SMEs are able to access appropriate information through official website in target markets. S2- is a proposed the CCU solution for IB02 barrier when, E-government projects can provide sustainable

and efficient business environments for businesses (Iovan & Daian, 2013). The proposed solution for this barrier was questioned by Q3INFO variable to find out whether the respondents use official websites in order to find their trading opportunities both in home and foreign targets markets. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q3INFO variable with path estimate of 0.668, t-value of 8.587 and a significant p-value of ≤ 0.05. Consequently, the study findings support empirically the proposed solution of S2, which has a significant impact on mitigation of IB02-informational barrier. Therefore, this can be inferred that the EM-SMEs would benefit to manage their informational needs effectively by accessing to appropriate data through foreign and home official websites that are stored on clouds,

6.2.2.3 The CCU for identifying business opportunities published by official websites

IB03- barrier refers to unidentified opportunities in foreign markets, which by unfolding them could be aided to the EM-SMEs to internationalise conveniently. Leonidou (2004) mentions that the assistance of governmental body such as chamber of commerce and trade associations would help SMEs to gain more information about different opportunities in foreign markets and enable them to internationalise more easily. The solution of conducting convenient research for business opportunities through official agents' websites (S3) is proposed for this barrier. The solution suggests that, the CCU mitigates unawareness of target markets and the EM-SMEs are able to obtain more information about the existence of business opportunities in official's websites in foreign markets. Q4INFO variable was used to elicit this information from the respondent. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q4INFO variable with path estimate of 0.763, t-value of 9.536 and a significant p-value of ≤ 0.05. Consequently, the study findings support empirically the proposed solution of S1, which has a significant impact on mitigation of IB03-informational barrier. Thus, the results of this study are consistent with prior study of Iovan & Daian, (2013) regarding e-government agents that facilitate SMEs to obtain their essential information form the official websites on clouds in order to make them familiar with their opportunities in target markets.

6.2.2.4 The CCU effectiveness in identifying and communicating with potential customers

IB04- barrier refers to weakness in identifying and communicating with potential overseas customers (Leonidou 2004). The proposed solution of enabling ubiquitous, convenient and on-demand networking access to carry out systematic research and communicate with potential customers (S4) is suggested for this barrier. The proposed solution for the problem of IB04 was questioned by Q3INFO variable to find out whether the respondents are able to find effective information on home/target markets for their business opportunities. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q3INFO variable with path estimate of 0.668, t-value of 8.587 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the proposed solution. Thus, the results of this study are consistent with prior studies that argue firms can be accessible not only through their PCs but also cloud-friendly devices, such as smart phones, PDAs, laptops, etc. in addition, proper grid infrastructures enables them to be connected anywhere to the mega computers for virtualisation and SaaS (McFedries, 2008). As result of these firm by underpinning CC infrastructure as an advanced technology and utilising the capabilities can deploy an "interwork" (Orlikowski, 1999) among foreign users and customers (Zackariasson and Wilson, 2004) and consequently the CCU enables SMEs to encounter ubiquitous, convenient, and on-demand networking access to carry out systematic research and communicate with their potential customers in foreign countries.

6.2.3 Operational Barriers

In the literature reviews, operational barriers refer to those barriers that could hinder the internationalisation of EM-SMEs because of the lack of ability and capability of these firms to operate remotely the operational-management in the host countries (Da Silva and Da Rocha, 2001; Dean et al., 2000; Hutchinson et al., 2009; Julian and Ahmed, 2005; Arteaga-Ortiz and Fernandez-Ortiz, 2010; Morgan and Katsikeas, 1998; Suarez-Ortega, 2003; Arteaga-Ortiz and Fernandez-Ortiz, 2010; Hutchinson et al., 2009; Leonidou, 2000; Suarez-Ortega, 2003; Eshghi, 1992; Julian and Ahmed, 2005; Moini, 1995; Dean et al., 2000; Milanzi, 2012; Shaw and Darroch, 2004; Julian and Ahmed, 2005; Ahmed et al., 2008; Pinho and Martins, 2010). The results of this study found that the utilisation of cloud

computing (CCUInte) has a significant positive impact on Operational Barriers (OB) with path estimate of 1.283, t-value of 2.224 and a significant p-value of $\leq$ 0.05 and consequently hypothesis (H$_2$) is supported. Thus, the results are consistent with the prior studies of Tsoa (2008), Ensley (2005) and Throng, (2010) that argue, the CCU enables firms to leapfrog the intermediate computing architecture in those markets where it needs more experts and employees for the installation, operation, trouble-shooting, maintenance, and upgrading. Thus, firms enhance their operational abilities and capabilities in those target markets that suffer because of the lack of intermediate computing-infrastructures. Consequently, firms by transforming Capex to Opex are able to transform the capital expenditures such as fixed assets into throughput or operating expenditure such as sales, general and administrative expenses (Armbrust et al., 2010). Furthermore, the findings are consistent with the prior studies of Carroll et al. (2011) that ratiocinate firms by utilising CC operationally are able to exploit their resources more effectively towards efficient productions. Therefore, according to findings, the study discusses and argues the effectiveness of the following proposed solutions of the CCU (table-6.4) in mitigation of the EM-SMEs operational barriers.

Table 6.4 - Operational barriers and proposed the CCU solutions

Operational Barriers in Internationalisation				
Barrier	the EM-SMEs' OB Barriers	Proposed Solution	The potential impact of the CCU on Operational Barriers in internationalisation (solution)	Q. Code
OB05	Insufficient managerial time to manage exporting	S5	the CCU assists managers to save up time in order to export	Q6OPER
OB06	Insufficient skilful personnel for exporting	S6	the CCU leads SMEs to add up skilful employees in export by reducing IT personnel	Q7OPER
OB07	Insufficient production capacity for exporting	S7	the CCU enables SMEs to be more business focused for their productions	
OB08	Insufficiency in finance for exporting	S8	Assisting to mitigate costs effectively	Q8OPER
OB09	Unfamiliarity with paperwork and export procedure	S9	the CCU enables information being provided officially and the authorities may even explicitly offer cloud services to the public	Q9OPER
	Unfamiliarity with foreign law			

OB10	Difficulty in communication with customers in foreign market	S10	Establishing mass media and interpersonal communication channels	Q10OPER
OB11	Difficulty in fast collecting debts from the customers	S11	Prevalence of new methods in electronic transaction by the CCU	Q11OPER
OB12	Difficulties in doing after-sales services in foreign market	S12	the CCU works as a main player in networking and in doing after-sales services in an organisation	Q14OPER

6.2.3.1 The CCU for compensation of insufficiency managerial time to export

OB05-barrier refers to the EM-SMEs insufficiency in time management in order to do with their internationalisation. Given that usually the decision making process are made by a single management in SMEs in terms of controlling and designing the internationalisation strategies and consequently they encounter usually with insufficient managerial time to handle their internationalisation (Leonidou, Katsikeas, and Piercy 1998). The proposed solution of the CCU assists managers to save up their time in order to export and internationalise (S5) is suggested for this barrier. The proposed solution for the problem of OB05 was questioned by Q6OPER variable to find out whether the respondents utilise various applications on their mobile phones, tablets and PCs in order to save up their time for daily management activities. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q6OPER variable with path estimate of 0.830, t-value of 10.085 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S5 on mitigation of barrier OB05. Thus, the results are consistent with prior studies of Lopez, Kundu and Ciravegna, (2009) that argue managers of SMEs are able to save up more time and in terms of being more focused on their speedy internationalisation, even without spending more time to gain information about the target markets. As this factor can help them to save up more time and experience a rapid entry.

6.2.3.2 The CCU for compensation of insufficiency skilful personnel to export

OB06-barrier refers to insufficiency of skilful personnel for exporting in the EM-SMEs. Regarding lack of skilful employees in SMEs most of the time, this importance is procrastinated. Consequently, this fact barricades the opportunities for undertaking

internationalisation (Naidu & Rao 1993; Leonidou 1995, 2004; Da Silva & Da Rocha 2001; Dean et al. 2000; Ellis 2002; Barnes et al. 2006). In addition Gomez-Mejia (1988) argues that relatively SMEs are unable to afford and hire adequate export experts for internationalising. The proposed solution of the CCU S6 is suggested for this barrier. the CCU assists the EM-SMEs to add up more skilful employees in export by reducing IT personnel. The proposed solution for the problem of OB06 was questioned by Q7OPER variable to find out whether the respondents could be assisted by various applications on their mobile phones, tablets and PCs in order to be more focused on their business rather than IT. The results of this study found that the estimate regression weight of the barrier mitigation by the CCU on Q7OPER variable <u>has not</u> a positive impact with path estimate of (- 0.118), t-value of (-1.717) and a p-value of 0.86 which is not significant, as this item was deleted for the final CFA model. Consequently, the proposed solution of S6 for Barrier OB06 is rejected empirically by the study results. Thus, the results of this study are not consistent with prior studies in which argues if organizations could be able to downsize their IT departments based on cloud computing migration, they can increase their cost savings. For example, Forrest (2009) argues that firms could save up 15% on labour costs by moving to cloud (Forrest 2009). It can be inferred that the EM-SMEs managers need skilled expertise and IT personnel in their organisations.

6.2.3.3 The CCU for compensation of insufficiency in production

OB07-barrier refers to insufficiency of production capacity for exporting in the EM-SMEs. This barrier refers to a concept that some firms see internationalisation as a undergone pressure rather than an opportunity. The managers think their firms would undergone under pressure and with their limited resources they would not be able to manage and handle the exporting activities (Albaum, Strandskov, and Duerr 1998; Leonidou, 2004). In the line with this concept, Kamath et al. (1987) state these firms see exporting as lateral activities and consequently they put off internationalising to a time once they are able to handle it. The proposed solution of the CCU enables SMEs to be more business focused for their productions (S7) is suggested for this barrier. As the CCU assists the EM-SMEs to add up more skilful employees to the export staffs by reducing the IT staffs. The proposed solution for the problem of OB07 was questioned by Q7OPER variable to find out whether the respondents could be assisted by various applications on their mobile phones, tablets and PCs in order to be more focused on their business rather than IT. The results of this

study found that the estimate regression weight of the barrier mitigation by the CCU on Q7OPER variable <u>has not</u> a positive impact with path estimate of (- 0.118), t-value of (-1.717) and a p-value of 0.86 which is not significant, as this item was deleted for the final CFA model. Consequently, the proposed solution of S7 for Barrier OB07 is rejected empirically by the study results. Thus, the results of this study are not consistent with prior studies expectation in which was expected that the EM-SMEs with utilising the potentiality of CC could effectively and efficiently exploiting their resources and consequently enable them to be more business focused for their productions (Carroll et al. 2011).

6.2.3.4 The CCU for compensation of financial insufficiency in production

OB08-barrier refers to insufficiency in finance for exporting in the EM-SMEs. Leonidou (2004) states that export operations and internationalisation for SMEs often extensively require financial capability. Moreover he has argues that exporting has higher risk and lower profit and grater costs compared to domestic business. The proposed solution of the CCU is suggested to determine whether the CCU assists SMEs to mitigate their costs effectively (S8). The proposed solution S8 for the problem of OB08 was questioned by Q8OPER variable to find out whether the respondents could be assisted by various applications on their mobile phones, tablets and PCs in order to reduce their current costs and towards allocating more finance on their core business. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q8OPER variable with path estimate of 0.818, t-value of 9.984 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S8 on mitigation of barrier OB08. Therefore, the results of this study are consistent with prior studies that argue the CCU enables SMEs to manoeuvre their capital expenditure (Capex) to operational expenditure (Opex) structure (Marston et al. 2011; Kynetix, 2009). Moreover these findings confirm that the CCU potentially provides a significant cost reductions, for example, capital acquisition, IT infrastructure operations and maintenance costs (Aljabre, 2012; Armbrust et al, 2010; Geczy et al, 2012; Iyer and Henderson, 2010; Luoma and Nyberg, 2011; Yang and Tate, 2009). Moreover, the CCU enables enterprises to mitigate the burden expenditures more effectively. The CCU creates enterprises a symmetric access for the host markets (Vaquero et al., 2008).

6.2.3.5 The CCU effectiveness in providing official information about paperwork, laws and import/export procedures

OB09-barrier refers to the EM-SMEs unfamiliarity with paperwork and export procedure and foreign law. Managers always struggle with difficulties in custom's procedures, rules and regulations and shipping to host countries. These procedures are costly, time consuming as they affect negatively on handling of internationalisation (Moini, 1997; Leonidou, 2004). The proposed solution of S9 is suggested to assess whether the CCU enables information being provided officially, and the authorities may even explicitly offer cloud services to the public. Therefore, the proposed solution S9 for the problem of OB09 was questioned by Q9OPER variable to find out whether the respondents could be assisted by various applications on their mobile phones, tablets and PCs in order to use informative and official websites in target markets and get familiar with rules and regulations of document procedures. The results of this study found that the estimate regression weight of the barrier mitigation by the CCU on Q9OPER variable <u>has not</u> a positive impact with path estimate of (-0.019), t-value of (-0.279) and a p-value of 0.780 which is not significant, as this item was deleted for the final CFA model. Consequently, the proposed solution of S9 for Barrier OB09 is rejected empirically by the study results. Thus, the results of this study <u>are not consistent</u> with prior study suggested by Müller et al. (2011) and Brian et al. (2012); that government can use the capabilities of Cloud Computing for their supports and management. As outcomes of this research study show that, the mentioned argument by Müller has not yet happened in the context of this research study.

6.2.3.6 The CCU effectiveness in target market communication mix

OB10-barrier refers to the EM-SMEs difficulties in communication with customers in foreign market. Having a constant and perpetuated communication with foreign customers would be a strategic operation in order to enable the EM-SMEs to set up a clear monitoring in foreign markets (Leonidou, 2004; Terpstra and Sarathy 2000). The proposed solution of S10 is suggested that the CCU establishes mass media and interpersonal communication channels. Therefore, the proposed solution S10 for the problem of OB10 was questioned by Q10OPER variable to find out whether the respondents could be assisted by various applications on their mobile phones, tablets and PCs in order to be facilitated by communication with customers and representatives in foreign markets and be able to

monitor their requirements and activities. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q10OPER variable with path estimate of 0.765, t-value of 9.523 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S10 on mitigation of barrier OB10. Therefore, the results of this study are consistent with prior study of Mohlameane & Ruxwana (2014) that argues the CCU enables SMEs to establish a robust communication channels via internet such as mass media and interpersonal communication channels. Moreover, the interpersonal communication can be possible to communicate among many foreign customers. As SMEs by using of CC can provide foreign customers a clear demonstration and workshops of their products, collecting the feedbacks and ultimately get ready to react instantly by the strategic planning.

6.2.3.7 The CCU effectiveness in fast and convenient collecting customers' debts

OB11-barrier refers to the EM-SMEs difficulty in fast collecting debts from the customers. Leonidou (2004) points to slow collection of debts and absence of guaranteed payment methods, which lead to slow collection of payment from foreign market as a serious barrier of SMEs internationalisation. The proposed solution of S11 is suggested that the CCU provides prevalence of new methods in electronic transaction. Therefore, the proposed solution S11 for the problem of OB11 was questioned by Q11OPER variable to find out whether the respondents could be assisted by various applications on their mobile phones, tablets and PCs in order to be facilitated to manage relatively easy financial transactions in both home and target markets. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q11OPER variable with path estimate of 0.750, t-value of 9.368 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S11 on mitigation of barrier OB11. Therefore, the results of this study are consistent with prior studies that argue Enterprises are able to collect payments for their sold goods and services from anywhere in the world through the Internet by means of various payment service providers. Despite comparatively secured methods of online standard payment via Visa, MasterCard and American Express, there are many other secured ways are utilised by CC for online payments such as PayPal, Google Wallet, Bit Coins (Research and Markets 2013).

6.2.4 Marketing Barriers

According to literature review, marketing barriers refer to those barriers that hinder the EM-SMEs' internationalisation because of lacking of adequate marketing and communication mix in their target markets (Eshghi, 1992; Julian and Ahmed, 2005; Moini, 1995; Crick, 2002; Da Rocha et al., 2008, Leonidou, 2000; Crick, 2002). The results of this study found that the utilisation of cloud computing (CCUInte) has a significant positive impact on Marketing Barriers (MB) with path estimate of 0.283, t-value of 3.008 and a significant p-value of ≤ 0.05 and consequently hypothesis (H_3) is supported. Therefore, the results of this study are consistent with prior studies that argue the CCU empowers firms to enhance their networking and communication (Zackariasson and Wilson, 2004; Bell & Loane, 2010). Furthermore, the outcomes of this research are consistent with the studies of Rosson and Ford (1982); Bowersox and Cooper (1992) that argue, 'cybermediaries' on cloud in target market can emphasis on the performance of downstream marketing and activities for enhancing international performance in foreign market. Therefore, according to findings, the study discusses and argues the effectiveness of the following proposed solutions of the CCU (table-6.5) in mitigation of the EM-SMEs marketing barriers.

Table 6.5 - Marketing barriers and proposed the CCU solutions

Marketing Barriers in Internationalisation				
Barrier	**the EM-SMEs' Marketing Barriers**	**Proposed Solution**	**The potential impact of the CCU on Internationalisation Barriers (Solution)**	**Q. Code**
MB12	Difficulties in doing after-sales services in foreign market	S12	the CCU works as a main player in networking and in doing after-sales services in an organisation	Q14MARK
MB13	Immoderate transportation/insurance expenses	S13	Improving road safety, travel reliability, informed travel choices, and traffic resilience to moderate transport/insurance costs	Q19MARK
MB14	Linking with potential representatives in foreign market	S14	Capabilities in linking up with competent representatives	Q16MARK
MB15	Holding an effective surveillance upon intermediary in foreign market	S15	the CCU enhances direct networking and eliminates the intermediaries	Q20MARK
MB16	Setting proper promotional activities in foreign market	S16	Enable digital promotion through STP strategy (segmentation , targeting and positioning)	

MB17	Difficulty with distribution channels in foreign market	S17	Assisting to facilitate distribution channels in Foreign market	Q16MARK
MB18	Availability of proper distribution channels for exporting	S18	Strengthening the distribution channels by facilitating networking and communication	
MB19	Difficulties to supply the product continuously	S19	Enabling end–to-end in structure of supply chain	Q17MARK
MB20	Inaccessible warehousing in foreign market	S20	the CCU can assist SMEs to access proper information	Q18MARK
MB21	Offering reasonable finished-prices for consumers	S21	Ability of offering satisfactory prices to clients	Q15MARK
MB22	Difficulty to offer competitive prices	S22	Assisting to reduce the general costs of production in order to produce at a competitive price	
MB24	Adapting products complying with tastes and needs of foreign market	S24	Collecting analytical information, strengthening administration control, and supporting marketing	Q13MARK
MB25	Complying standards and quality based on international market criteria	S25	the CCU enabling an effective knowledge management that can lead to produce high quality products for niche market	
MB26	Other taste and orientation in foreign market	S26	Enabling to save up costs toward efficient niche production based on market needs	

6.2.4.1 The CCU effectiveness in facilitating after-sales services in foreign market

MB12-barrier refers to the EM-SMEs difficulties in doing after-sales services in foreign market. Due to limited human, financial resources, geographical distance and costly post sales services, many SMEs are not able to undertake after-sales services as this problem could barricade internationalisation (Leonidou, 2004; Czinkota and Ronkainen, 2001). The proposed solution of S12 is suggested that the CCU works as a main player in networking and this phenomenon facilitates the process of doing after-sales services for organisations. Therefore, the proposed solution S12 for the problem of MB12 was questioned by Q14MARK variable to find out whether the respondents could be assisted by various applications on their mobile phones, tablets and PCs in order to be facilitated relatively through email, networking, storing, data sharing, and audio-visual communications to prevail the difficulties in doing after-sales services in foreign market. The results of this research study show that the mitigated barriers by the CCU has a positive impact on

Q14MARK variable with path estimate of 0.754, t-value of 12.161 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S12 on mitigation of barrier MB12. Therefore, the results of this study are consistent with prior studies that argue SMEs are able to alleviate the costs of post sales services and to support their customers from large geographical distances in order to sustain their competitive advantages (Zackariasson and Wilson, 2004).

6.2.4.2 The CCU effectiveness in mitigation of transportation and insurance costs

MB13-barrier refers to the EM-SMEs difficulties, which are caused for immoderate transportation or insurance expenses. The long distance barricades exporting and the EM-SMEs internationalisation. Also this might cause added-expenses for likely delaying product-delivery and consequently other incremental transportation costs as well as affecting insurance costs relatively (Albaum, Strandskov, and Duerr 1998).

Therefore, the proposed solution of S13 is suggested that the CCU by providing efficient and instant information improves road safety, travel reliability, informed travel choices, and traffic resilience to moderate transport or insurance costs. Therefore, the proposed solution S13 for the problem of MB13 was questioned by Q19MARK variable to find out whether the respondents could be assisted relatively by various applications on their mobile phones, tablets and PCs by accessing clear information such as, weather condition, road and travel safety, environment protection, and traffic awareness, to experience lesser insurance and transportation costs. S13 is a proposed solution for the problem MB13 that was questioned by Q19MARK. The results found that the regression weight between the barrier mitigation by the CCU and Q19MARK has a little positive impact with path estimate of 0.151, t-value of 2.223 and a p-value of 0.026 as this item was deleted for the final CFA model. Consequently, the proposed solution of S13 for Barrier MB13 is rejected empirically by the study results. When the proposed solution of S13:"Improving road safety, travel reliability, informed travel choices, and traffic resilience to moderate transport/insurance costs;" has a little positive impact on mitigation of marketing barrier of MB13. Therefore findings of this research study show that the EM-SMEs has not yet got benefits relatively from the mentioned facilities in order to reduce their transportation and insurance costs. As in the prior studies of Bitam & Mellouk (2012) and Marston et al.

(2011) were expected and argued that the Intelligent Transportation System on cloud, (ITS-Cloud) can improve the distance transportation. Consequently, this facility affects the risk of transportation in the line with applying lower insurance costs; when SMEs by exploiting the CCU are able to reduce the executive transportation and insurance costs.

6.2.4.3 The CCU effectiveness in linking up with potential distribution-channels in foreign market

MB14-barrier refers to the EM-SMEs difficulties in linking with potential representatives in foreign market. One of the important challenges for SMEs is to find potential representatives and agents in the foreign market. Recognising and finding potential agents in the foreign markets is an essential for SMEs to facilitate themselves to internationalise constantly (Terpstra and Sarathy 2000; Leonidou 2004; Fillis, 2002; Da Silva and Da Rocha 2001; Crick 2002; Hornby et al. 2002; Julian and Ahmed 2005; Barnes et al. 2006; Neupert et al. 2006; A-Ortiz and F-Ortiz 2010). The proposed solution of S14 is suggested that the CCU provides the EM-SMEs to be linked up with competent representatives in the foreign markets. Therefore, the proposed solution S14 for the problem of MB14 was questioned by Q16MARK variable to find out whether the respondents could be assisted relatively by various applications on their mobile phones, tablets and PCs to utilise the powerful networking and convenient communication in CC in order to manage effectively their distribution channels in the target markets. Thus, the proposed solution of S14 'capabilities in linking up with competent representatives' by this study for the problem MB14 'linking with potential representatives in foreign market' that was questioned by Q16MARK. The results found that the regression weight between the barrier mitigation by the CCU and Q16MARK has an insignificant positive impact with path estimate of 0.53, t-value of 0.775 and a p-value of 0.438 as this item was deleted for the final CFA model. Consequently, the proposed solution of S13 for Barrier MB14 is rejected empirically by the study outcomes. Therefore, the findings are inconsistence with the prior study of Zackariasson and Wilson (2004) that argue the CCU could be considered as the main actor in networking in an organisation that enables firms to control their resources such as servers, storage, applications, networking and communication. This inconsistency could be searched by this fact that so far any application has not been developed or being used by the EM-SMEs to assist them systemically to link up constantly with their potential

representatives in the foreign markets through organised networking. as the EM-SMEs yet have not been able consistently to link up with their potential representatives in foreign market by means of the CCU.

6.2.4.4 The CCU effectiveness in enhancing direct control by eliminating intermediaries in foreign markets

MB15-barrier refers to the EM-SMEs difficulties in order to hold an effective surveillance upon their intermediaries in foreign markets. Leonidou (2004) argues that internationalisation of SMEs would be barricaded when the firms have not consistent communication with their intermediaries in the host countries. Therefore, this constraint will end up with lack of direct control in a foreign market. Moreover, setting up a constant communication with intermediaries would be costly and expensive for SMEs. Thus, the proposed solution of S15 is suggested that the CCU enables firms to establish a consistent direct communication with end users that can eliminate the intermediaries and enhance the direct control of SMEs in the foreign market. Therefore, the proposed solution S15 for the problem of MB15 was questioned by Q20MARK variable to find out whether the respondents could be assisted by various applications on their mobile phones, tablets and PCs in order to be facilitated relatively through setting out efficiently some promotional activities in foreign market by means of social networking applications with targeting right customers. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q20MARK variable with path estimate of 0.733, t-value of 12.469 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S15 on mitigation of barrier MB15. Therefore, the results of this study are consistent with prior studies of Bell & Loane (2010) that argue the CCU enables firms to be needless of any agents or intermediaries in the host markets, as it is widely accepted that the Internet with allied information and communication technologies facilitate SMEs internationalisation. In addition, the outcomes are inconsistence with the study of Pezderka et al. (2012) in which argues that Internet-based capabilities allow firms to avoid or reduce physical presence in a host markets, as this will enable them to enhance their internationalisation activities.

6.2.4.5 The CCU effectiveness in strategic STP analysis in foreign markets

MB16-barrier refers to the EM-SMEs difficulties in order to set up proper promotional activities in foreign market. Leonidou (2004) indicates to such different promotional activities in foreign-markets that can barricade SMEs internationalisation. Such as, differences in target market consumers structure, inappropriate meaning of advertising communication; inaccessibility of communication mix; limitations advertising. The proposed solution of S16 is suggested that the CCU enables the EM-SMEs to set up digital promotion by means of STP strategy (segmentation, targeting and positioning). Therefore, the proposed solution of S16 for the problem of MB15 was questioned by Q20MARK variable. This enables to find out whether the respondents are being facilitated relatively by using various applications on their mobile phones, tablets and PCs to collect data and to set out efficiently some promotional activities in the foreign market by means of social networking applications in targeting right customers. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q20MARK variable with path estimate of 0.733, t-value of 12.469 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S16 on mitigation of barrier MB16. Therefore, the results of this study are consistent with prior studies of Kim & Lee, (2015) and Kim, Kim, & Lee, (2011) that argue the CCU enables firms to collect useful information from target markets in order to classify customers' profiles in a strategic ways to target them more intelligently. In addition, the CCU enables firms to apply the strategic pull marketing method to assess the customers' behaviours towards their product and services in the target markets.

6.2.4.6 The CCU effectiveness in prevailing over the difficulties in distribution channels

MB17-barrier refers to the EM-SMEs difficulties with distribution channels in foreign markets. SMEs encounter many difficulties with distribution channels in different foreign markets, where they need to be adapted to various methods in idiosyncrasies of target markets (Terpstra and Sarathy, 2000; Leonidou, 2004). The proposed solution of S17 is suggested that the CCU assists to facilitate distribution channels in foreign market. Therefore, the proposed solution S17 for the problem of MB17 was questioned by Q16MARK variable to find out whether the respondents could be assisted relatively by

various applications on their mobile phones, tablets and PCs to utilise the powerful networking and convenient communication in CC in order to effectively manage their distribution channels in target markets. Therefore, S17 is the proposed solution for the problem MB17 that was questioned by Q16MARK. The results found that the regression weight between the barrier mitigation by the CCU and Q16MARK has an insignificant positive impact with path estimate of 0.053, t-value of 0.775 and a p-value of 0.438 as this item was deleted for the final CFA model. Consequently, the proposed solution of S17 for Barrier MB17 is rejected empirically by the study results. Therefore, outcomes of this research study show the findings are inconsistency with the prior studies of Cheng et al. (2014) and Kim, Kim, and Lee (2011) that discuss the electronic system of distribution provides some facilities for both customers and suppliers in order to communicate by means of CC and as a "bridge". Moreover, the CCU facilitates the transactions between customer and supplier more effectively than traditional communication. However the findings of this research reveal that the EM-SMEs have not yet been able to be assisted by any application that utilise this importance available by CC in distribution channels in foreign market.

6.2.4.7 The CCU **facilitation in networking and communication with distribution** channels

MB18-barrier refers to the EM-SMEs difficulties with availability of proper distribution channels for internationalisation. Handling a proper distribution channel in the foreign markets is a critical challenge for the prospects of SMEs' foreign market and this gets worse when the control of the SMEs' services/products could be taken by any host's distributor (Leonidou, 2004; Czinkota & Ronkainen, 2001). Therefore, the proposed solution of S18 is suggested that SMEs can strengthen the distribution channels by facilitating of networking and communication. Therefore, the proposed solution of S18 for the problem of MB18 was questioned by Q16MARK variable to find out whether the respondents could be assisted relatively by various applications on their mobile phones, tablets and PCs to be utilised by the powerful networking and convenient communication in CC in order to manage effectively their distribution channels in the target markets. Therefore, S18 is the proposed solution for the problem MB18 that was questioned by Q16MARK. The results found that the regression weight between the barrier mitigation by

the CCU and Q16MARK <u>has an insignificant positive impact</u> with path estimate of 0.053, t-value of 0.775 and a p-value of 0.438 as this item was deleted for the final CFA model. Consequently, the proposed solution of S18 for Barrier MB18 is rejected empirically by the study results. Therefore, findings of this research study show inconsistency with the prior studies of Li et al. (2012) and Mishra, Jain, and Durresi, (2012) that was expected that the CCU applications effectively could assist the EM-SMEs in foreign markets to manage their networking, communication and logistics. As this assistance comprises of transportation, warehousing, distribution, information feedbacks that are considered as a sophisticated process in demanding in real time with many departments involvement. As the EM-SMEs have not been yet able to be assisted by setting up a proper communication in foreign-market distribution channels.

6.2.4.8 The CCU effectiveness in facilitating end–to-end supply chain

MB19-barrier refers to the EM-SMEs difficulties with supplying the products continually. Regarding assertions of many SMEs, the shortage of products has direct correlation with the geographical distant of foreign market and any failures because of transportation delays, fluctuation in demands and unpredictable events could affect the reputation of firms (Hoejmose et al. 2014; Czinkota et al. 2014; Leonidou 2004). Therefore, the proposed solution of S18 is suggested that the CCU enables the EM-SMEs to structurize effectively their "end-to-end" supply chains in foreign markets. Therefore, the proposed solution of S19 for the problem of MB19 was questioned by Q17MARK variable to find out whether the respondents could be assisted relatively by the use of various applications in their mobile phones, tablets and PCs in order to be able to connect consistently with their representatives in the foreign markets. This importance can facilitate the EM-SMEs to foresee any deficit in their target markets. Therefore, S19 is the proposed solution for the problem MB19 that was questioned by Q17MARK. The results found that the regression weight between the barrier mitigation by the CCU and Q17MARK has <u>an insignificant negative impact</u> with path estimate of -0.069, t-value of -1.004 and a p-value of 0.315 as this item was deleted for the final CFA model. Consequently, the proposed solution of S19 for Barrier MB19 is rejected empirically by the study results. Therefore, findings of this research study are inconsistent with prior studies of Lindner et al. (2010) and Cheng et al. (2014) that argue the CCU enables SMEs to benefit from cloud supply-chain facility and

enable them to provide a network of interconnected businesses in the CC environment. This facility entails them to be encountered from an "end-to-end" supply chain management for their products and services for their customers. Therefore, the inconsistency with the findings of this study reveals that the EM-SMEs have not yet reach to that degree to get assisted by the CCU in order to structurise their "end-to-end" supply chain in their target markets more effectively.

6.2.4.9 The CCU effectiveness in accessing proper information about warehousing in target markets

MB20-barrier refers to the EM-SMEs difficulties for inaccessible warehousing in foreign markets. Due to high hiring-fees, unequipped places and/or covering large territorial foreign market could be turned to severe problems where SMEs are not able to find adequate and proper warehouses in some target markets (Cateora & Graham, 2001; Leonidou 2004). This problem may cause because of the lack of information to enable the SMEs to find appropriate warehouses in the target markets. The proposed solution of S20 is suggested that the CCU enables the EM-SMEs to access proper information for warehousing. Therefore, the proposed solution of S20 for the problem of MB20 was questioned by Q18MARK variable to find out whether the respondents could be assisted by various applications on their mobile phones, tablets and PCs in order to gain proper information for warehousing in the target markets. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q18MARK variable with path estimate of 0.633, t-value of 12.469 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S20 on mitigation of barrier MB20. Therefore, the results of this study are consistent with prior studies of Zackariasson & Wilson (2004) and Li et al. (2012) in which argue, the CCU enables firms to be logistically be active in host countries in terms of transportation, warehousing, distribution, informative and feedbacks. As these activities need to be handled with using of proper and efficient ubiquitous software and applications that need to be supported by IT systems in target markets.

6.2.4.10 The CCU effectiveness in offering reasonable finished-prices for consumers

MB21-barrier refers to the EM-SMEs difficulties in offering reasonable finished-prices for consumers. These difficulties make firms to offer the finished-prices of their goods /services more expensive than other competitors in the target market where the firms are not able to compete with the local or other competitors by providing reasonable finished-prices. Moreover, these difficulties can barricade the EM-SMEs to offer reasonable finished-prices in the foreign market. These barriers have been outlined in reasons such as producing in smaller units of production because of the lack of financial resources, overload export costs, packaging, overseas services, administrative costs, operational costs, transportation costs, taxes, tariffs, marketing and distribution costs in the foreign market (Tersptra and Sarathy 2000; Leonidou 2004). The proposed solution of S21 is suggested that the CCU enables the EM-SMEs to offer reasonable prices to clients. Therefore, the proposed solution of S21 for the problem of MB21 was questioned by Q15MARK variable to find out whether the respondents could be assisted by various applications on their mobile phones, tablets and PCs in order to produce cheaper products/services by reducing of the general export-costs. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q15MARK variable with path estimate of 0.705, t-value of 13.502 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S21 on the mitigation of barrier MB21. Therefore, the results of this study are consistent with prior studies of Armbrust et al. (2010); and Interoute (2012) in which discuss, due to model of '*pay-per-use model*', the CCU enables firms to reduce the cost of production towards offering reasonable finished-prices for the customers. When there would be no need for upfront payment fees, licence fees, installation hardware and software fees, expenses for maintenance, no need to hire expert labours.

6.2.4.11 The CCU effectiveness in mitigating general cost of productions towards offering competitive prices

MB22-barrier refers to the EM-SMEs difficulties in offering competitive prices. One of the serious difficulties for SMEs is to adjust with competitive prices and rivalry with other counterparts in foreign market. The heterogeneous conditions as mentioned in the literature can make the conformity of the competitive prices for SMEs more difficult (Leonidou

2004). However, the EM-SMEs by utilising CC are able to mitigate the general cost of production in order to produce products/services cheaper and maintain their competitive advantages in the target market. The proposed solution of S22 is suggested that the CCU enables the EM-SMEs to reduce the general productions-costs in order to produce at relatively competitive prices. Therefore, the proposed solution of S22 for the problem of MB22 was questioned by Q15MARK variable to find out whether the respondents could be assisted by various applications on their mobile phones, tablets and PCs in order to produce cheaper products or services by reducing of general costs. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q15MARK variable with path estimate of 0.705, t-value of 13.502 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S22 on mitigation of barrier MB22. Therefore, the results of this study are consistent with prior studies were conducted by Ogawa & Piller (2006); Bell and Loane (2010); Etro (2009); Mell and Granc (2011); Shivakumar and Raju (2010); Armbrust et al. (2010); that argue the utilisation of CC assist firms to reduce their general cost in order to produce at lower costs. In addition, this technology enables firms to get benefit from provisional substitute services that can eliminate the barriers entrance of all rivals towards a tighter economy. Moreover, the positive aspect of the CCU is to increase rivalry and consequently this leads to reduce the prices of production and services among other competitors. Furthermore, the CCU empowers entities to be substantially cost effective, and to be able to benefit from capabilities in marketing approaches to enhance their position in a speedy competitive awareness and delivery.

6.2.4.12 The CCU effectiveness in adapting products based on the needs of target markets

MB24-barrier refers to the EM-SMEs difficulties in adapting products complying with tastes and needs of foreign markets. Emphasising to adapt products based on the target markets' needs and requirements may lead to numerous problems for SMEs. These problems raise the cost of production per unit in terms of lesser scale of demands, and needs an efficient and effective managerial support to control the export activities in addition, this leads to undertake various marketing activities in the target market (Terpstra and Sarathy, 2000; Leonidou 2004). The proposed solution of S24 is suggested that the

CCU enables the EM-SMEs to collect analytical information, strengthening administration control, and better marketing support. Therefore, the proposed solution of S24 for the problem of MB24 was questioned by Q13MARK variable to find out whether the respondents could be assisted by various applications on their mobile phones, tablets and PCs to collect useful information from target markets in order to develop their product/service based on their needs. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q13MARK variable with path estimate of 0.659, t-value of 10.487 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S24 on mitigation of barrier MB24. Therefore, the results of this study are consistent with prior studies of Tapscott (2008); and Vodafone Australia (2008) that state firms directly can observe and evaluate the possible changes in their market needs and requirements. Moreover, the finding are constant with studies of Bell, J. & Loane, S. (2010); Ching & Ellis (2004) and Porter (2001) that argue, the CCU enables firms to resource and sell internationally as the greatest challenges for their developments in their internationalisation. When by increasing competition in international markets, the use of advanced Internet applications as an advanced competitive edge assists the enterprises to exploit many facilities in their international activities. Furthermore,the outcomes of this research study are consistent with prior studies of Blesa and Ripolla (2008) and Zhang et al. (2009) that argue, the CCU enables firms to pursue an efficient and successful marketing approaches in terms of acquiring superior knowledge in '*market-sensing*', '*customer-linking*', and '*channel-bonding*'.

6.2.4.13 The CCU effectiveness in facilitating firms based on standards of international market

MB25-barrier refers to the EM-SMEs difficulties to produce in conformity with standards and quality requirement based on international market criteria. Leonidou (2004) indicates to a series of mandatory rules and regulations that are essential for SMEs to follow in order to produce goods and services at national standards and at the minimum required-quality. Accordingly, conformity with the rules and regulations and the observance of needed standards in host countries would increase the costs of production for the firms. However, 'knowing how' to produce and knowledge management based on foreign markets' products' standard and quality could reduce relatively some costs of production for the

EM-SMEs. The proposed solution of S25 is suggested that the CCU enables the EM-SMEs to encounter of an effective knowledge management that can lead to produce high quality products for niche markets. Therefore, the proposed solution of S25 for the problem of MB25 was questioned by Q13MARK variable to find out whether the respondents could be assisted by various applications on their mobile phones, tablets and PCs to collect useful information from target markets in order to develop their product/service based on their needs and requirements. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q13MARK variable with path estimate of 0.659, t-value of 10.487 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S25 on mitigation of barrier MB25. Therefore, the results of this study are consistent with prior studies of Pérez-López and Alegre (2012) that argue the competency in information technology such a Cloud computing leads to knowledge management processes and directly affects the market performance. In addition, the findings are consistent with the prior studies in which argue that knowledge management processes contribute to product quality and new product development (Ho 2009; Pérez-López and Alegre, 2012). Therefore, by utilising CC, the EM-SMEs will be encountered by some effective knowledge-based facilities that will lead firms to know how appropriate use knowledge in order to improve their productivity, creativity and sustainability in the market performance. Consequently, the CCU enables firms to benefit from based knowledge that enable them to produce and develop qualified and standard products. (Lin and Kuo, 2007; Cavusgil and Knight, 2009; Pérez-López and Alegre, 2012)

6.2.4.14 The CCU effectiveness in facilitating firms based on international market needs

MB26-barrier refers to the EM-SMEs difficulties in meeting the needs of other taste and orientation in foreign market. These difficulties in foreign markets can be found in various customers' habits and orientation that lead to various product preferences, using of different patterns, applying different distribution systems, diverse price settings and various methods of communications (Cateora and Graham 2001; Leonidou 2004). The proposed solution of S26 is suggested that the CCU enables the EM-SMEs to save up their costs toward focusing on efficient niche productions, which are based on market needs. Therefore, the proposed solution of S26 for the problem of MB26 was questioned by

Q13MARK variable to find out whether the respondents could be assisted by various applications on their mobile phones, tablets and PCs to collect useful information from target markets in order to develop their product/service based on their needs and requirements. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q13MARK variable with path estimate of 0.659, t-value of 10.487 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S26 on mitigation of barrier MB26. Therefore, the results of this study are consistent with prior studies that argue the CCU enables firms significantly mitigate the level of costs for hiring more employees (Forrest 2009; West, 2010). This capability enables SMEs to invest more on the preferences of niche-market products. In addition, applications such as Google Analytics, search engines and social networks, can track visitors and all referrers by pull marketing. It also tracks display advertising, pay-per-click networks, email marketing and digital collateral such as links within PDF documents (Marston et al., 2011) in order to collect some valuable information based on the taste and orientation in foreign market.

6.2.5 Environmental Barriers

According to literature review, environmental barriers refer to those barriers that hinder the EM-SMEs' internationalisation because of any turbulence and insufficiencies in home and target market (Da Rocha et al., 2008; Köksal and Kettaneh, 2011; Korneliussen and Blasius, 2008; Milanzi, 2012; Altintaset al., 2007; Dean et al., 2000; Altintaset al., 2007; Pinho and Martins, 2010; Shaw and Darroch, 2004; Yannopoulos and Kefalaki, 2010; Jones, Fallon & Golov, 2000; Bekaert and Harvey, 2003). The results of this study found that the utilisation of cloud computing (CCUInte) has a significant positive impact on Environmental Barriers (EB) with path estimate of 0.502, t-value of 3.339 and a significant p-value of ≤ 0.05 and consequently hypothesis (H_4) is supported. Therefore, the results of this study are consistent with the prior study of Iovan and Daian (2013) that argues the CCU can provide suitable facility for the firms in a dynamical environment in order to enable them to get benefit from an instant process in economical-technology development by skipping intermediate stages over the weaknesses. Moreover, the findings also are consistent with the mentioned-study that justifies the CCU leads firms to mitigate barriers, which are caused by less efficiency and costs in the environments. In addition, the findings

are also consistent with the prior studies of Armbrust et al. (2010) that discusses the CCU enables firms to maintain their competitive advantages as in other former study Taylor et al. (2010) argue the CCU mitigates the barriers which are caused environmentally by intricate rules and regulations and/or turbulence in economic environment. Therefore, according to findings, the study discusses and argues the effectiveness of the following proposed solutions of the CCU (table-6.6) in mitigation of the EM-SMEs environmental barriers.

Table 6.6 - Environmental Barriers and proposed the CCU solutions

Environmental Barriers in Internationalisation				
Barrier	**the EM-SMEs' Environmental Barriers**	**Proposed Solution**	**The potential impact of the CCU on Internationalisation Barriers (Solution)**	**Q. Code**
EB27	Instability in currency exchange	S27	Instant and up-to-date currency exchange information	Q22EN
EB28	Psychic distance in business practices, sociocultural & language	S28	Geocentric facilitation of the CCU to adapt language and normative practice	Q24EN
EB29	Rigorous rules and regulation in host countries	S29	Enabling firms to operate beyond hosts' jurisdictions	Q23EN
EB30	Undesirable regulations in home country	S30	Enabling firms to operate beyond home's jurisdictions	Q25EN
EB31	Absence of government incentives in home country	S31	Enabling an instant process in technology development by skipping intermediate stages	
EB32	Political turmoil in foreign market	S32	Enabling business activities flow on cloud beyond any political instability	Q23EN
EB33	Bad/Worsening economic condition in foreign market	S33	Efficient capability in alleviating costs and proposing of financial facilitation for end users e.g. "pay-per-use model"	Q22EN

6.2.5.1 The CCU effectiveness in facilitating firms to be updated regarding exchange rate currencies fluctuations

EB27-barrier refers to the EM-SMEs difficulties in assessing and making decision because of the instability in currency exchange in foreign markets. The CCU provides a proportionate facility for SMEs in order to be enabled of being aware of up-to-minute

information about any exchange in exchange rates. This facility could help SMEs to have better calculation for their instant or final decisions. Moreover, SMEs would be able to have faster reaction towards any possible or some predictable changes in exchange rate through electronically payment, rather than slow bureaucratic payments. Such secured methods of online standard payment via Visa, MasterCard, and or new online methods as PayPal, Google Wallet, Bit Coins (Research and Markets 2013). The proposed solution of S27 is suggested that the CCU enables the EM-SMEs to encounter instant and up-to-date currency exchange information for better manoeuvre in host countries. Therefore, the proposed solution of S27 for the problem of EB27 was questioned by Q22EN variable to find out whether the respondents could be facilitated by various applications on their mobile phones, tablets and PCs for being needless of having physical presence in foreign market as any economic turmoil in foreign market has least effect on the business losses. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q22EN variable with path estimate of 0.805, t-value of 9.967 and a significant p-value of $\leq$0.05. Consequently, the study results support empirically the significant impact of proposed solution of S27 on mitigation of barrier EB27. Therefore, the results of this study are consistent with prior studies that argue the CCU enables the EM-SMEs, to set out their businesses upon digital banking when they can have faster reaction towards any possible or predictable changes in exchange rate through electronically payment, rather than slow bureaucratic payments. Such secured methods of online standard payment via Visa, MasterCard, and or new online methods as PayPal, Google Wallet, Bit Coins (Research a& Markets, 2013).

6.2.5.2 Geocentric facilitation of the CCU to adapt language and normative practice

EB28-barrier refers to the EM-SMEs difficulties in psychic distance in business practices /Sociocultural & language of target markets. Dikova (2009) argues that psychic distance occurs because of differences in local consumer distinctions, business practices and culture between home and foreign market. The consequence of these differences reduces the level of awareness of the foreign market conditions as SMEs encounter difficulties in order to use different business practices across countries. The proposed solution of S28 is suggested that the CCU enables to accumulate information from social networking, manages to be more geocentric and adapts to any language. Therefore, the proposed solution of S28 for

the problem of EB28 was questioned by Q24EN variable to find out whether the respondents could be facilitated by the CCU to design their company's website based on the target markets languages and relevant practice norms. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q24EN variable with path estimate of 0.700, t-value of 8.938 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S28 on mitigation of barrier EB28. Therefore, the results of this study are consistent with prior studies of Persinger et al. (2007) that argue the CCU enables the EM-SMEs to mitigate the psychic distance in their business practice. The CCU enables firms to set up their own social media and business networks. As well as this approach could help them to collect more information from target markets, that will be useful for benchmarking the condition of market, existence of possible opportunities and cultural factors that needs to be considered. As these powerful knowledge allow the EM-SMEs to overcome any limitation, which has been caused by the lack of information in the target markets towards reducing their psychic distance with the target market.

6.2.5.3 The CCU effectiveness in facilitating firms to operate beyond host's jurisdictions

EB29-barrier refers to the EM-SMEs difficulties with rigorous rules and regulation in host countries. These rigorous rules and regulation would affect the flow of commodity entrance, the control of prices, imposing more taxes on imports and also the exchange rate (Cateora and Graham 2001; Jones, Fallon and Golov, 2000; Dcruz and Hameed , 2012). Therefore, the proposed solution of S29 is suggested that the CCU enables the EM-SMEs to be operated beyond hosts' jurisdictions where they can be kept safe from any difficulties caused by host market rigorous rules and regulation. Therefore, S29 is the proposed solution for the problem of EB29 that was questioned by Q23EN. The results found that the regression weight between the barrier mitigation by the CCU and Q23EN has <u>an insignificant positive impact</u> with path estimate of 0.063, t-value of 0.910 and a p-value of 0.363 as this item was deleted for the final CFA model. Consequently, the proposed solution of S29 for Barrier EB29 is rejected empirically by the study results.

Therefore, the findings of this research study show inconsistency with prior study of Taylor, et al. (2010) in which was expected that the CCU enables SMEs to maintain their activities beyond hosts' jurisdictions and any changes in the foreign market's rules and regulations would have least effect on the sales of those firms in the format of born globals. Moreover, these findings are inconstant with the argument of 'it would be potentially more difficult for host countries to obtain a digital evidence same as traditional server-based systems in order to impose their rules and regulations on businesses operate on CC systems' (Taylor, et al. 2010).

6.2.5.4 The CCU effectiveness in facilitating firms to operate beyond home's jurisdictions

EB30-barrier refers to the EM-SMEs difficulties in undesirable regulations in home country. Any constraint and limitation in in-home in regards of rules and regulation to develop technical infrastructure could hinder the SMEs internationalisation (Jones, Fallon and Golov, 2000; Dcruz and Hameed , 2012). The proposed solution of S30 is suggested that the CCU enables the EM-SMEs to operate beyond home's jurisdictions. Therefore, the proposed solution of S30 for the problem of EB30 was questioned by Q25EN variable to find out whether the respondents would be facilitated by the CCU to mitigate the lack of technical supports from government side by using useful applications in cloud computing environment. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q25EN variable with path estimate of 0.817, t-value of 10.006 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S30 on mitigation of barrier EB30. Therefore, the results of this study are consistent with the prior study of Taylor, et al. (2010) that argues the CCU enables firms to maintain their business activities beyond the hosts' jurisdictions. The EM-SMEs by utilising CC are able to disseminate their businesses borderless and globally. Moreover, the CCU enables the EM-SMEs to be active beyond the boundaries, and any limitation because of home's rules and regulations or technical infrastructures have least impact on firm business activities.

6.2.5.5 The CCU effectiveness in bypassing home's deficiencies in hard and soft infrastructures

EB31-barrier refers to the EM-SMEs difficulties in absence of government incentives (soft) in home country. Government bodies can mainly stimulate the export activity by encouraging incentives such as providing proper infrastructure (hard), assigning loans, subsidising, sponsoring and publishing data related to markets status (Leonidou 2004; Albaum, Strandskov, and Duerr1998).The proposed solution of S31 is suggested that the CCU enables the EM-SMEs to encounter from an instant process in technology development by skipping intermediate stages. Therefore, the proposed solution of S31 for the problem of EB31 was questioned by Q31EN variable to find out whether the respondents would be facilitated by the CCU to mitigate the lack of technical supports from government side by using useful applications in the cloud-computing environment. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q25EN variable with path estimate of 0.817, t-value of 10.006 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S31 on mitigation of barrier EB31. Therefore, the results of this study are consistent with prior study of Iovan & Daian, (2013) that argue the EM-SMEs would not be able to expand internationally without receiving any particular governmental incentives, supports and proper infrastructures.

6.2.5.6 The CCU effectiveness in facilitating firms to operate beyond hosts' political status

EB32-barrier refers to the EM-SMEs difficulties with any political turmoil in foreign market. Government, political and social instability are considered as serious threats for the SMEs' internationalisation. The SMEs' export-activities also any type of foreign investment can be jeopardised by any turmoil in political stability in foreign markets (Busse & Hefeker, 2007; Jones, Fallon and Golov, 2000; Bekaert and Harvey, 2003). Therefore, the proposed solution of S32 is suggested that the CCU makes business being operated on the clouds and beyond any political instability. Therefore, the proposed solution of S32 is suggested for the problem EB32 that was questioned by Q23EN. The results found that the regression weight between the barrier mitigation by the CCU and Q23EN has an insignificant positive impact with path estimate of 0.063, t-value of 0.910 and a p-value of 0.363 as this item was deleted for the final CFA model. Consequently, the

proposed solution of S32 for Barrier EB32 is rejected empirically by the study results. Therefore, findings of this research study are inconsistent with prior study of Taylor, et al. (2010) that expects the CCU enables the EM-SMEs to maintain their activities beyond the hosts' political jurisdictions, and any change in the foreign market due to political instability would have least effect on businesses on clouds. Therefore, the outcome of this study emphasises that the EM-SMEs need to be complied with the host markets rules and regulations, when they need to be active in these markets.

6.2.5.7 The CCU effectiveness in facilitating firms to operate beyond hosts' economic status

EB33-barrier refers to the EM-SMEs' difficulties that arise by getting bad and worsening economic condition in foreign market. Rather often SMEs have many difficulties in emerging markets where some failure can be caused by high inflation rate, instability in market and periodical rise of unemployment (Jones, Fallon and Golov, 2000). Consequently, these situations compel the EM-SMEs to produce cheaper products that are more economical for the users in these markets (Leonardo 2004; Dcruz and Hameed, 2012). The proposed solution of S33 is suggested that the CCU capabilities make the EM-SMEs being efficient in alleviating general costs and proposing of better financial facilitation for end users. Therefore, the proposed solution of S33 for the problem of EB33 was questioned by Q22EN variable to find out whether the respondents could be facilitated by various applications on their mobile phones, tablets and PCs for being needless of having physical presence in foreign market as any economic turmoil in foreign market has least effect on the business losses. The results of this research study show that the mitigated barriers by the CCU has a positive impact on Q22EN variable with path estimate of 0.805, t-value of 9.967 and a significant p-value of ≤ 0.05. Consequently, the study results support empirically the significant impact of proposed solution of S33 on mitigation of barrier EB33. Therefore, the results of the research are consistent with prior studies that argue the CCU enables firms to be encountered from saving the general cost (Armbrust et al., 2010). Ultimately, the EM-SMEs are able to enhance their competitive advantages in both marketing mix, and communication mix in the target markets by reducing the general cost of production. Consequently, by enhancing the competitive advantages; these companies are able to maintain their sustainability in international markets beyond any turmoil in the host's market.

6.3 Research Question Testing

According to literature review, accelerated internationalisation refers to any approach in which by lifting barriers leads to seed up the trend of internationalisation (the core study of this research). The results of this study found that the mitigated barriers by the CCU has a significant positive impact on Accelerated Internationalisation (AI) with path estimate of 0.811, t-value of 8.653 and a significant p-value of ≤ 0.05 and consequently hypothesis (H_5) is supported. Therefore, the results of this study are consistent with prior studies that argue the CCU enables firms to mitigate the informational barriers (Pérez-López, and Alegre 2012) when the CCU enables firms to refine and analyse for selecting appropriate data (Villars, Olofson, & Eastwood, 2011), empowers firms to be capable of being aware of business opportunities in foreign markets (Iovan & Daian, 2013). In addition, the outcomes of this research reveal that the findings are consistence with prior studies in which argue that the CCU can mitigate operational barriers. These studies argue that firms are able to leapfrog the intermediate computing architecture in emerging markets where these firms need more experts and employees for the installation, operation, trouble-shooting, maintenance, and upgrading (Tsoa, 2008; Ensley, 2005; Throng, 2010). Thus, firms enhance their operational abilities and capabilities in those markets that suffer because of lack of intermediate computing- infrastructures. Consequently, the CCU enables firms to transform Capex to Opex, when the capital expenditures such as fixed assets transform into throughput or operating expenditure such as sales, general and administrative expenses (Armbrust et al., 2010). In the line with this concept, the findings of this study prove that firms in their operational production are able to exploit more effectively their resources (Carroll et al., 2011).

Moreover, the outcomes of this research show that the findings are consistence with prior studies in which argue that the CCU mitigates marketing barriers. Therefore, the results of this study are consistent with prior studies that argue the CCU empowers firms to enhance marketing capabilities through their networking and communication (Zackariasson and Wilson, 2004; Bell & Loane, 2010). In addition, the outcomes of this research are consistent with the studies of Rosson and Ford (1982); Bowersox and Cooper (1992) that argue, 'cybermediaries' on cloud in target market can emphasis on the performance of downstream marketing and activities for enhancing international performance in foreign market.

Furthermore, the outcomes of this study are consistence with prior studies in which argue that the CCU mitigates environmental barriers. Iovan and Daian, (2013) indicate to the CCU facilitates firms towards a dynamical environment in order to assist them to have instant process in economical-technology development by skipping intermediate stages over weaknesses in the environments by rendering efficiency and lower costs. In addition, the findings of this research prove the prior studies that indicate the CCU mitigate the environmental barriers because of less efficient, and costly environments (Iovan & Daian, 2013) complicated rules and regulations (Taylor, et al. 2010) and economic turmoil in foreign markets through obtaining the competitive advantages (Armbrust et al., 2010). Consequently, by mitigation of informational, operational, marketing and environmental barriers firms are able to lift up the internationalisation barriers towards Accelerated Internationalisation (AI). Therefore, according to findings, the study discusses and argues the effectiveness of the mitigated barriers by the CCU (table-6.7) leads to acceleration of the EM-SMEs internationalisation. In addition, further to verification of positive and significant impact Mitigated Barriers by the CCU to Accelerated internationalisation by AMOS path estimate; this research study surveys the participants by solution of S23 through two questions of Q26AI and Q27AI as it mentioned in table 6.7 and discussed as follow.

Table 6.7 - Accelerated Internationalisation and proposed the CCU solutions

Accelerated Internationalisation				
Barrier Variable	**the EM-SMEs' and Barriers for speedy internationalisation (Problem)**	**Proposed Solution**	**The potential impact of the CCU on Internationalisation Barriers (Solution)**	**Q. Code**
AI1	Existence of rigorous competition in foreign market	S23	Enabling SMEs to internationalise more quickly and effectively	Q26AI
				Q27AI

Utilising the effectiveness of CC to facilitate firms to internationalise more quickly and effectively;

This is a proposed solution of S23 (the CCU enables the EM-SMEs to internationalise more quickly and effectively) for problem AI1 (Existence of rigorous competition in foreign market), was questioned by Q26AI and Q27AI. Q26AI refers to survey question to

find out whether the respondents are being facilitated by various applications connected to internet by means of mobile phones, tablets and PCs in order to alleviate the barriers in foreign markets to speed up their trend of internationalisation. In addition, Q27AI refers to survey question to find out whether the respondents are being facilitated by various applications connected to internet by means of mobile phones, tablets and PCs in order to develop and progress more quickly in international business activities. The results of this research study show that the regression weight of Accelerated Internationalisation by the CCU is a positive significant on Q26AI variable with path estimate of 0.685, t-value of 9.225 and a significant p-value of ≤ 0.05. In addition, the regression weight of Accelerated Internationalisation by the CCU is a positive significant on Q27AI variable with path estimate of 0.816, t-value of 9.225 and a significant p-value of ≤ 0.05. Furthermore, The results of this study found that the mitigated barriers by the CCU has a significant positive impact on Accelerated Internationalisation (AI) with path estimate of 0.811, t-value of 8.653 and a significant p-value of ≤ 0.05 and consequently hypothesis (H_5) is supported. Consequently, the study results support empirically the significant impact of proposed solution of S33 on mitigation of barrier EB33. Therefore, the results of this study argue that the CCU can lead the EM-SMEs to Accelerated Internationalisation by mitigation of internationalisation barriers.

6.4 Conclusion

The results of hypotheses have been discussed in this chapter, thereafter, the findings have been highlighted and assessed the significant impact of the CCU on the EM-SMEs' 'informational', 'operational', 'marketing' and 'environmental' barriers for an accelerated internationalisation. In addition, the study overviewed the research hypotheses and discussed the findings for each hypothesis along with providing a comprehensive solution for each barrier that are identified in the literature. Moreover, the significance of the CCU effectiveness to mitigate internationalisation barriers For the EM-SMEs towards their accelerated internationalisation became disclosed and clear.

Despite the proven effectiveness of the CCU in the mitigation of internationalisation barriers, the results of this research unfold that some of the provided solutions were not significant to mitigate the barriers. Once, the results of this study show, the regression weight between the CCU barrier mitigation and the items of Q7OPER, Q9OPER,

Q16MARK, Q17MARK, Q19MARK, Q23EN <u>have not</u> significant impact consequently these items were removed for the final CFA model. The reasons for these insignificant outcomes could be justified as follow:

Item Q7OPER is designed to elicit data from the respondents to examine whether or not the solution in which proposes that 'the CCU enables SMEs to be more business-focused for their productions' (Marston et al., 2011; Kynetix, 2009; Aljabre, 2012; Armbrust et al., 2010; Geczy et al., 2012; Iyer and Henderson, 2010; Luoma and Nyberg, 2011; Yang and Tate, 2009; Carroll et al., 2011) is significant for the barriers mitigation of 'insufficient production capacity of SMEs for exporting' (Leonidou 1995, 2004; Peel and Eckart 1996; Morgan and Katsikeas, 1998; Dean et al., 2000; Crick 2002; Fllis 2002; Suarez-Ortega 2003; Julian and Ahmed 2005; Da Rocha et al. 2008; A-Ortiz and F-Ortiz 2010).

The proposed solution for the mentioned barrier is rejected empirically by the study. Thus, the results of this study are inconsistency with the prior studies in which was expected that the EM-SMEs with utilising of CC could effectively and efficiently exploit their resources and consequently are being able to be more business focused in productions (Carroll et al. 2011). Moreover, the outcomes of this study show inconsistency with other prior studies in which argues if organisations by utilising CC could be able to downsize their IT departments, they would be able to decrease their. As Forrest (2009) argued that firms could save up 15% on labour costs by moving to the cloud and because of the saving in costs. Although earlier studies show the capabilities of the CCU for decreasing general costs in benefit of maximising production but it can be inferred that the EM-SMEs managers still need skilled expertise in IT for their organisations and consequently it seems this solution does not end up to enhance their productions. Item Q9OPER is designed to elicit data from respondents to examine the solution that proposes that 'the CCU enables information to be provided officially and the authorities may even explicitly offer cloud services to the public' (Brian et al., 2012; Müller et al., 2011). whether or not this is significant for the barriers mitigation of 'Unfamiliarity with paperwork and export procedure' (Dean et al. 2000; Leonidou 2000, 2004; Crick 2002; Fllis 2002; Suarez-Ortega 2003; Julian and Ahmed 2005; Barnes et al. 2006; A-Ortiz and F-Ortiz 2010) and 'Unfamiliarity with foreign law' (Leonidou, 1995; Dean et al., 2000; Leonidou, 2004;

Neupert et al., 2006). The proposed solution for the mentioned barrier is rejected empirically by the study. Thus, the results of this study are inconsistent with the prior studies by Brian et al, (2012) and Müller et al. (2011) in which were expected that the EM-SMEs can be accessed to the useful information and being informed officially with local and host governments through utilising of CC capabilities in order to support and manage their firms more effectively. As outcomes of this research study show that, the mentioned effective use of cloud computing capabilities have not been yet applied in the context of this research study. Once, the governments in the contexts of this research study have not yet provided effective infrastructures for the firms in terms of managing and supporting the public to get informed with paperwork-procedures and efficient information in regards of foreign business.

Item Q16MARK is designed to elicit data from the respondents to examine the solutions that propose 'Assisting to facilitate distribution channels in Foreign market' (Cheng et al., 2014; Find, 2011) and 'Strengthening the distribution channels by facilitating networking and communication' (Knight and Cavusgil, 2004) whether or not are significant for the barriers mitigation of 'Difficulty with distribution channels in foreign market' (Leonidou 1995, 2000, 2004; Peel and Eckart 1996; Ramaseshan and Soutar, 1996; Bennett, 1997; Karagozoglu and Lindell, 1998; Tesar and Moini, 1998; Dean et al., 2000; Da Silva and Da Rocha, 2001; Crick 2002; Fllis 2002; Hornby et al., 2002; Julian and Ahmed, 2005; Barnes et al., 2006; Neupert et al., 2006; A-Ortiz and F-Ortiz, 2010) and 'Availability of proper distribution channels for exporting' (Shoham and Albaum, 1995; Campbell, 1996; Kwon and Hu, 1996; Bell, 1997; Morgan and Katsikeas, 1998; Dean et al., 2000; Da Silva and Da Rocha 2001; Leonidou 2004; A-Ortiz and F-Ortiz 2010).

The proposed solutions for the mentioned barriers are rejected empirically by the study. Thus, the results of this study are inconsistent with the prior studies in which were expected that the EM-SMEs will be able to link up with their potential representatives in foreign market by means of CC and will be assisted by the applications in distribution channels in foreign market. As outcomes of this research study show that, the mentioned effective use of cloud computing capabilities have not been yet applied by the firms in the context of this research study. In addition, CC enables firms to benefit from managing their

networking, logistics and communications therefore it can be inferred that the CCU can facilitate firms in transportation, warehousing, distribution, information feedback. However, the findings of this research study shows the CSPs have not provided useful application to support systematically the EM-SMEs and this finding emphasises that with applying proper applications firms are able to be effective in their foreign distribution channels.

Item Q17MARK is designed to elicit data from the respondents to examine the solution that proposes 'Enabling end–to-end in structure of supply chain' (Lindner et al 2010; Cheng et al. 2014) whether or not is significant for the barriers mitigation of 'Difficulties to supply the product continuously' (Leonidou 2004).

The proposed solutions for the mentioned barriers are rejected empirically by the study. Thus, the results of this study are inconsistent with the prior studies in which were expected that the EM-SMEs will be able to get benefits from the cloud supply chain that facilitate a network of interconnected businesses in CC environment that entails "end-to-end" supplying chain for the firms. The outcomes of this study emphasis that firms in emerging market has not yet being able to use a systematic approach by use of CC that assist them to be encountered from 'end-to-end' supplying of product and services Lindner et al 2010; Cheng et al. 2014). Moreover, this finding can help the CSPs to provide applications in order enable the EM-SMEs to get facilitated by this importance.

Item Q19MARK is designed to elicit data from the respondents to examine the solution that proposes 'improving road safety, travel reliability, informed travel choices, and traffic resilience to moderate transport/insurance costs' (Marston et al., 2011; Bitam & Mellouk, 2012) whether or not is significant for the barrier mitigation of 'Immoderate transportation/insurance expenses' (Katsikeas and Morgan, 1994; Ramaseshan and Soutar, 1996; Bennett, 1997; Morgan and Katsikeas, 1998; Dean et al., 2000; Da Silva and Da Rocha, 2001; Crick, 2002; Hornby et al., 2002; Suarez-Ortega, 2003; Leonidou, 2004; Shaw and Darroch, 2004; Julian and Ahmed, 2005; Da Rocha et al., 2008; A-Ortiz and F-Ortiz, 2010; Leonidou, 2004).

The proposed solutions for the mentioned barriers are rejected empirically by the study. Thus, the results of this study are inconsistent with the prior studies in which were expected that the EM-SMEs will be able to get benefits from the cloud applications in which can facilitate firms to assess road safety, travel reliability, informed travel choices, and traffic resilience to moderate their transport and insurance costs. Once obtaining the mentioned knowledge can improve firms' choices to opt better route and transportation with reasonable insurance premiums. Therefore, the outcome of this study emphasises this fact that CSPs can produce a relevant applications for the EM-SMEs to enable them to compare the different insurance premium prices along with proposing safest route for transportation.

Item Q23EN is designed to elicit data from the respondents to examine the solutions that propose 'enabling firms to operate beyond hosts' jurisdictions' and 'enabling business activities flow on cloud beyond any political instability' (Taylor, et al. 2010) whether or not are significant for the mitigation of barriers of 'rigorous rules and regulation in host countries' (Shoham and Albaum 1995; Peel and Eckart 1996; Ramaseshan and Soutar 1996; Jensen and Davis 1998; Morgan and Katsikeas 1998; Dean et al., 2000; Leonidou 2000, 2004; Crick 2002; Patterson 2004; Shaw and Darroch 2004; Da Rocha et al. 2008; Korneliussen and Blasius 2008; Pinho and Martins 2010; Jones, Fallon and Golov, 2000) and 'Political turmoil in foreign market'(Terpstra and Sarathy 2000; Leonidou 2004; Jones, Fallon and Golov, 2000).

The proposed solutions for the mentioned barriers are rejected empirically by the study. Thus, the results of this study are inconsistent with the prior studies in which were expected that the EM-SMEs will be able to get benefits from the environment far from the host's jurisdiction. As this study proves that all the applications, which are designed for the host markets, need to be matched and complied with the host's jurisdiction. In addition, the findings of this research study prove that any political turmoil in the host country can directly affect the business on the clouds and it cannot be supposed that business activities will be immune on the clouds beyond any political instability in the host market.

The research question was discussed in this chapter as the findings supported the significance of the CCU on mitigation of internationalisation barriers for the EM-SMEs. Table 6.8 shows the supported and rejected results for each proposed solution of the CCU for each barriers of the EM-SMEs' internationalisation.

It is noteworthy to highlight this fact that advanced ICTs technologies like CC have achieved many advantages for their appliers in terms of reaching markets in a timely, relevant, interactive, and cost-effective manner. Moreover, 5Ss of sell, serve, save, speak, and sizzle (smith and chaffy 2001; Smith and Taylor 2002) are considered as the efficiency of digital marketing when the rejection of some of these proposed solutions should not be remarked as the failures of the CCU. This technology needs to be work with proper infrastructures, the span of digital banking, adequate broadband speed and availability of proper applications to support the EM-SMEs international activities.

Table 6.8 - Results of the proposed the CCU solutions for the research study

Barrier	Internationalisation Barriers	Solution	the CCU solutions for internationalisation Barriers	Results
IB01	Inadequate data to place and analyse for target market	S1	Evoking and sorting useful data stored in Cloud by search engines technologies	Supported
IB02	Uncertain, misleading and timely data in foreign market	S2	Accessing to appropriate data through foreign official websites stored on cloud	Supported
IB03	Identifying opportunities in foreign markets	S3	Conducting convenient research for business opportunities through official agents websites	Supported
IB04	Weakness of identifying and communicating with potential overseas customers	S4	Ubiquitous, convenient and on-demand networking to communicate with potential customers;	Supported
OB05	Insufficient managerial time to manage exporting	S5	the CCU assists managers to save up time in order to export	Supported
OB06	Insufficient skilful personnel for exporting	S6	the CCU leads SMEs to add up skilful employees in export by reducing IT personnel	Rejected
OB07	Insufficient production capacity for exporting	S7	the CCU enables SMEs to be more business focused for their productions	Rejected
OB08	Insufficiency in finance for exporting	S8	Assisting to mitigate costs effectively	Supported
OB09	Unfamiliarity with paperwork and export procedure / Unfamiliarity with foreign laws	S9	the CCU enables information being provided officially and the authorities may even explicitly offer cloud services to the public	Rejected
OB 10	Difficulty in communication with customers in foreign market	S10	Establishing mass media and interpersonal communication channels	Supported
OB11	Difficulty in fast collecting debts from the customers	S11	Prevalence of new methods in electronic transaction by the CCU	Supported
MB12	Difficulties in doing after-sales services in foreign market	S12	the CCU works as a main player in networking and in doing after-sales services in an organisation	Supported
MB13	Immoderate transportation/insurance expenses	S13	Improving road safety, travel reliability, informed travel choices, and traffic resilience to moderate transport/insurance costs	Rejected
MB14	Linking with potential representatives in foreign market	S14	Capabilities in linking up with competent representatives	Rejected

MB15	Holding an effective surveillance upon intermediary in foreign market	S15	the CCU enhances direct networking and eliminates the intermediaries	Supported
MB16	Setting proper promotional activities in foreign market	S16	Enable digital promotion through STP strategy (segmentation, Targeting and positioning)	Supported
MB17	Difficulty with distribution channels in foreign market	S17	Assisting to facilitate distribution channels in Foreign Market	Rejected
MB18	Availability of proper distribution channels for exporting	S18	Strengthening the distribution channels by facilitating networking and communication	Rejected
MB19	Difficulties to supply the product continuously	S19	Enabling end–to-end in structure of supply chain	Rejected
MB20	Inaccessible warehousing in foreign market	S20	the CCU can assist SMEs to access proper information	Supported
MB21	Offering reasonable finished-prices for consumers	S21	Ability of offering satisfactory prices to clients	Supported
MB22	Difficulty to offer competitive prices	S22	Assisting to reduce the general costs of production in order to produce at a competitive price	Supported
MB24	Adapting products complying with tastes and needs of foreign market	S24	Collecting analytical information, strengthening administration control, and supporting marketing	Supported
MB25	complying standards and quality based on international market criteria	S25	the CCU enabling an effective knowledge management that can lead to produce high quality products for niche market	Supported
MB26	Other taste and orientation in foreign market	S26	Enabling to save up costs toward efficient niche production based on market needs	Supported
EB27	Instability in currency exchange	S27	Instant and up-to-date currency exchange information	Supported
EB28	Psychic distance in business practices,	S28	Geocentric facilitation of the CCU to adapt language and normative practice	Supported
	Psychic distance in sociocultural & language			Supported
EB29	Rigorous rules and regulation in host countries	S29	Enabling firms to operate beyond hosts' jurisdictions	Rejected
EB30	Undesirable regulations in home country	S30	Enabling firms to operate beyond home's jurisdictions	Supported
EB31	Absence of government incentives in home country	S31	Enabling an instant process in technology development by skipping intermediate stages	Supported
EB32	Political turmoil in foreign market	S32	Enabling business activities flow on cloud beyond any political instability	Rejected
EB33	Bad/Worsening economic condition in foreign market	S33	Efficient capability in alleviating costs and proposing of financial facilitation for end users e.g. "pay-per-use model"	Supported
AI1	Existence of rigorous competition in foreign market	S23	Enabling SMEs to internationalise more quickly and effectively	Supported

Next chapter will point out, the achievement of this research study in addition, the theoretical, methodological, empirical and practical contributions of this research study will be highlighted, and finally the study will present the limitations of this research where these limitations will propose for further future research studies.

Chapter Seven
C o n c l u s i o n

7.1 Introduction

This chapter points at the core issues of this research study that has been conducted on the effectiveness of Cloud-Computing Utilisation (the CCU) as a facilitator that enables the EM-SMEs to mitigate their internationalisation barriers towards an accelerated internationalisation. Thus, initially this chapter revisits the fulfilment of objectives' set and ultimately, the achievement of the research aim will be reviewed. Later in this chapter, the findings of this research study will be highlighted, the theoretical and methodological and empirical contributions will be presented, and finally the study will present the limitations of this research where these limitations will propose further future research.

7.2 Achieving the aim and objectives of the research study

Earlier in chapter, one the aim and objective of this research study have been set as follow:

The research aim: To investigate the effectiveness of the CCU for the EM-SMEs to mitigate the barriers of internationalisation towards an accelerated internationalisation; In order to fulfil the research question, following five research objectives have been set for this research study.

Objective 1: Conducting a comprehensive literature review for identifying the internationalisation barriers for the EM-SMEs;

Objective 2: Conducting literature review for identifying the capabilities of the CCU and its potentiality for the EM-SMEs' internationalisation barrier mitigation;

Objective 3: Proposing and developing a conceptual framework from the literature review;

Objective 4: Analysing data empirically to test the research's hypotheses and its model;

Objective 5: Proposing the EM-SMEs' managers and the CSPs' managers with the possible solutions of the CCU for internationalisation barriers mitigation;

Table 7.1 presents the conforming the fulfilment of objectives in span of this research study.

70. Table 7.1 - The fulfilment of objectives

Objective	chapter
Objective 1	Chapter 2
Objective 2	Chapter 2
Objective 3	Chapter 3
Objective 4	Chapter 5,6
Objective 5	Chapter 6,2

7.2.1 Objective 1

After conducting various theories such as Uppsala, accelerated internationalisation, leapfrogging, and born globals theories in internationalisation, a comprehensive literature review of internationalisation barriers for the EM-SMEs has been studied in chapter Two. As the result of these studies, the possible internationalisation barriers were sorted and categorised in table 2.1.

Furthermore, the identified barriers were categorised based on four main classifications of Informational, Operational, Marketing and Environmental barriers. Moreover, four barriers have been identified for Informational Barriers. Eight barriers have been identified for Operational Barriers. Fourteen Barriers have been identified for Marketing Barriers and Seven Barriers have been identified for Environmental Barriers.

7.2.2 Objective 2

Objective Two has been set for conducting literature review for identifying the capabilities of the CCU and its potentiality for the EM-SMEs' internationalisation barrier mitigation; Objective 2 has been achieved through chapters Two. In chapter Two, this research study conducted a comprehensive literature review based on ICTs and internationalisation. Furthermore, Cloud computing as a new method of data processing, sorting and servicing was scrutinised in terms of mitigation of Internationalisation Barriers. This phenomenon was defined, and the characteristics were identified in its service and deployment models. Moreover, the possible solutions of the CCU to mitigate the internationalisation barriers were proposed in this chapter. Tables 2.12, 2.13, 2.14, 2.15 and 2.16 were developed to propose the solutions of the CCU for internationalisation barrier mitigation.

7.2.3 Objective 3

Proposing and developing a conceptual framework from the literature review was set in chapter Three. The objective 3 has been achieved by proposing five hypotheses for this research study and also based on the literature review this study has been developed a conceptual framework.

7.2.4 Objective 4

The objective 4 has been achieved in chapter five by analysing data empirically through examining of the research's hypotheses along with the proposed model. This achievement was assessed by Structural Equation Modelling (SEM) approach. The reliability of data analysis has been tested for determining of the accuracy and precision of the assessment. Thus, for the data in chapter Five analysis the reliability assessment was tested by Cronbach Alfa, KMO and Bartlett's tests. As the results of these tests show that, the precision of the reliability tests for this research study are higher than the thresholds. In

order to achieve objective 4 the SEM approach has been chosen for data analysis as this statistical method enabled this study to find the complex relationships among the IV and multiple DVs. For adjusting the initial CFA, this research study removed the items of Q7OPER, Q9OPER, Q16MARK, Q17MARK, Q19MARK, and Q23EN from its initial model. By removing the mentioned items and modifications, the study could finalise the CFA by achieving acceptable indices with goodness of fit indexes. Indexes of Chi-Square, RMSEA, GFI, AGFI, CFI, IFI, TLI, and degree of freedom were tested for finalising the CFA.

In addition, the confirmatory factor analysis for validating the constructs of data were achieved through the convergent assessments of the AVE, as the results of this test measurement confirm that the data of constructs are theoretically related to each other hence AVE for each construct were higher than 0.5. Moreover, the validity of discriminate assessment has been achieved by confirmation of obtained results in this research study where this assessment assesses the degree to which similar concepts are distinct among the other items in the constructs as the measurement is valid hence CR>AVE in this research study. Further, to test the hypothesis and the structural model for the research study, once again, for the structural model, goodness of fit indexes was tested where all the indexes were obtained results which are higher than the minimum thresholds. As follow p-value of .000, RMSEA .051, GFI .901, AGFI .863, CFI, .969, IFI .969, TLI .961 and Chisq/df 1.579. Moreover, the results show that all five casual paths are significant when in the structural model indicate that t-value are more than 1.96 and p-value is less than 0.05.

7.2.5 Objective 5

The objective for proposing possible solutions by the CCU for the EM-SMEs' internationalisation barriers mitigation has been done in chapter six. This chapter proposes series of solutions to the EM-SMEs in order to mitigate the internationalisation barriers. According to the aforementioned internationalisation barriers and statistical findings in chapter five, this research study examined the array of solutions of the CCU for internationalisation barriers that hider the internationalisation business for the EM-SMEs. It is not worthy that, the CCU enables to mitigate the barriers of internationalisation in four

areas of information, operation, marketing activities with providing unscathed environment for their businesses in the cloud.

7.3 Research Findings

According to the rules of thumb the significant relationship between variables are determined when t-value or Critical Ratios is more than 1.96 and p-value should be less than 0.05. Thus, as stated by the findings of this research study, the utilisation of cloud computing has a significant positive impact on Informational Barriers (IB) since the data analysis shows statically that the standardised regression weight path between these two variables has estimation of 0.31, t-value of 2.027 and a significant p-value of $\leq .05$ and consequently H_1 is supported. Therefore, the first hypothesis of this research study can be confirmed that the CCU has a significant positive effect on mitigation of the EM-SMEs' informational internationalisation-barriers.

In addition, the results found that the utilisation of cloud computing has a significant positive impact on Operational Barriers (OB) since the data analysis shows statically that the standardised regression weight path between these two variables has estimation of 1.2, t-value of 2.260 and a significant p-value of $\leq .05$ as consequently H_2 is supported. Therefore, the second hypothesis of this research study can be confirmed that the CCU has a significant positive effect on mitigation of the EM-SMEs' operational internationalisation-barriers.

Moreover, the results found that the utilisation of cloud computing has a significant positive impact on Marketing Barriers (MB) since the data analysis shows statically that the standardised regression weight path between these two variables has estimation of 0.28, t-value of 3.373 and a significant p-value of $\leq .05$ and consequently H_3 is supported. Therefore, the third hypothesis of this research study can be confirmed that the CCU has a significant positive effect on mitigation of the EM-SMEs' marketing internationalisation-barriers. Furthermore, the results found that the utilisation of cloud computing has a significant positive impact on Environmental Barriers (EB) since the data analysis shows statically that the standardised regression weight path between these two variables has estimation of 0.51, t-value of 3.388 and a significant p-value of $\leq .05$ and consequently H_4

is supported. Therefore, the forth hypothesis of this research study can be confirmed that the CCU has a significant positive effect on mitigation of the EM-SMEs' environmental internationalisation-barriers.

Lastly, the results found that the mitigation of internationalisation barriers by the CCU has a significant positive impact on Accelerated Internationalisation (AI) since the data analysis shows statically that the standardised regression weight path between these variables has estimation of 0.81, t-value of 12.080 and a significant p-value of $\leq .05$ and consequently H_5 is supported. Therefore, the findings of this research study confirm that the mitigated internationalisation barriers by the CCU are positively effective and can accelerate the trend of the EM-SMEs internationalisation. In addition, in the assessment of the initial CFA, this research study had to remove six items of Q7OPER, Q9OPER, Q16MARK, Q17MARK, Q19MARK, and Q23EN from its model firstly, because of their inconsistencies among other items and secondly because of obtaining low factor loadings. Table 7.2 shows the relatedness of these deleted items to the proposed solutions and internationalisation barriers.

Table 7.2 - Research Findings for the Deleted Items

No	Deleted item	CCU Proposed Solution	Code	the EM-SMEs Barriers	Barrier Code
1	Q7OPER	The CCU leads SMEs to add up skilful employees in export by reducing IT personnel	S6	Insufficient skilful personnel for exporting	OB06
		The CCU enables SMEs to be more business focused in their productions	S7	Insufficient production capacity for exporting	OB07
2	Q9OPER	The CCU enables information being provided officially and the authorities may even explicitly offer cloud services to the public	S9	Unfamiliarity with paperwork and export procedure	OB09
				Unfamiliarity with foreign law	
3	Q16MARK	Assisting to facilitate distribution channels in Foreign market	S17	Difficulty with distribution channels in foreign market	MB17

		Strengthening the distribution channels by facilitating networking and communication	S18	Availability of proper distribution channels for exporting	MB18
4	Q17MARK	Enabling end–to-end in structure of supply chain	S19	Difficulties to supply the product continuously	MB19
5	Q19MARK	Improving road safety, travel reliability, informed travel choices, and traffic resilience to moderate transport/insurance costs	S13	Immoderate transportation/insurance expenses	MB13
6	Q23EN	Enabling firms to operate beyond hosts' jurisdictions	S29	Rigorous rules and regulation in host countries	EB29

It seems the above solutions have remained unknown for the EM-SMEs, however; in chapter six, the benefit of the CCU and proposed solutions for mitigating the internationalisation barriers have been explained theoretically in details. As these findings in this research study are important because, the results show that CSPs and CC programmers have not yet provided such applications that enable to facilitate the EM-SMEs to mitigate internationalisation barriers in these areas, as those have been mentioned in table 7.2.

Moreover, the CSPs by producing and developing series of applications of above solutions will be able to support the EM-SMEs in their internationalisation and consequently they will be able to generate profits for their provided solution as well. However, the quantified outcomes of this research study have confirmed that the proposed solutions of the CCU are effective to mitigate the EM-SMEs internationalisation barriers and consequently the EM-SMEs are able to accelerate their internationalisation process. Table 7.3 shows the list of confirmed solutions of the CCU that can facilitate the EM-SMEs to mitigate their internationalisation barriers.

Table 7.3 - Research Findings for the Confirmed Items

The confirmed proposed-CCU solutions for the EM-SMEs internationalisation

Informational	Evoking and sorting useful data stored in Cloud by search engines technologies
	Accessing to appropriate data through foreign official websites stored on cloud
	Conducting convenient research for business opportunities through official agents websites
	Enabling ubiquitous, convenient, and on-demand networking access to carry out systematic research and communicate with potential customers
Operational	The CCU assists managers to save up time, mitigate costs effectively, and add up skilful employees in export rather than IT personnel
	The CCU enables SMEs to be more business focused in their productions
	The CCU enables information to be provided officially and explicitly by cloud services to the public
	Establishing interpersonal communication channels and mass media
	Prevalence of new methods in electronic transaction by the CCU
Marketing	The CCU works as a main player in networking to link up with competent representatives and/or eliminates the intermediaries with supporting after-sales services
	Improving road safety, travel reliability, informed travel choices, and traffic resilience to moderate transport/insurance costs
	Enable digital promotion and assisting to reduce the general costs of production in order to produce at a competitive price
	Assisting to facilitate distribution channels, end–to-end in structure of supply chain, networking and communication in Foreign market
	The CCU can assist the SMEs to access proper information with offering satisfactory prices to clients
	Enabling to collect analytical information, strengthening administration control, and better marketing support to produce high quality products for niche market
	Enabling to save up costs toward efficient niche production based on market needs
Environmental	Providing an instant and up-to-date information about currency exchange
	The CCU enables to accumulate information from social networking, and manage to be geocentric with adaption to any Language
	Enabling the firms to operate their activities on clouds beyond home's jurisdictions as well as operating beyond hosts' economic status.
	Enabling an instant process in technology development by skipping intermediate stages
	Efficient capability in alleviating costs and proposing of financial facilitation for end users e.g. "pay-per-use model"
Acc. Int.	Enabling the SMEs to internationalise more quickly and effectively

7.4 Contribution of the research study

The contributions of this research study are distinctive and are classified theoretically, methodologically and empirically.

7.4.1 Theoretical Contribution

The contribution of this research study is to find out the effectiveness of the CCU on mitigation of the EM-SMEs internationalisation barriers towards a speedy internationalisation. Therefore, the theoretical contributions of this research study can be accomplished and scrutinised in two significant perspectives. Firstly, this research study contributes theoretically to the International Business (IB), by identifying and classifying the EM-SMEs internationalisation barriers to Informational, Operational, Marketing, and Environmental Barriers and secondly, the study contributes to the Information System (IS) by providing and confirming some effective the CCU's solutions to mitigate the EM-SMEs internationalisation barriers.

In respect of IB contribution, this research study has provided the internationalisation barriers for SMEs from emerging markets. In addition, this research study contributed to classify thirty-three barriers for the EM-SMEs in four main categories of Informational, Operational, Marketing and Environmental Barriers. Whereas, the most of studies in the literature are based on idiosyncratic traits of SMEs in developed markets (Leonidou 2004), and even in some studies, which have been conducted on the basis of the EMs so far, the 'environmental' elements of the EMs has not been specifically been addressed. e.g. studies such as Kahiya 2013, Al-Hyari K., Al-Weshah G., Alnsour, M. (2012) Cardoza, G., & Fornes, G. (2011). While in this research study, the author has determined those internationalisation barriers of the EM-SMEs that need to be considered for the environmental barriers of the EM-SMEs. These barriers (environmental) of the EM-SMEs have been indicated as facing with deficiencies in the structure of market, environmental stability in economy and political status, efficiency in taxation system and the level of corruption (Jones, Fallon and Golov, 2000; Bekaert and Harvey, 2003; Dcruz and Hameed, 2012) when the barriers impede the EM-SMEs to enjoy their speedy internationalisation.

Secondly, the study contributes to propose a series of CC solutions for mitigation of the EM-SMEs internationalisation barriers. In other words, the study identified and allocated the potential possible solutions for the EM-SMEs barriers by means of the CCU in the literature. The quantified outcomes and the magnitude level of effectiveness of these proposed solutions reveal that the CCU are effective to mitigate the EM-SMEs internationalisation barriers and consequently these firms are able to accelerate their internationalisation process.

The third theoretical contribution of this study points out the capabilities of cloud computing according to its definition that has been made by National Institute of Standards and Technology (NIST). As this organisation defines that Cloud Computing is "a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g. networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service" (Mell and Grance, 2011:2). Thus, this research study theoretically has contributed to Information System (IS) literature in order to clarify that the EM-SMEs integration with CC that enables them to mitigate their internationalisation barriers and accelerate their internationalisation. Moreover, the other theoretical contribution of this research study is the development of a conceptual model for the literature in order to quantify the positive relationship among the proposed variables.

7.4.2   Methodological contribution

This research study has contributed methodologically firstly with creating an approach to quantify the magnitude level of integration of firms by the use of Mell and Grance (2011:2) CC definition. The magnitude integration of the CCU refers to a measurement in which the author has provided for this research study in order to quantify to what extent firms utilise different applications on the clouds for their international businesses.

Based on the mentioned CC definition, the author designed and imbedded a series of closed-questions in the survey in order to enumerate the different types of applications that are being used constantly among the EM-SMEs in their international businesses (See appendix I).

Therefore, the author decomposed the definition of CC (Mell and Grance, 2011:2) into the following independent variables, 'INTEapplication', 'INTEstorage', 'INTShare', 'INTEnetworking', and 'INTEcommunication'. Where, the variable of 'INTEapplication' refers to the total numbers of applications that firms have been already installed and used on their mobile phones, tablets and computers. The variable of 'INTEstorage' refers to the firm's propensity for storing data on cloud applications. The variable of 'INTShare' refers to firm's willingness to share documents through use of cloud computing applications. The variable 'INTEnetworking' refers to firms ability to establish networks by use of cloud computing. The variable of 'INTEcommunication' refers to set up communicatation through cloud applications.

Therefore, by using this methodological approach, the author enabled to provide an instrument to enumerate various applications that are being used by the EM-SMEs in order to facilitate their international businesses in foreign markets. Moreover, this scale enabled the author to quantify the magnitude integration of the EM-SMEs with cloud computing. In other words, the provided methodological approach enabled this research study to find out whether the increase in utilising different applications would assist firms to mitigate more barriers in their internationalisation. As the findings, confirm this argument.

Therefore, the proposed methodological contribution of this research enabled the researcher not only to quantify the magnitude level of the CCU integration of the EM-SMEs but also enabled the author to examine and quantify the impact of the 'the EM-SMEs + CCU' variable ('INTEapplication', 'INTEstorage', 'INTShare', 'INTEnetworking', 'INTEcommunication') on the variables of 'informational barriers', 'operational barriers ', 'marketing barriers ' and 'environmental barriers'. (See figure 5.3)

Secondly, the research study has contributed methodologically by applying SEM analysis with use of AMOS 21.0 software analyse data. AMOS software integrates an easy-to-use graphical interface with an advanced calculation for SEM. Moreover, with SPSS Amos software the researcher can build attitudinal and behavioural models that reflect complex relationships more accurately than with standard multivariate statistics techniques using either an intuitive graphical, or programmatic user interface.

So far, the most of the studies which have been conducted methodologically on the internationalisation barriers were based on "traditional statistical" method by use of a series of regression models (e.g. Kahiya 2013; Al-Hyari et al., 2012; Cardoza & Fornes, 2011); whereas, this research study has been analysed methodologically based on the SEM Amos 21.0 technique. Given that, applying SEM analysis by SPSS AMOS software in this research has made this study distinctive from the other studies. This methodological approach encapsulates confirmatory factor analysis, path analysis, and partial least squares path modelling as the application of SEM is commonly justified in the social sciences and because of its ability to impute relationships between unobserved constructs (latent variables) from observable variables (Hancock, 2015). Moreover, the author has used SEM analysis by SPSS AMOS software to determine whether the conceptual model of the research study is suitable and valid. In addition, SEM analysis is largely confirmatory rather than exploratory therefore this technique enables the researcher to determine whether the proposed model is valid or not.

Due to a large number of variables in this research study, applying the methodological SEM approach methodologically contributes to fit linear relationships among the of variables, as well as validating the provided questionnaire of the research study as a measurement instrument with quantifying measurement error and prevent its biasing effect. In addition, by applying AMOS 21.0 sotware, this research study methodologically contributes to specify and test each possible relationship in the theoretical knowledge of the study and ultimately tests the hypotheses of the research as this technique enables the researcher to analyse the model more accurately than traditional multivariate statistics techniques (Hair et al. 2013).

7.4.3 Empirical Contribution

According to the finding of this research study, the following empirical contributions envisage for the EM-SMEs decision makers and CSPs. The CCU can significantly alleviate the barriers of internationalisation and the consequence of these alleviations will increase the speed of the EM-SMEs' internationalisation. Therefore, the research outcomes empirically prove that exploiting the CCU can significantly accelerate the trend of the EM-SMEs' internationalisation by mitigation of four main-classified internationalisation barriers.

The empirical contribution of this research indicates to the facilitations of the CCU that enable the EM-SMEs to mitigate their informational, operational, marketing and environmental barriers to accelerate their internationalisation.

Firstly, the findings of this research empirically reveal that the CCU facilitates the EM-SMEs to mitigate their informational barriers by accessing appropriate information in foreign market. The CCU can provide adequate data analysis for target markets along with evoking and sorting useful data exists in clouds by means of various search-engines algorithm. This could eliminate major uncertainty caused by misleading data in foreign markets through accessing appropriate data that have been applied and published by foreign official websites. Moreover, the official websites could be designed in a way to facilitate the EM-SMEs to identify their opportunities in foreign markets conveniently. This importance can empower the EM-SMEs to identify and communicate their foreign partners and potential overseas customers with establishing networking along with systematic-research abilities.

Secondly, the findings of this research empirically prove that the CCU facilitates the EM-SMEs to mitigate operational barriers in order to acting more actively in foreign market. The CCU enables the managers of the EM-SMEs to save up more time in in terms of handling their daily activities more effectively. This importance enables them to allocate more time for attention to export activities rather. In addition, the CCU assists the EM-SMEs to reduce their general costs and expenditures and from the other hand enables the EM-SMEs to eliminate the difficulties in fast collecting debts from the target-markets customers by using of prevalence methods in international transactions. Moreover, the CCU can assist firms to set up mix communication more conveniently in target markets through establishing mass media communication and interpersonal channels on social media.

Thirdly, the outcomes of this research empirically reveal that the CCU facilitates the EM-SMEs to mitigate marketing barriers in their target markets. The CCU eliminates the difficulties in doing after-sales services in foreign markets by establishing an efficient networking and possibility to lead and control this importance from the location of the EM-SMEs. In addition the EM-SMEs are able to link up themselves with potential representatives in foreign market through competent capabilities of this technology

consequently firms effectively encounter surveillance and control on their intermediaries in target markets through advanced networking facilities and even by elimination of these intermediaries. Moreover, the CCU enables the EM-SMEs to set proper promotional mix in foreign markets through applying digital promotion and following up appropriate STP strategy. Contribution of the CCU enables the EM-SMEs to be encountered by better information to access appropriate warehouse in target markets in addition, and by reducing the general costs, this technology enables firms to offer reasonable finished prices and enable them to set their competitive prices for the customers in target markets. Moreover, by accessing analytical and pertinent information, the CCU enables the EM-SMEs to produce their products effectively based on the needs and tastes of target markets' needs; this can lead to strengthening their market control and support in target market. the CCU enables the EM-SMEs to comply with quality and standards of target markets by gaining more effective knowledge management, which lead to produce high-quality products as well as, enabling them to save up costs towards niche productions. Consequently, the CCU enables the EM-SMEs to maintain their competitive advantages in the foreign markets by fast and effective internationalisation.

Fourthly, the findings empirically prove that the CCU facilitates the EM-SMEs to mitigate their environmental barriers in the target markets. The CCU enables the EM-SMEs to be updated regularly about exchange rates in target markets; this importance enables them to have upper hand from other counterparts in order to act appropriately in time. In addition, the CCU enables firms to reduce psychic distance, sociocultural and language issues in business practice through accumulating information from social networking websites, being more geocentric and adopting firms based on the target markets language. Moreover, Utilising CC enables firms to operate beyond hosts' jurisdiction; this importance can assist them to alleviate undesirable regulations in home country by operating beyond home's jurisdiction. The CCU enables firms to access advanced technology by skipping the absence of government supports and incentives in home country; this enables firms to be active on the clouds even in a political turmoil or any political instability. Furthermore, the CCU empowers the EM-SMEs to be effectively efficient in alleviating costs and expenditures and consequently be effective for end users who suffer from bad economic conditions in target markets.

7.5 Research Limitation

One of the constraints of this research study could be remarked as using a single method to measure the data. As this research has been conducted by SEM as a quantitative research method. Whereas, collecting data through interviews with managers of the EM-SMEs could lead to find in depth about the effectiveness of the CCU for the EM-SMEs. As qualitative method could make a profound understanding about the utilisation of Cloud computing. By obtaining data through interviews with top managers in the EM-SMEs and talk about their opinions, experiences could be useful for gaining in-depth information. Moreover, Face-to-face interviews and group discussions with the EM-SMEs managers could be the best way to get somewhat in-depth feedback for the effective impact of cloud computing on their international businesses. Moreover, qualitative research can be valuable when researcher scrutinises new products, services or coming up with new phenomenon and wants to test the reactions.

In addition, the other limitation for this research study could be remarked as nomination of Iranian market as an emerging market to collect data. Iran suffers many years from economic sanctions as this country unlike other emerging markets has left behind in many international conventions and financial treaties. The most of its banks systems have not been yet modernised and still are locked out of global financial system. The ICTs infrastructure for supporting cloud computing are still poor and expensive. However, finding of this research study show that Iranian SMEs perfectly use this technology for their purposed.

7.6 Future Research

As the result of these findings have highlighted the significant impact of the CCU on informational barriers, operational barriers, marketing barriers and operational barriers of the EM-SMEs' internationalisation. Moreover, the significant effectiveness of mitigated barriers by the CCU on accelerated internationalisation has become more clearer through this research study. For the future research it is more important to find out how cloud computing can facilitate technology barriers for the EM-SMEs. Application of modern technologies either hardware or software can be considered as an important barriers for the EM-SMEs that suffer from lack of resources. As this study discovered the efficiency and

effectiveness of the CCU on mitigation of informational, operational, marketing and environmental barriers, it would be important to assess how the CCU would be efficient and effective to mitigate the technologies barriers for the EM-SMEs.

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Appendices

Appendix I

College of Business, Arts and Social Sciences Research Ethics Committee
Brunel University London
Kingston Lane
Uxbridge
UB8 3PH
United Kingdom

www.brunel.ac.uk

3 November 2015

LETTER OF APPROVAL

Applicant: Dr Grahame Fallon/Sahab Hosseini

Project Title: To investigate the effectiveness of CCU for accelerated internationalisation by EM-SMEs

Reference: 0615-LR-Nov/2015-304

Dear Dr Grahame Fallon/Sahab Hosseini

The Research Ethics Committee has considered the above application recently submitted by you.

The Chair, acting under delegated authority, is satisfied that the amendments accord with the decision of the Committee and has agreed that there is no objection on ethical grounds to the proposed study. Approval is given on the understanding that the conditions of approval set out below are followed:

- The agreed protocol must be followed. Any changes to the protocol will require prior approval from the Committee.

Please note that:

- Research Participant Information Sheets and (where relevant) flyers, posters, and consent forms should include a clear statement that research ethics approval has been obtained from the relevant Research Ethics Committee.
- The Research Participant Information Sheets should include a clear statement that queries should be directed, in the first instance, to the Supervisor (where relevant), or the researcher. Complaints, on the other hand, should be directed, in the first instance, to the Chair of the relevant Research Ethics Committee
- Approval to proceed with the study is granted subject to receipt by the Committee of satisfactory responses to any conditions that may appear above, in addition to any subsequent changes to the protocol.
- The Research Ethics Committee reserves the right to sample and review documentation, including raw data, relevant to the study.
- You may not undertake any research activity if you are not a registered student of Brunel University or if you cease to become registered, including abeyance or temporary withdrawal. As a deregistered student you would not be insured to undertake research activity. Research activity includes the recruitment of participants, undertaking consent procedures and collection of data. Breach of this requirement constitutes research misconduct and is a disciplinary offence.

Professor James Knowles

Chair

College of Business, Arts and Social Sciences Research Ethics Committee
Brunel University London

Dear Participant,

This survey tries *to investigate the effectiveness of cloud computing utilisation on mitigating barriers to accelerated internationalisation by Small and Medium sized Enterprises in Emerging Markets,* and will invite you to share your experiences of using cloud-computing applications which are being used daily in your smartphones, tablets and PCs in order to facilitate your international businesses. Your responses will be combined with those of others to help inform about the experience of using cloud computing. The survey will be conducted on-line through Monkey Survey website <https://www.surveymonkey.com/>
The survey information will be collected and stored in my Survey account in SurveyMonkey website and the collected information will be destroyed immediately after successful completion of my study on 30th Nov. 2016 to avoid any possible disclosure. The participant(s) will be informed of the survey results by email if they wish to know about the outcomes of this research.

Please kindly answer all the questions that apply to you. The survey takes about <u>Twenty minutes</u> to be completed. Please proceed to other pages by clicking on "<u>Next</u>" button when you arrive at the final page with "Thank You", and then you will know that your responses have been recorded on our database.

Moreover, Please kindly be informed that all information provided will be strictly confidential (individuals will not be identified) and will be purely used for my self-funded academic purpose.
I would like to thank you very much in advance for kindly agreeing to participate in this survey. If you have any questions about this study or the questionnaire please contact me using the information below.

Sahab Hosseini
1232080
Doctoral Researcher at BBS
Brunel University of West London
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Kingston Lane, Uxbridge
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Sayın Katılımcı,

Bu araştırmanın hedefi, gelişmekte olan piyasalarda küçük ve orta boy şirketlerin uluslararası ticaretiönündeolan engelleriinternette geniş ağ işlemlerin performansı ve özellikleri ile giderme konusunu araştırmaktır. Bu nedenle, sizce rica ederiz kendi işinizde ve ticaretinizi uluslararası alanında geliştirmek içininternete bağlı olan mobil, tabletve PC üzerinde programların gündelik kullanma deneyimleriniz hakkında bizi bu araştırma araciliğiyla bilgilendirin.

Benim adım " Sahab Hosseini ", öğrencilik numaram: 1232080, Uluslararasıİşletmecilik, Doktora dalında öğrenciyim vebu anket formusadece benim akademikaraştırmam için ve Brunel University,Londra, İngiltere'de hazirlanmiştir. Elde edilen bütün bilgiler gizli tütülacak ve sadece bu araştırmanın bilim hedefler konusunda kullanılıcaktır ve hiç bir şekilde bu bilgiler yayınlanamayacaktır.

Bu anketı doldurmak için 20 dakika zaman ihtiyac olacaktir. Sizden tüm sorulara yanıt vermenizi rica ederim. Bu araştırma hakkında her hangi bir sorunuz olursa eğer benimler temas kurun ve ben en kısa zamanda size cevap vereceğim. Sizden, bana bu araştırmada yardım ettiğinizden teşekkür ederim.

Sahab Hosseini
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این پژوهش قصد دارد کاهش موانع تجارت خارجی شرکتهای کوچک و متوسط در بازارهای نوظهور را با استفاده از کارایی و قابلیتهای پردازش ابری در اینترنت بررسی کند. از این رو از شما درخواست میشود تجربه خود را در خصوص استفاده روزانه ازانواع اپلیکشنهای کاربردی موجود درموبایل، تبلت و کامپیوتر متصل به اینترنت که به تسهیل کردن تجارت خارجی شرکت شما می انجامد با این تحقیق به اشتراک بگذارید.

این پرسشنامه صرفا جهت تکمیل تحقیقات تحصیلی اینجانب سحاب حسینی به شماره دانشجویی ۱۲۳۲۰۸۰ رشته مدیریت تجارت بین الملل در مقطع دکترا در دانشگاه برونل لندن انگلستان تهیه شده و تمامی اطلاعات دریافتی صرفا برای مقاصد علمی این تحقیق مورد استفاده قرار خواهد گرفت. شایان به ذکر است تمامی اطلاعات جمع آوری شده بعد از تکمیل این تحقیق از بین خواهد رفت و شرکت کنندهای محترم درصورت نیاز میتوانند از چگونگی نتایج این تحقیق با ارسال ایمیل مطع شوند.

پرسشنامه حدودا ۲۰ دقیقه زمان برای تکمیل آن پیشبنی میشود و خواهشمندم به تمامی سوالات در پرسشنامه بطور کامل پاسخ دهید. در صورت هر گونه سوال در مورد این مطالعه تحقیقاتی لطفا با آدرس زیر تماس حاصل فرمایید تا اسرع وقت پاسخگوی نیاز شما باشم. قبلا از همکاری شما درشرکت و پیشبرد تحقیقات اینجانب با پاسخ به این نظرسنجی بسیار سپاسگزارم.

سحاب حسینی
دانشجوی دکترا مدیریت تجارت بین الملل
دانشگاه برونل – لندن

Brunel Business School
Research Ethics
Company Confidentiality Form

CONSENT FORM TO BE ADAPTED AS APPROPRIATE

The participant should answer every question

	YES	NO
1. I have read the Research Participant Information Sheet. من از‌چگونگی شرکت در این تحقیق آگاهم.	☐	☐
2. I have had an opportunity to ask questions and discuss this study. من مطلع هستم که میتوانم در رابطه با این تحقیق از پژوهشگر سوال کنم .	☐	☐
3. I understand that I am free to withdraw from the study: من مطلع هستم که میتوانم این تحقیق انصراف دهم.		
- at any time (Please note that you will unable to withdraw once your data has been included in any reports, publications etc) در هر زمان	☐	☐
- without having to give a reason for withdrawing بدون هیچ دلیل	☐	☐
- without it affecting my future care بدون هیچ عواقبی	☐	☐
4. I understand that I will not be referred to by name in any report/publications resulting from this study من مطلع هستم در این تحقیق نام من محفوظ است و در هیچ عنوان منتشر نخواهد شد.	☐	☐
5. I agree that my comments can be quoted as long as they do not directly identify me when the study is written up or published هرگونه نقل و قول از اینجانب ممنوع و تنها بدون ذکر نام در این تحقیق میسر است.	☐	☐
6. I agree to take part in this study من از شرکت در این تحقیق موافقم.	☐	☐

Research Participant Name: نام شرکت کننده
Research Participant signature: امضا
Date: تاریخ

Part ONE: Strategies for overcoming barriers to internationalisation

English	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Farsi	كاملا مخالفم	مخالفم	نظری ندارم	موافقم	كاملا موافقم
Turkish	Asla katılmıyorum	Katılmıyorum	Bir fikirm yok	Katılıyorum	Çok Katılıyorum
	1	**2**	**3**	**4**	**5**

Strategies for overcoming informational barriers							
Q2	Lack of sufficient information from target market create important barrier to internationalisation. İkinci bölüm: Dışticaretin önündeki engellerin azaltılmasıiçin stratejiler نبود اطلاعات کافی از بازار هدف مانع مهمی را برای تجارت خارجی ایجاد میکند.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
		1	2	3	4	5	
Q3	Our company finds effective information on cloud for trading opportunities on home/foreign official websites. Şirket kendi ticari fırsatları hakkında olan faydalı bilgileri resmi iç ve dış web sitelerinden elde etmiştir? شرکت اطلاعات مفیدی از فرصتهای تجاری خود را از سایتهای رسمی داخلی و خارجی بدست میآورد .	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
		1	2	3	4	5	
Q4	Our company identifies customer information on cloud by using of search engines in home/ foreign official websites. Şirket kendi müşterilerin bilgilerinin veya ticari bağlantıcılarini iç ve dış araştırma web sitelerinden elde ediyor? شرکت مشخصات مشتریان و یا رابطین تجاری خود را از طریق متورهای جستجوگر درسایتهای موجود داخلی و خارجی بدست میآورد.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
		1	2	3	4	5	

Strategies for overcoming operational barriers							
Q5	Existence of operational difficulties in target market create important barrier to internationalisation. Hedef piyasalarda idarive operasyonelsorunlar dış ticaret için büyük bir engel oluştura biliyor? وجود مشکلات اجرایی وعملیاتی دربازار هدف مانع مهمی برای تجارت خارجی ایجاد میکند.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
		1	2	3	4	5	

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Q6	Utilising various applications on cloud connected to internet on mobile phones, tablets and PCs can save up daily time activities of the management. İnternete bağlı olan mobil, tabletve PC üzerinde programların gündelik olarak kullanılması şirketin günlük zaman yönetiminde zaman kazandırıyor? بهره گیری از انواع اپلیکیشنهای کاربردی موجود درموبایل، تبلت و کامپیوترمتصل به اینترنت میتواند در وقت روزانه مدیریت شرکت صرفجویی کند.					
		1	2	3	4	5
Q7	Utilising various applications on cloud connected to internet on mobile phones, tablets and PCs can help our management to be more focused on their business rather than IT. İnternete bağlı olan mobil, tabletve PC üzerinde programların gündelik olarak kullanılması şirketinbilgisayar uzmanlarına olan ihtiyacını azaltır ve bu nedenle şirket famamen ticari işlerine odaklaniyor? بهره گیری از انواع اپلیکیشنهای کاربردی موجود درموبایل، تبلت و کامپیوترمتصل به اینترنت میتواند وابستگی شرکت را به کارشناسان متخصص کامپیوتری کمتر کرده و از اینرو شرکت میتواند تمام توجه خود را صرف امور تجاری خود کند.					
		1	2	3	4	5
Q8	Utilising various applications on cloud connected to internet on mobile phones, tablets and PCs can help our management to reduce current costs and allocate more finance on its core business. İnternete bağlı olan mobil, tabletve PC üzerinde programların gündelik olarak kullanılması şirketin güncel masraflarını azaltır ve şirket mali kaynaklarını ticari işlerine odaklana biliyor? بهره گیری از انواع اپلیکیشنهای کاربردی موجود درموبایل، تبلت و کامپیوترمتصل به اینترنت میتواند ازهزینه های عمومی جاری شرکت کم کرده و شرکت توانسته منابع مالی خود را بیشترمتوجه امور تجاری متمرکز کند.					
		1	2	3	4	5
Q9	Utilising various applications on cloud can help our management to use informative and official websites in target markets and get familiar with rules and regulations of document procedures. İnternete bağlı olan mobil, tabletve PC üzerinde programların gündelik olarak kullanılması şirketi piyasa idari işlemleri ve güncel yasalar hakkında bilgilendirir? بهره گیری از انواع اپلیکیشنهای کاربردی موجود درموبایل، تبلت و کامپیوترمتصل به اینترنت میتواند شرکت را از چگونگی مراحل اداری در بازارها ی آگاه ساخته و شرکت را از قوانین جاری ان مطلع سازد.					
		1	2	3	4	5

Q10	Utilising various applications on cloud have facilitated communication with customers and representatives in foreign markets and enable firm to monitor their requirements and activities. Bulunan tüm programları kullanarak şirketin müşteriler veya yurtdışı temsilcileri ile olan bağlantısını sağlar ve şirket bu şekilde onların yaptığı işlere daha iyi bir kontrol yapa biliyor? بهره گیری از انواع اپلیکشنهای کاربردی موجود ارتباط شرکت با مشتریان و یا نمایندگان خود در خارج کشور را تسهیل کرده و شرکت را قادر ساخته تا نظارت بهتری بر عملکرد آنها داشته باشد.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
Q11	Utilising applications of digital banking on cloud by means of mobile phones, tablets and PCs enable our company to manage relatively easy financial transaction in both home and target markets. Para transferi için kullanılan elektronikyöntemlerinde, şirket internete bağlı olan mobil, tabletve PC üzerinde programların gündelik olarak kullanılması ile rahat bir şekilde bankacılık işlemlerini kendi yerinde veya hedef piyasada yapa biliyor? با بهرمندی از روشهای الکترونیکی انتقال پول، شرکت میتواند با استفاده از اپلیکشنهای کاربردی موجود درموبایل، تبلت و کامپیوترمتصل به اینترنت به راحتی تراکنشهای بانکی خود را چه در محل و چه در بازار هدف انجام دهد.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5

Strategies for overcoming marketing barriers						
Q12	Existence of marketing difficulties in target market creates important barrier to internationalisation. Hedef piyasalarda olan pazarlama sorunları dış ticaret için büyük bir engeldir? وجود مشکلات بازاریابی دربازار هدف مانع مهمی برای تجارت خارجی ایجاد میکند.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
Q13	Utilising various applications on cloud connected to social media network can help our management to collect useful information from target markets in order to develop product/service based on their needs. İnternete sosyal ağlara bağlı olan mobil, tabletve PC üzerinde programların gündelik olarak kullanılması hedef piyasalar hakkında faydalı bilgiler elde ede bilir ve bu bilgiler sayesinde şirket kendi ürettiği ürünlerini hedef piyasalarin şartlar ve durumuna göre koordine ede bilir? بهره گیری از انواع اپلیکشنهای کاربردی موجود درموبایل، تبلت و کامپیوترمتصل به شبکه های اجتماعی در اینترنت میتواند اطلاعات مفیدی را از ویژه گیهای بازارهای هدف جمع آوری کرده و بر اساس آن شرکت میتواند تولیدات خود را با بازار هدف تنظیم و سازگار کند.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Q14	Utilising various applications on cloud connected to internet such as email, networking, storing, data sharing, audio-visual communications can facilitate the company after-sales services duties. Şirket e-posta, ağ düzenleme,bilgi depolama, bilgi paylaşımı,ses ve videoiletişimi gibir programları kullanarak müşterilere daha iyi bir satış sonrasi hizmetleri suna bilir? بهره گیری از انواع اپلیکشنهای کاربردی موجود مانند ایمیل ، شبکه سازی، ذخیره کردن، به اشتراک گذاری اطلاعات، برقراری ارتباط صوت و تصویری میتواند تعهدات خدمات بعد از فروش شرکت را تسهیل کند .	1	2	3	4	5
Q15	Utilising various applications on cloud connected to internet on mobile phones, tablets and PCs can help to produce cheaper products or services by reducing of general costs. İnternete bağlı olan mobil, tabletve PC üzerinde programların kullanılması şirketin üretim işlemlerinde genel masrafları azaltır ve bu şekilde ürün ve hizmetlerin üretim fiyatını azalta bilir? بهره گیری از انواع اپلیکشنهای کاربردی موجود درموبایل، تبلت و کامپیوترمتصل به اینترنت میتواند با پایین آوردن هزینه های عمومی تولید شرکت باعث کاهش قیمت تمام شده کالا و خدمات تولیدی شرکت شود.	1	2	3	4	5
Q16	Utilising powerful networking and convenient communication with applications on cloud by means of mobile phones, tablets, and PCs can manage effectively distribution channels in target market. İnternete bağlı olan mobil, tabletve PC üzerinde programların kullanılması şirket için ana ülkede daha iyi bir ağ düzenleme ve iletişimleri sağlaya bilir? بهره گیری از انواع اپلیکشنهای کاربردی موجود درموبایل، تبلت و کامپیوترمتصل به اینترنت میتواند ارتباط وشبکه سازی موثری درشبکه توزیع کشورمیزبان برای شرکت به وجود آورد.	1	2	3	4	5
Q17	Utilising various applications on cloud enable the company consistently connects with its representatives in foreign markets and this leads to foresee any deficits in the markets. İnternete bağlı olan mobil, tabletve PC üzerinde programların kullanılması şirketin surekli iletişimini yurtdışında olan temsilciler ile sağlaya bilir ve bu nedenle, yönetim sistemi kendi ürünlerinin dış piyasasında az olma olasılığını tahmin ede bilir? بهره گیری از انواع اپلیکشنهای کاربردی موجود درموبایل، تبلت و کامپیوترمتصل به اینترنت میتواند شرکت را مستمرا با نمایندگان خارج ازکشور مرتبط سازد و از اینرو مدیریت قادر به پیشبینی لازم برای تامین کمبودهای احتمالی محصولات خود در بازارهای خارجی خواهد داشت.	1	2	3	4	5

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Q18	Utilising various applications on cloud connected to internet on mobile phones, tablets, and PCs assist the company and our agents to gain proper information for warehousing in target markets. İnternete bağlı olan mobil, tabletve PC üzerinde programların kullanılması şirket ve onun temsilcilerini ürünler için hedef piyasada daha rahat bir şekilde depolama yerleri bulmasini sağlaya bilir? بهره گیری از انواع اپلیکشنهای کاربردی موجود درموبایل، تبلت و کامپیوترمتصل به اینترنت میتواند شرکت و نمایندگانش را قادر سازد تا آسانتراطلاعات جهت محلهای مناسب برای انبارکالا در بازار هدف پیدا کند.					
		1	2	3	4	5
Q19	Due to accessing clear information on cloud such as, weather condition, road and travel safety, environment protection, and traffic awareness, our company experiences lesser insurance and transportation costs. Şirket kullanışlı programları kullanarak, Hava durumu, yol güvenliği, rahat ulaşım, seçim yöntemleri, seyahat içingüvenli ve emniyetlibir ortam ve sigorta vetaşımacılık masraflarını azaltmak için trafikdurum hakkında bilgileri rahat bir şekilde elde ede bilir? شرکت با بهره گیری از انواع اپلیکشنهای کاربردی موجود ، میتواند اطلاعات دقیقی ازوضعیت هوا ، امنیت راهها، حمل و نقل مناسب، انتخاب روش ها و محیطهای مطمئن و ایمن تربرای سفر، و همچنین آگاهی از وضعیت ترافیک در کاهش هزینه های بیمه و حمل و نقل یاری می گیرد .					
		1	2	3	4	5
Q20	Company is able to set out efficiently some promotional activities in foreign market through social networking applications exist on cloud with targeting right customers. Şirket internet ve sosyal ağları kullanarak kendi hedef piyasaları ve müşterilerini rahat bir şekilde belirte bilir ve kendi ürünleri için reklam yapa bilir? شرکت با استفاده از اینترنت و شبکه های اجتماعی بهتر میتواند مشتریان و بازارهای هدف خود را شناسایی کرده و برای محصولات خود تبلیغ کند.					
		1	2	3	4	5

Strategies for overcoming environmental barriers						
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Q21	Instability in economic and political condition in target markets create important barrier to internationalisation. Hedef piyasada ekonomik vesiyasi istikrarsızlıkdış ticaret için büyük bir engeldir? بی ثباتی اقتصادی و سیاسی در بازار هدف مانع مهمی برای تجارت خارجی ایجاد میکند.					
		1	2	3	4	5

Q22	Utilising various applications on cloud enable the company to be needless of having physical presence in foreign market. Thus, any economic turmoil in foreign market has least effect on our business losses. İnternete bağlı olan mobil, tabletve PC üzerinde programların kullanılması ile şirketin dış piyasalarda fizikselvarlığına ihtiyac olmaz, bu şekilde, hedef piyasada olan her türlü istikrarsızlık şirketi etkilemez? بهره گیری از انواع اپلیکشنهای کاربردی موجود درموبایل، تبلت و کامپیوترمتصل به اینترنت میتواند شرکت را از حضور فیزیکی در بازارهای خارجی بی نیاز کرده بطوریکه هرگونه اختلال در وضعیت بازار هدف کمترین تاثیر را بر شرکت را میگذارد	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
Q23	It can be predicted that utilising various applications on cloud enable the company to meet the least loss in foreign markets because of any change in rules and regulations. Tahmin edilir ki, internete bağlı olan mobil, tabletve PC üzerinde programların kullanılması şirketi dış piyasada mümkün olanher türlü yasa ve kanunlarin değişimi ile oluşan hasardan uzak tutar ve onun işlerinde en az bir etkisi olamaz? پیشبینی میشود، بهره گیری از انواع اپلیکشنهای کاربردی موجود درموبایل، تبلت و کامپیوترمتصل به اینترنت شرکت را از هرگونه خسارت احتمالی از تغییرقوانین و مقررات در بازار خارجی محفوظ دارد و کمترین تاثیررا بر عملکرد آن بگذارد.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
Q24	Based on the target markets, company's website on cloud can be designed in various languages, where any promotional activities for products can be deployed according to the target-market's norms. Şirket internetten yararlanarak (geniş ağ işlemi) kendi web sitesinin hedef piyasa ve uygun dil ve yöntem ile düzenlene bilir, bu şekilde kendi ürettiği ürünlerin reklamlarını hedef piyasanın şartlari ile koordine edebilir? شرکت میتواند با بهره گیری از اینترنت (پردازش ابری) وب سایت خود را براساس زبان و روش تجاری مناسب مطابق با بازار هدف تنظیم کند بطوریکه تبلیغات محصولات تولیدی خود را با شرایط بازار هدف سازگار سازد.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
Q25	Our management believes that Cloud computing utilisation facilitates to mitigate the lack of technical supports from government side by using useful applications in cloud computing environment. Şirketin yönetmeni, büyükhükümetteşvikleri ve uygunteknik altyapılarının olmamasını geniş ağ işlemi ile internet örtamını kullanmak için en büyük sorunu bilir? مدیریت شرکت بر این باوراست که استفاده از پردازش ابری میتواند در کاهش مشکلات زیرساختی و تکینکی حمایت نشده از طرف دولت نقش مهمی ایفا کند.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5

	Accelerated Internationalisation					
Q26	Utilising various applications on cloud connected to internet by means of mobile phones, tablets and PCs has assisted the company to alleviate the barriers in foreign markets and speed up the trend of internationalisation. İnternete bağlı olan mobil, tabletve PC üzerinde programların kullanılması şirketi dış piyasalarını elde etmek için sorunları gidermekte ve bu işlemi daha hızlı bir şekilde yapmasına yardım ede bilir? بهره گیری از انواع اپلیکیشنهای کاربردی موجود درموبایل، تبلت وکامپیوترمتصل به اینترنت میتواند شرکت را در کاهش موانع به دستیابی به بازار های خارجی کمک کرده و به آن سرعت بخشد	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
Q27	Our management believes that our international business could be developed and progressed more quickly by using various applications in smartphones, tablet and PCs. Yönetimimiz cesitli cep telefonu, tablet ve PC uygulamalari kullanarak uluslararasi islerimizi gelistirip ilerletecegimizi dusunuyor. مدیریت شرکت بر این باوراست که با بهره گیری از انواع اپلیکیشنهای موجود در موبایل، تبلت و کامپیوتر تجارت خارجی شرکت ما میتواند بسرعت توسعه یابد.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5

Part 2:   Background information for eliciting the firm's Cloud computing integration.

Q28	Year of establishment Şirketin kurulma yılı: سال تاسیس شرکت
Please specify the year	

Q29	Which year did you have the first internal deal? Şirketin kurulmasından sonra, ilk defa ne zaman uluslararası ticaret yaptınız? اولین بار درچه سالی مراوده بین المللی داشته اید ؟
Please specify the year	

Q30	Number of employees İşçilerinizin sayısı? <div dir="rtl">تعداد کارکنان شرکت؟</div>

○ 1-9 ○ 10-49 ○ 50-250 ○ >250 ○

Q31	In which industry does your firm operate internationally? Hangi yabancıendüstriyelde faaliyet ediyorsunuz? <div dir="rtl">در چه صنعتی فعالیت تجارت خارجی دارید؟</div>

<table>
<tr><td>

◉ Education آموزشی

○ Energy انرژی

○ Manufacturing تولید

○ General trading تجارت عمومی

○ Computer and IT کامپیوتر

○ Engineering and Consulting مهندسی و مشاوره خدماتی

○ Other (please specify)

</td><td>

○ Healthcare Industry صنایع پزشکی

○ Food Industry صنایع غذایی

○ Crafts Industry صنایع دستی

○ Service خدماتی

○ Tourism and traveling

○ Telecommunication

</td></tr>
</table>

Q32	Have you already purchased and/or downloaded any free application for business purposes either for your mobile phone, tablet or for PC? Acaba şu ana kadar şirket, dış ticaret işlemlerini geliştirmek için her hangi bir program yada hizmetlerini (geniş ağ işlemi) kendi mobil ve bilgisayariniz için satın aldınız yada bedava olarak internetten indirdiniz mi? <div dir="rtl">آیا تاکنون جهت تسهیل در امور تجارت خارجی شرکت هر گونه اپلیکیشن یا سرویسی (با پردازش ابری) برای موبایل و یا کامپیوترخود خریداری و یا بصورت مجانی از اینترنت دریافت کرده اید ؟</div>

◉ Yes ○ No

Q33	Please prioritize the following type of used applications according to the importance of your company use. Lütfen, aşağıda belirtilen programları şirket için önemli olma açısından sıralayın. <div dir="rtl">لطفا اپلیکشنهای کاربردی زیر را بر حسب اهمیت برای شرکت الویت بندی کنید.</div>

☐ ارتباطی صوتی Audio Communication

☐ امور بانکی و مالی Banking & Finance

☐ پیامک Email & Messaging

☐ ارتباط صوتی و تصویری Audio & Video Communication

☐ تبلیغاتی Promotional

☐ ذخیره سازی و نگهداری Storing and archiving

☐ وب سایت Domain and Website

☐ سرویس و نگهداری Service & Maintenance

☐ شبکه Networking

☐ جستجو Searching

☐ شبکه اجتماعی Socialising Networking

Q34	Do you store your business documents on cloud applications? Eğer bilgilerinizi internette saklıyorsunuz aşağıda bulunan hang programı (geniş ağ işlemi) kullanıyorsunuz? آیا تاکنون اطلاعات شرکت را در اپلیکشن های اینترنتی (با پردازش ابری) ذخیره سازی کرده اید ؟

○ فضاهای موجود در ایمیل E-mail spaces

○ Dropbox

○ Google Drive

○ OneDrive

○ iCloud

○ Other (please specify)

[   ]

Q35	Do you share your business documents on internet/cloud with other colleagues? Acaba siz şirket bilgiler ve belgelerini internet örtamında olan programlar (geniş ağ işlemi) araciliğiyla diğer iş arkadaşlarınızla paylaşıyorsunuz ? آیا شما اطلاعات ویا اسناد شرکت را توسط اپلیکشن های اینترنتی (ابر رایانه) از طریق با دیگر همکاران خود در شرکت به اشتراک می گذارید ؟

◉ Yes ○ No

Q36	Which one of the following application categories the company uses for its business purposes on your mobile phone, tablet, or PCs? Şirket, kendi ticari işlerini yurutmek için aşağıda bulunan hangi programları kullanıyor? <div dir="rtl">شرکت کدامین اپلیکشن های موجود در مبایل وکامپیوتر را جهت امور تجاری خود استفاده میکند؟</div>

☐ ارتباط صوتی Voice Communicationn	☐ شبکه سازی Networking
☐ ارتباطات صوتی و تصویری Audio & Visual	☐ وب سایت Domain and Website
☐ امور مالی و بانکی Finance & Banking	☐ حسابدای Accounting
☐ پست الکترونیکی Email	☐ شبکه اجتماعی Socializing
☐ تبلیغاتی Promotional	☐ ارسال پیام Messaging
☐ ذخیره سازی و نگهداری Storing and archiving	☐ جستجوی اطلاعات Searching information
☐ سرویس و نگهداری Service & Maintenance	☐ نظارتی Surveillance
☐ Other (please specify) [_____]	

Q37	Have you ever used any social networking for your business purpose? Eğer sosyal ağlardan kendi işiniz için yararlanıyorsunuz aşağıdakı programlardan en fazla hangisini kullanıyorsunuz? <div dir="rtl">آیا از شبکه های اجتماعی برای کسب و کار خود استفاده میکنید؟</div>

☐ Facebook	☐ WhatsApp
☐ Twitter	☐ Instagram
☐ LinkedIn	☐ Telegram
☐ Google Plus+	☐ imo
Other (please specify) [_____]	

Q38	In the case of requiring communicating with your business partners or customers in a foreign country, which one of the following choices would be your first choice? Kendi yurtdışında olan müşteri ve temsilcileriniz ile iletişim kurmak ihtiyac duyduğunuz zaman en çok hangi yöntemi kullanıyorsunuz? در صورت نیاز به برقراری ارتباط با نمایندگان و یا مشتریان خود در خارج از کشوربیشتر از کدام روش زیر استفاده میکنید؟

☐ Direct telephone and mobile phone   ☐ Through mobile and PC's applications

Q39	Which one of the following applications on your mobile phone and PC are your first communicative tools? Kendi yurtdışında olan müşteri ve temsilcileriniz ile iletişim kurmak ihtiyac duyduğunuz zaman en çok hangi programı kullanıyorsunuz? برای برقراری ارتباط با نمایندگان و یا مشتریان خود در خارج از کشوربیشتر از کدام کدام اپلیکشن و روش زیر استفاده میکنید؟

☐ Skype

☐ what's app

☑ Telegram

☐ imo

☐ Viber

☐ Other (please specify)

☑ Line

☐ ooVoo

☐   BBM

☐ FaceTime

☐ Tango

Q40	What is the internet speed? Kullandığınızinternetinhızınekadardir? سرعت اینترنت چقدر است؟

◉ <56Kbps

○ 56 Kbps – 512 Kbps

○ 512Kbps – 1 Mbps

○ 1 Mbps – 5 Mbps

○ >5 Mbps

○ Other (please specify)

41 - Kimlikbilgileri:

Name, Ad:	
Company, Şirket:	
City/Town, Şehir:	
Country, Ülke:	
Email, addresse-posta:	

To investigate the effectiveness of Cloud Computing Utilisation on accelerated internationalisation of SMEs from emerging markets

Gelişmekte olan piyasalarda, küçük ve orta boy şirketlerin uluslararası ticaretinihızlandıran geniş ağ işlemlerin performansı hakkında araştırma

End of questionnaire

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Appendix II

Export barriers and path to internationalization, Perception of export barriers by SMEs. E.T. Kahiya (2013) "Export barriers and path to internationalization: A comparison of conventional enterprises and international new ventures".

Barrier	All firms		CE		INV		SIG
	Mean	SD	Mean	SD	Mean	SD	Level
Dealing with strong New Zealand dollar	3.984	1.10	4.000	1.10	3.970	1.08	NS
High transportation costs	3.977	1.11	3.984	1.09	3.970	1.12	NS
Minimizing foreign exchange risk	3.868	0.98	3.839	1.08	3.896	0.89	NS
Insufficient productive capacity	3.829	1.09	3.774	1.07	3.881	1.10	NS
Cost of market development	3.612	0.98	3.965	0.89	3.285	0.99	0.003**
Pricing and promotion	3.597	1.17	3.284	1.18	3.887	1.17	0.006**
Low perception of export profitability	3.543	1.03	3.813	1.07	3.293	1.00	0.014*
Need to adapt products to foreign markets	3.488	1.21	3.200	1.19	3.754	1.24	0.011*
Financing exports (working capital)	3.481	0.95	3.219	0.97	3.723	0.94	0.015*
Knowing export procedures	3.450	1.15	3.944	1.18	2.916	1.13	0.000***
Foreign competition in overseas markets	3.411	1.16	3.187	1.19	3.618	1.13	0.090†
Lack of skilled and flexible labor	3.395	1.19	3.655	1.23	3.154	1.14	0.015*
Low cost to benefit expectations	3.388	1.22	3.779	1.23	3.026	1.20	0.000***
Foreign restrictions and regulations	3.388	1.17	3.710	1.21	3.090	1.15	0.004**
High cost of labor	3.357	1.21	3.468	1.20	3.254	1.22	NS
Knowing foreign business practices	3.318	1.20	3.564	1.28	3.090	1.07	0.026*
Product usage differences	3.295	0.93	3.758	0.90	2.866	0.98	0.000***
Knowing export procedures	3.295	1.24	3.516	1.22	3.090	1.25	0.064†
Inconsistent government export policy	3.178	1.26	3.387	1.25	2.985	1.23	0.092†
Competing with local firms	3.178	1.20	3.194	1.18	3.164	1.24	NS
Language and cultural barriers	3.171	0.91	3.428	1.183	2.910	1.01	0.015*
Lack of NZ government assistance	3.140	1.18	3.387	1.17	2.910	1.15	0.034*
Foreign tariff barriers	3.109	1.05	2.887	1.06	3.314	1.09	0.063†
Unfamiliarity with foreign laws	3.101	1.21	3.346	1.13	2.874	1.28	0.026*
Providing aftersales service and support	3.093	1.08	2.768	1.03	3.394	0.988	0.004**
Collecting and transferring funds	3.085	1.12	3.500	1.18	2.701	1.04	0.000***
Lack of management aspiration	3.070	1.20	3.339	1.20	2.821	1.15	0.014*
High perceived risk of selling abroad	3.054	1.20	3.258	1.14	2.866	1.24	0.094†
Lack of overseas marketing experience	3.047	1.13	3.351	1.16	2.766	1.10	0.011*
Locating overseas distributors	3.023	0.95	2.671	0.96	3.349	0.94	0.002**
Management focus on domestic market	3.023	1.16	2.806	1.18	3.258	1.10	0.027*
Lack of management time	2.984	1.17	2.726	1.21	3.224	1.09	0.025*
Shipping and distribution overseas	2.984	1.01	2.701	1.02	3.245	0.98	0.012**
Knowing how to market overseas	2.977	1.13	3.409	1.12	2.577	1.14	0.000***
High cost of overseas travel	2.969	1.10	3.262	1.10	2.698	1.11	0.010*
Locating distributors overseas	2.930	1.08	3.189	1.09	2.690	1.03	0.020*
Inability to identify foreign opportunities	2.868	1.17	3.319	1.27	2.451	1.07	0.000***
Handling export documentation	2.860	1.27	2.537	1.28	3.162	1.21	0.003**
Technically inferior products	2.752	1.18	2.823	1.25	2.687	1.12	NS
Quality assurance requirements	2.752	1.25	2.871	1.22	2.642	1.27	NS
Lack of export marketing effort	2.481	1.00	2.468	1.04	2.493	0.98	NS
Inflation and interest rates	2.434	1.01	2.726	0.98	2.164	1.10	0.011*

SD standard deviation

†*p*<0.10; *p*<0.05; **p*<0.01; ***p*<0.001

Appendix III

Leonidou Classification of Export Barriers

Classification of Export Barriers

Internal	**Informational**	Limited information to locate/analyze markets
		Problematic international market data
		Identifying foreign business opportunities
		Inability to contact overseas customers
	Functional	Lack of managerial time to deal with exports
		Inadequate/untrained personnel for exporting
		Lack of excess production capacity for exports
		Shortage of working capital to finance exports
	Marketing – **Product**	Developing new products for foreign markets
		Adapting export product design/style
		Meeting export product quality standards/specs
		Meeting export product packaging/labeling requirements
		Offering technical/aftersales service
	Price	Offering satisfactory prices to customers
		Difficulty in matching competitors' prices
		Granting credit facilities to foreign customers
	Distribution	Complexity of foreign distribution channels
		Accessing export distribution channels
		Obtaining reliable foreign representation
		Maintaining control over foreign middlemen
	Logistics	Difficulty in supplying inventory abroad
		Unavailability of warehousing facilities abroad
		Excessive transportation/insurance costs
	Promotion	Adjusting export promotional activities
External	**Procedural**	Unfamiliar exporting procedures/paperwork
		Problematic communication with overseas customers
		Slow collection of payments from abroad
	Governmental	Lack of home government assistance/incentives
		Unfavorable home rules and regulations
	Task – **Environmental** – **Economic**	Different foreign customer habits/attitudes
		Keen competition in overseas markets
		Poor/deteriorating economic conditions abroad
		Foreign currency exchange risks
	Political-Legal	Political instability in foreign markets
		Strict foreign rules and regulations
		High tariff and nontariff barriers
	Sociocultural	Unfamiliar foreign business practices
		Different sociocultural traits
		Verbal/nonverbal language differences

Barriers

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Appendix IV

Fit indices and their acceptable thresholds by Hooper, D. Coughlan, J. and Mullen, M. (2008)

Table 1: Fit indices and their acceptable thresholds

Fit Index	Acceptable Threshold Levels	Description
Absolute Fit Indices Chi-Square χ^2	Low χ^2 relative to degrees of freedom with an insignificant p value ($p > 0.05$)	
Relative χ^2 (χ^2/df)	2:1 (Tabachnik and Fidell, 2007) 3:1 (Kline, 2005)	Adjusts for sample size.
Root Mean Square Error of Approximation (RMSEA)	Values less than 0.07 (Steiger, 2007)	Has a known distribution. Favours parsimony. Values less than 0.03 represent excellent fit.
GFI	Values greater than 0.95	Scaled between 0 and 1, with higher values indicating better model fit. This statistic should be used with caution.
AGFI	Values greater than 0.95	Adjusts the GFI based on the number of parameters in the model. Values can fall outside the 0-1.0 range.
RMR	Good models have small RMR (Tabachnik and Fidell, 2007)	Residual based. The average squared differences between the residuals of the sample covariances and the residuals of the estimated covariances. Unstandardised.
SRMR	SRMR less than 0.08 (Hu and Bentler, 1999)	Standardised version of the RMR. Easier to interpret due to its standardised nature.
Incremental Fit Indices NFI	Values greater than 0.95	Assesses fit relative to a baseline model which assumes no covariances between the observed variables. Has a tendency to overestimate fit in small samples.
NNFI (TLI)	Values greater than 0.95	Non-normed, values can fall outside the 0-1 range. Favours parsimony. Performs well in simulation studies (Sharma et al, 2005; McDonald and Marsh, 1990)
CFI	Values greater than 0.95	Normed, 0-1 range.

Appendix V

Initial Model

Model Fit Summary – Initial Model

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	69	727.503	309	.000	2.354
Saturated model	378	.000	0		
Independence model	27	3754.390	351	.000	10.696

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.143	.796	.750	.650
Saturated model	.000	1.000		
Independence model	.443	.242	.184	.225

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.806	.780	.879	.860	.877
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.880	.710	.772
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	418.503	343.572	501.136
Saturated model	.000	.000	.000
Independence model	3403.390	3210.180	3603.931

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	3.219	1.852	1.520	2.217
Saturated model	.000	.000	.000	.000
Independence model	16.612	15.059	14.204	15.947

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.077	.070	.085	.000
Independence model	.207	.201	.213	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	865.503	885.018	1101.824	1170.824
Saturated model	756.000	862.909	2050.631	2428.631
Independence model	3808.390	3816.026	3900.863	3927.863

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	3.830	3.498	4.195	3.916
Saturated model	3.345	3.345	3.345	3.818
Independence model	16.851	15.996	17.739	16.885

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	110	115
Independence model	24	26

Scalar Estimates (Group number 1 - Initial model)
Maximum Likelihood Estimates
Regression Weights: (Group number 1 - Initial model)

			Estimate	S.E.	C.R.	P	Label
Q4INFO	<---	IB	1.000				
Q3INFO	<---	IB	.833	.073	11.466	***	
Q27AI	<---	AI	1.000				
Q26AI	<---	AI	.847	.085	10.005	***	
Q11OPER	<---	OB	1.000				
Q10OPER	<---	OB	.996	.086	11.558	***	
Q9OPER	<---	OB	-.025	.088	-.279	.780	
Q8OPER	<---	OB	1.084	.088	12.291	***	
Q7OPER	<---	OB	-.149	.087	-1.717	.086	
Q6OPER	<---	OB	1.059	.086	12.357	***	
Q20MARK	<---	MB	1.000				
Q19MARK	<---	MB	.164	.074	2.223	.026	
Q18MARK	<---	MB	.736	.048	15.360	***	
Q17MARK	<---	MB	-.070	.069	-1.004	.315	
Q16MARK	<---	MB	.051	.065	.775	.438	
Q15MARK	<---	MB	.799	.044	18.236	***	
Q14MARK	<---	MB	.991	.054	18.388	***	
Q13MARK	<---	MB	.900	.056	16.010	***	
Q25EN	<---	EB	1.000				
Q24EN	<---	EB	1.019	.081	12.508	***	
Q23EN	<---	EB	.075	.082	.910	.363	
Q22EN	<---	EB	1.136	.077	14.687	***	
INTcommunication	<---	CCU	1.000				
INTnetworking	<---	CCU	1.064	.080	13.315	***	
INTShare	<---	CCU	.093	.018	5.306	***	
INTstorage	<---	CCU	.805	.061	13.136	***	
INTapplication	<---	CCU	1.439	.137	10.538	***	

Standardized Regression Weights: (Group number 1 - Initial model)

			Estimate
Q4INFO	<---	IB	.808
Q3INFO	<---	IB	.729
Q27AI	<---	AI	.816
Q26AI	<---	AI	.685
Q11OPER	<---	OB	.738
Q10OPER	<---	OB	.761
Q9OPER	<---	OB	-.019
Q8OPER	<---	OB	.805
Q7OPER	<---	OB	-.118
Q6OPER	<---	OB	.809
Q20MARK	<---	MB	.884
Q19MARK	<---	MB	.151
Q18MARK	<---	MB	.791
Q17MARK	<---	MB	-.069
Q16MARK	<---	MB	.053
Q15MARK	<---	MB	.866
Q14MARK	<---	MB	.870
Q13MARK	<---	MB	.810
Q25EN	<---	EB	.839
Q24EN	<---	EB	.730
Q23EN	<---	EB	.063
Q22EN	<---	EB	.815
INTcommunication	<---	CCU	.764
INTnetworking	<---	CCU	.873
INTShare	<---	CCU	.367
INTstorage	<---	CCU	.859
INTapplication	<---	CCU	.700

Covariances: (Group number 1 - Initial model)

			Estimate	S.E.	C.R.	P	Label
IB	<-->	AI	.301	.039	7.774	***	
IB	<-->	OB	.329	.043	7.739	***	
IB	<-->	MB	.306	.045	6.839	***	
IB	<-->	EB	.317	.040	7.850	***	
IB	<-->	CCU	-.053	.080	-.663	.508	
AI	<-->	OB	.262	.036	7.284	***	
AI	<-->	MB	.209	.038	5.563	***	
AI	<-->	EB	.258	.035	7.406	***	
AI	<-->	CCU	-.096	.072	-1.318	.187	
OB	<-->	MB	.363	.047	7.727	***	
OB	<-->	EB	.328	.041	7.985	***	
OB	<-->	CCU	-.032	.070	-.458	.647	
MB	<-->	EB	.389	.047	8.328	***	
MB	<-->	CCU	.000	.089	.001	.999	
EB	<-->	CCU	.004	.074	.050	.960	

Correlations: (Group number 1 - Initial model)

			Estimate
IB	<-->	AI	.887
IB	<-->	OB	.927
IB	<-->	MB	.653
IB	<-->	EB	.855
IB	<-->	CCU	-.054
AI	<-->	OB	.822
AI	<-->	MB	.497
AI	<-->	EB	.778
AI	<-->	CCU	-.108
OB	<-->	MB	.826
OB	<-->	EB	.943
OB	<-->	CCU	-.035
MB	<-->	EB	.849
MB	<-->	CCU	.000
EB	<-->	CCU	.004

Variances: (Group number 1 - Initial model)

	Estimate	S.E.	C.R.	P	Label
IB	.379	.056	6.789	***	
AI	.304	.046	6.589	***	
OB	.333	.053	6.337	***	
MB	.579	.069	8.372	***	
EB	.363	.048	7.577	***	
CCU	2.552	.392	6.513	***	
e1	.202	.029	6.909	***	
e2	.232	.027	8.687	***	
e3	.153	.026	5.801	***	
e4	.247	.028	8.778	***	
e5	.279	.029	9.704	***	
e6	.240	.025	9.551	***	
e7	.551	.052	10.630	***	
e8	.212	.023	9.137	***	
e9	.524	.049	10.620	***	
e10	.197	.022	9.088	***	
e12	.661	.062	10.614	***	
e13	.188	.020	9.470	***	
e14	.591	.056	10.627	***	
e15	.523	.049	10.628	***	
e16	.123	.014	8.529	***	
e17	.183	.022	8.457	***	
e18	.246	.026	9.309	***	
e19	.153	.019	8.162	***	
e20	.329	.035	9.542	***	
e21	.514	.048	10.627	***	
e22	.236	.027	8.629	***	
e23	1.826	.207	8.812	***	
e24	.900	.143	6.307	***	
e25	.142	.014	10.435	***	
e26	.589	.087	6.802	***	
e27	5.487	.584	9.397	***	
e11	.161	.020	8.110	***	

Appendix VI

Final Model

Model Fit Summary– Final Model

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	60	274.712	171	.000	1.607
Saturated model	231	.000	0		
Independence model	21	3326.288	210	.000	15.839

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.043	.900	.866	.667
Saturated model	.000	1.000		
Independence model	.538	.215	.136	.195

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.917	.899	.967	.959	.967
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.814	.747	.787
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	103.712	62.376	152.968
Saturated model	.000	.000	.000
Independence model	3116.288	2933.175	3306.730

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.216	.459	.276	.677
Saturated model	.000	.000	.000	.000
Independence model	14.718	13.789	12.979	14.632

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.052	.040	.063	.385
Independence model	.256	.249	.264	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	394.712	407.654	600.209	660.209
Saturated model	462.000	511.824	1253.163	1484.163
Independence model	3368.288	3372.817	3440.211	3461.211

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.747	1.564	1.964	1.804
Saturated model	2.044	2.044	2.044	2.265
Independence model	14.904	14.094	15.747	14.924

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	167	179
Independence model	17	18

Scalar Estimates (Group number 1 - Final Model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Final Model)

			Estimate	S.E.	C.R.	P	Label
Q4INFO	<---	IB	1.000				
Q3INFO	<---	IB	.834	.074	11.255	***	par_1
Q27AI	<---	AI	1.000				
Q26AI	<---	AI	.848	.085	9.920	***	par_2
Q11OPER	<---	OB	1.000				
Q10OPER	<---	OB	.995	.087	11.495	***	par_3
Q8OPER	<---	OB	1.085	.089	12.215	***	par_4
Q6OPER	<---	OB	1.064	.087	12.283	***	par_5
Q20MARK	<---	MB	1.000				
Q18MARK	<---	MB	.674	.047	14.328	***	par_6
Q15MARK	<---	MB	.739	.043	17.151	***	par_7
Q14MARK	<---	MB	.999	.056	17.863	***	par_8
Q13MARK	<---	MB	.876	.051	17.021	***	par_9
Q25EN	<---	EB	1.000				
Q24EN	<---	EB	1.015	.083	12.237	***	par_10
Q22EN	<---	EB	1.132	.078	14.508	***	par_11
INTcommunication	<---	CCU	10.076	1.896	5.315	***	par_12
INTnetworking	<---	CCU	10.545	1.841	5.727	***	par_13
INTShare	<---	CCU	1.000				
INTstorage	<---	CCU	8.032	1.377	5.832	***	par_14
INTapplication	<---	CCU	14.386	2.600	5.533	***	par_15

Standardized Regression Weights: (Group number 1 - Final Model)

			Estimate
Q4INFO	<---	IB	.807
Q3INFO	<---	IB	.730
Q27AI	<---	AI	.816
Q26AI	<---	AI	.685
Q11OPER	<---	OB	.736
Q10OPER	<---	OB	.758
Q8OPER	<---	OB	.805
Q6OPER	<---	OB	.811
Q20MARK	<---	MB	.917
Q18MARK	<---	MB	.750
Q15MARK	<---	MB	.830
Q14MARK	<---	MB	.908
Q13MARK	<---	MB	.817
Q25EN	<---	EB	.840
Q24EN	<---	EB	.729
Q22EN	<---	EB	.814
INTcommunication	<---	CCU	.771
INTnetworking	<---	CCU	.867
INTShare	<---	CCU	.395
INTstorage	<---	CCU	.859
INTapplication	<---	CCU	.702

Covariances: (Group number 1 - Final Model)

			Estimate	S.E.	C.R.	P	Label
IB	<-->	AI	.301	.039	7.793	***	par_16
IB	<-->	OB	.329	.042	7.738	***	par_17
IB	<-->	MB	.314	.045	6.942	***	par_18
IB	<-->	EB	.317	.040	7.947	***	par_19
IB	<-->	CCU	-.005	.008	-.649	.516	par_20
AI	<-->	OB	.261	.036	7.259	***	par_21
AI	<-->	MB	.216	.038	5.626	***	par_22
AI	<-->	EB	.259	.035	7.460	***	par_23
AI	<-->	CCU	-.010	.007	-1.309	.191	par_24
OB	<-->	MB	.371	.048	7.742	***	par_25
OB	<-->	EB	.328	.041	7.965	***	par_26
OB	<-->	CCU	-.002	.007	-.343	.732	par_27
MB	<-->	EB	.399	.048	8.346	***	par_28
MB	<-->	CCU	.001	.009	.099	.922	par_29
EB	<-->	CCU	.000	.007	.000	1.000	par_30
e23	<-->	e25	-.102	.037	-2.733	.006	par_31
e13	<-->	e16	.061	.015	4.077	***	par_32
e17	<-->	e11	-.065	.016	-4.028	***	par_33

Correlations: (Group number 1 - Final Model

			Estimate
IB	<-->	AI	.887
IB	<-->	OB	.927
IB	<-->	MB	.647
IB	<-->	EB	.855
IB	<-->	CCU	-.053
AI	<-->	OB	.821
AI	<-->	MB	.497
AI	<-->	EB	.777
AI	<-->	CCU	-.110
OB	<-->	MB	.818
OB	<-->	EB	.945
OB	<-->	CCU	-.026
MB	<-->	EB	.838
MB	<-->	CCU	.007
EB	<-->	CCU	.000
e23	<-->	e25	-.206
e13	<-->	e16	.334
e17	<-->	e11	-.520

Variances: (Group number 1 - Final Model)

	Estimate	S.E.	C.R.	P	Label
IB	.378	.056	6.737	***	par_34
AI	.304	.046	6.564	***	par_35
OB	.332	.053	6.307	***	par_36
MB	.622	.071	8.750	***	par_37
EB	.364	.048	7.538	***	par_38
CCU	.026	.009	2.886	.004	par_39
e1	.202	.030	6.765	***	par_40
e2	.231	.027	8.555	***	par_41
e3	.153	.027	5.739	***	par_42
e4	.247	.028	8.731	***	par_43
e5	.280	.029	9.645	***	par_44
e6	.243	.026	9.506	***	par_45
e8	.213	.023	9.095	***	par_46
e10	.196	.022	9.094	***	par_47
e13	.219	.022	9.838	***	par_48
e16	.154	.017	9.076	***	par_49
e17	.132	.022	5.926	***	par_50
e18	.238	.024	9.726	***	par_51
e19	.152	.020	7.720	***	par_52
e20	.331	.035	9.415	***	par_53
e22	.238	.028	8.453	***	par_54
e23	1.776	.208	8.560	***	par_55
e24	.940	.142	6.609	***	par_56
e25	.139	.013	10.325	***	par_57
e26	.589	.086	6.838	***	par_58
e27	5.466	.583	9.374	***	par_59
e11	.118	.021	5.591	***	par_60

Appendix VII

Structural Model

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	67	262.577	164	.000	1.601
Saturated model	231	.000	0		
Independence model	21	3326.288	210	.000	15.839

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.042	.901	.861	.640
Saturated model	.000	1.000		
Independence model	.538	.215	.136	.195

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.921	.899	.969	.959	.968
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.781	.719	.756
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	98.577	58.285	146.790
Saturated model	.000	.000	.000
Independence model	3116.288	2933.175	3306.730

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.162	.436	.258	.650
Saturated model	.000	.000	.000	.000
Independence model	14.718	13.789	12.979	14.632

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.052	.040	.063	.400
Independence model	.256	.249	.264	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	396.577	411.028	626.049	693.049
Saturated model	462.000	511.824	1253.163	1484.163
Independence model	3368.288	3372.817	3440.211	3461.211

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.755	1.576	1.968	1.819
Saturated model	2.044	2.044	2.044	2.265
Independence model	14.904	14.094	15.747	14.924

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	168	180
Independence model	17	18

Scalar Estimates (Group number 1 - Structural Model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Structural Model)

			Estimate	S.E.	C.R.	P	Label
CCUInte	<---	MITIGATEDBARRIERS	-.060	.032	-1.842	.066	
IB	<---	CCUInte	.553	.278	1.987	.047	
EB	<---	CCUInte	.890	.266	3.339	***	
MB	<---	CCUInte	.946	.314	3.008	.003	
AI	<---	MITIGATEDBARRIERS	.998	.115	8.653	***	
OB	<---	CCUInte	.624	.281	2.224	.026	
INTcommunication	<---	CCUInte	9.558	1.665	5.739	***	
INTnetworking	<---	CCUInte	10.486	1.735	6.044	***	
INTShare	<---	CCUInte	.400	.088	4.531	***	
INTstorage	<---	CCUInte	8.729	1.428	6.113	***	
INTapplication	<---	CCUInte	15.109	2.609	5.792	***	
Q3INFO	<---	IB	1.000				
Q4INFO	<---	IB	.471	.482	.977	.329	
Q6OPER	<---	OB	1.066	.495	2.155	.031	
Q8OPER	<---	OB	1.000				
Q10OPER	<---	OB	.672	.440	1.528	.127	
Q11OPER	<---	OB	.800	.483	1.657	.098	
Q22EN	<---	EB	.617	.242	2.553	.011	
Q24EN	<---	EB	.767	.290	2.642	.008	
Q25EN	<---	EB	1.000				
Q13MARK	<---	MB	.786	.098	8.019	***	
Q14MARK	<---	MB	.870	.095	9.206	***	
Q15MARK	<---	MB	.593	.077	7.717	***	
Q18MARK	<---	MB	.549	.081	6.777	***	
Q20MARK	<---	MB	1.000				
Q6OPER	<---	MITIGATEDBARRIERS	1.397	.139	10.085	***	
Q8OPER	<---	MITIGATEDBARRIERS	1.416	.142	9.984	***	

			Estimate	S.E.	C.R.	P	Label
Q10OPER	<---	MITIGATEDBARRIERS	1.288	.135	9.523	***	
Q11OPER	<---	MITIGATEDBARRIERS	1.307	.140	9.368	***	
Q3INFO	<---	MITIGATEDBARRIERS	1.045	.122	8.587	***	
Q4INFO	<---	MITIGATEDBARRIERS	1.292	.136	9.536	***	
Q22EN	<---	MITIGATEDBARRIERS	1.505	.151	9.967	***	
Q24EN	<---	MITIGATEDBARRIERS	1.315	.147	8.938	***	
Q25EN	<---	MITIGATEDBARRIERS	1.308	.131	10.006	***	
Q13MARK	<---	MITIGATEDBARRIERS	1.240	.118	10.487	***	
Q14MARK	<---	MITIGATEDBARRIERS	1.459	.120	12.161	***	
Q15MARK	<---	MITIGATEDBARRIERS	1.103	.082	13.502	***	
Q18MARK	<---	MITIGATEDBARRIERS	.709	.057	12.469	***	
Q27AI	<---	AI	1.182	.128	9.225	***	
Q26AI	<---	AI	.846	.092	9.225	***	
Q20MARK	<---	MITIGATEDBARRIERS	1.410	.113	12.469	***	

Standardized Regression Weights: (Group number 1 - Structural Model)

			Estimate
CCUInte	<---	MITIGATEDBARRIERS	-.174
IB	<---	CCUInte	.287
EB	<---	CCUInte	.502
MB	<---	CCUInte	.283
AI	<---	MITIGATEDBARRIERS	.811
OB	<---	CCUInte	1.283
INTcommunication	<---	CCUInte	.703
INTnetworking	<---	CCUInte	.829
INTShare	<---	CCUInte	.382
INTstorage	<---	CCUInte	.897
INTapplication	<---	CCUInte	.708
Q3INFO	<---	IB	.422
Q4INFO	<---	IB	.184
Q6OPER	<---	OB	.106
Q8OPER	<---	OB	.096
Q10OPER	<---	OB	.067
Q11OPER	<---	OB	.077
Q22EN	<---	EB	.201
Q24EN	<---	EB	.248
Q25EN	<---	EB	.379
Q13MARK	<---	MB	.505
Q14MARK	<---	MB	.544
Q15MARK	<---	MB	.458
Q18MARK	<---	MB	.421
Q20MARK	<---	MB	.629
Q6OPER	<---	MITIGATEDBARRIERS	.830
Q8OPER	<---	MITIGATEDBARRIERS	.818
Q10OPER	<---	MITIGATEDBARRIERS	.765
Q11OPER	<---	MITIGATEDBARRIERS	.750
Q3INFO	<---	MITIGATEDBARRIERS	.668
Q4INFO	<---	MITIGATEDBARRIERS	.763
Q22EN	<---	MITIGATEDBARRIERS	.805
Q24EN	<---	MITIGATEDBARRIERS	.700

			Estimate
Q25EN	<---	MITIGATEDBARRIERS	.817
Q13MARK	<---	MITIGATEDBARRIERS	.659
Q14MARK	<---	MITIGATEDBARRIERS	.754
Q15MARK	<---	MITIGATEDBARRIERS	.705
Q18MARK	<---	MITIGATEDBARRIERS	.633
Q27AI	<---	AI	.816
Q26AI	<---	AI	.685
Q20MARK	<---	MITIGATEDBARRIERS	.733

Covariances: (Group number 1 - Structural Model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e18	.068	.016	4.344	***	
e16 <--> e19	-.080	.023	-3.449	***	
e10 <--> e15	-.043	.018	-2.435	.015	
e6 <--> e13	.116	.023	5.020	***	
e7 <--> e14	-.065	.015	-4.193	***	
e1 <--> e2	.486	.172	2.834	.005	

Correlations: (Group number 1 - Structural Model)

	Estimate
e17 <--> e18	.357
e16 <--> e19	-.760
e10 <--> e15	-.175
e6 <--> e13	.448
e7 <--> e14	-.380
e1 <--> e2	.300

Variances: (Group number 1 - Structural Model)

	Estimate	S.E.	C.R.	P	Label
e33	.201	.039	5.134	***	
e34	.023	.007	3.111	.002	
e21	.081	.091	.883	.377	
e23	.271	.045	6.033	***	
e20	-.004	.012	-.291	.771	
e22	.056	.028	1.967	.049	
e32	.104	.028	3.781	***	
e1	2.217	.257	8.631	***	
e2	1.188	.180	6.613	***	
e3	.139	.013	10.400	***	
e4	.439	.102	4.299	***	
e5	5.369	.587	9.146	***	
e6	.199	.092	2.156	.031	
e7	.230	.031	7.404	***	
e8	.194	.022	8.810	***	
e9	.215	.024	9.141	***	
e10	.247	.025	9.694	***	
e11	.279	.029	9.771	***	
e12	.239	.026	9.087	***	
e13	.340	.036	9.319	***	

	Estimate	S.E.	C.R.	P	Label
e14	.126	.028	4.492	***	
e15	.246	.028	8.886	***	
e16	.133	.028	4.725	***	
e17	.161	.017	9.196	***	
e18	.225	.023	9.951	***	
e19	.083	.030	2.798	.005	
e30	.153	.029	5.208	***	
e31	.247	.030	8.357	***	

Appendix VIII

Descriptive Data

```
FREQUENCIES VARIABLES=Q3INFO Q4INFO Q6OPER Q7OPER Q8OPER Q9OPER Q10OPER Q11OPER
Q13MARK Q14MARK Q15MARK Q16MARK Q17MARK Q18MARK Q19MARK Q20MARK Q22EN Q23EN Q24EN
Q25EN Q26AI Q27AI INTapplication INTstorage INTShare INTnetworking
INTcommunication
  /STATISTICS=STDDEV MINIMUM MAXIMUM SEMEAN MEAN MEDIAN MODE SUM
  /FORMAT=LIMIT(5)
  /ORDER=ANALYSIS.
```

Frequencies

Notes

Output Created		30-DEC-2016 22:51:47
Comments		
Input	Data	C:\Users\Sahab\Google Drive\Brunel University\Study\PhD\Themes\AFTER VIVA\Model\3\INTERNATIONALISATION.sav
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	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	227
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data.

Syntax		FREQUENCIES VARIABLES=Q3INFO Q4INFO Q6OPER Q7OPER Q8OPER Q9OPER Q10OPER Q11OPER Q13MARK Q14MARK Q15MARK Q16MARK Q17MARK Q18MARK Q19MARK Q20MARK Q22EN Q23EN Q24EN Q25EN Q26AI Q27AI INTapplication INTstorage INTShare INTnetworking INTcommunication
		  /STATISTICS=STDDEV MINIMUM MAXIMUM SEMEAN MEAN MEDIAN MODE SUM
		  /FORMAT=LIMIT(5)
		  /ORDER=ANALYSIS.

Resources	Processor Time	00:00:00.02
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[DataSet1] C:\Users\Sahab\Google Drive\Brunel University\Study\PhD\Themes\AFTER VIVA\Model\3\INTERNATIONALISATION.sav

Statistics

	N		Mean	Std. Error of Mean	Median	Mode	Std. Deviation	Minimum	Maximum	Sum
	Valid	Missing								
Q3INFO	227	0	3.91	.047	4.00	4	.705	2	5	888
Q4INFO	227	0	3.88	.051	4.00	4	.764	1	5	881
Q6OPER	227	0	3.83	.050	4.00	4	.757	1	5	870
Q7OPER	227	0	3.90	.048	4.00	4	.731	2	5	885
Q8OPER	227	0	4.00	.052	4.00	4	.779	2	5	909
Q9OPER	227	0	3.70	.049	4.00	4	.744	1	5	841
Q10OPER	227	0	3.82	.050	4.00	4	.757	1	5	867
Q11OPER	227	0	3.81	.052	4.00	4	.784	1	6	865
Q13MARK	227	0	3.84	.056	4.00	4	.847	1	5	872
Q14MARK	227	0	3.81	.058	4.00	4	.869	1	5	865
Q15MARK	227	0	4.03	.047	4.00	4	.703	2	5	914
Q16MARK	227	0	3.89	.048	4.00	4	.726	2	5	882
Q17MARK	227	0	3.86	.051	4.00	4	.772	1	6	877
Q18MARK	227	0	3.97	.047	4.00	4	.710	2	6	902
Q19MARK	227	0	3.86	.055	4.00	4	.824	1	5	876
Q20MARK	227	0	3.93	.057	4.00	4	.862	1	5	893
Q22EN	227	0	3.90	.056	4.00	4	.841	1	5	886
Q23EN	227	0	3.91	.048	4.00	4	.720	2	5	887
Q24EN	227	0	3.89	.056	4.00	4	.842	1	5	883
Q25EN	227	0	3.91	.048	4.00	4	.720	2	5	887
Q26AI	227	0	4.07	.045	4.00	4	.684	2	5	925
Q27AI	227	0	4.03	.045	4.00	4	.678	2	5	914
INTEapplication	227	0	6.59	.218	6.00	5	3.289	2	15	1497
INTEstorage	227	0	2.41	.100	2.00	1	1.501	1	6	547
INTEshare	227	0	1.79	.027	2.00	2	.406	1	2	407
INTEnetworking	227	0	3.15	.129	3.00	2	1.951	1	8	714
INTEcommunication	227	0	3.65	.139	3.00	2	2.097	1	10	828

Frequency Table

Q3INFO

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	9	4.0	4.0	4.0
	Neutral	40	17.6	17.6	21.6
	Agree	140	61.7	61.7	83.3
	Strongly Agree	38	16.7	16.7	100.0
	Total	227	100.0	100.0	

Q4INFO

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.4	.4	.4
	Disagree	10	4.4	4.4	4.8
	Neutral	45	19.8	19.8	24.7
	Agree	130	57.3	57.3	81.9
	Strongly Agree	41	18.1	18.1	100.0
	Total	227	100.0	100.0	

Q6OPER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.4	.4	.4
	Disagree	10	4.4	4.4	4.8
	Neutral	51	22.5	22.5	27.3
	Agree	129	56.8	56.8	84.1
	Strongly Agree	36	15.9	15.9	100.0
	Total	227	100.0	100.0	

Q7OPER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	13	5.7	5.7	5.7
	Neutral	34	15.0	15.0	20.7
	Agree	143	63.0	63.0	83.7
	Strongly Agree	37	16.3	16.3	100.0
	Total	227	100.0	100.0	

Q8OPER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	15	6.6	6.6	6.6
	Neutral	23	10.1	10.1	16.7
	Agree	135	59.5	59.5	76.2
	Strongly Agree	54	23.8	23.8	100.0
	Total	227	100.0	100.0	

Q9OPER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.4	.4	.4
	Disagree	14	6.2	6.2	6.6
	Neutral	58	25.6	25.6	32.2
	Agree	132	58.1	58.1	90.3
	Strongly Agree	22	9.7	9.7	100.0
	Total	227	100.0	100.0	

Q10OPER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.4	.4	.4
	Disagree	13	5.7	5.7	6.2
	Neutral	44	19.4	19.4	25.6
	Agree	137	60.4	60.4	85.9
	Strongly Agree	32	14.1	14.1	100.0
	Total	227	100.0	100.0	

Q13MARK

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	.9	.9	.9
	Disagree	16	7.0	7.0	7.9
	Neutral	42	18.5	18.5	26.4
	Agree	123	54.2	54.2	80.6
	Strongly Agree	44	19.4	19.4	100.0
	Total	227	100.0	100.0	

Q14MARK

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	.9	.9	.9
	Disagree	25	11.0	11.0	11.9
	Neutral	24	10.6	10.6	22.5
	Agree	139	61.2	61.2	83.7
	Strongly Agree	37	16.3	16.3	100.0
	Total	227	100.0	100.0	

Q15MARK

		Frequency	Percent	Valid Percent	Cumulative Percent
	Disagree	6	2.6	2.6	2.6
	Neutral	35	15.4	15.4	18.1
Valid	Agree	133	58.6	58.6	76.7
	Strongly Agree	53	23.3	23.3	100.0
	Total	227	100.0	100.0	

Q16MARK

		Frequency	Percent	Valid Percent	Cumulative Percent
	Disagree	14	6.2	6.2	6.2
	Neutral	32	14.1	14.1	20.3
Valid	Agree	147	64.8	64.8	85.0
	Strongly Agree	34	15.0	15.0	100.0
	Total	227	100.0	100.0	

Q18MARK

		Frequency	Percent	Valid Percent	Cumulative Percent
	Disagree	6	2.6	2.6	2.6
	Neutral	41	18.1	18.1	20.7
Valid	Agree	134	59.0	59.0	79.7
	Strongly Agree	45	19.8	19.8	99.6
	6	1	.4	.4	100.0
	Total	227	100.0	100.0	

Q19MARK

		Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Disagree	1	.4	.4	.4
	Disagree	21	9.3	9.3	9.7
	Neutral	26	11.5	11.5	21.1
Valid	Agree	140	61.7	61.7	82.8
	Strongly Agree	39	17.2	17.2	100.0
	Total	227	100.0	100.0	

Q20MARK

		Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Disagree	1	.4	.4	.4
	Disagree	22	9.7	9.7	10.1
	Neutral	20	8.8	8.8	18.9
Valid	Agree	132	58.1	58.1	77.1
	Strongly Agree	52	22.9	22.9	100.0
	Total	227	100.0	100.0	

Q22EN

		Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Disagree	3	1.3	1.3	1.3
	Disagree	10	4.4	4.4	5.7
	Neutral	44	19.4	19.4	25.1
Valid	Agree	119	52.4	52.4	77.5
	Strongly Agree	51	22.5	22.5	100.0
	Total	227	100.0	100.0	

Q23EN

		Frequency	Percent	Valid Percent	Cumulative Percent
	Disagree	10	4.4	4.4	4.4
	Neutral	40	17.6	17.6	22.0
Valid	Agree	138	60.8	60.8	82.8
	Strongly Agree	39	17.2	17.2	100.0
	Total	227	100.0	100.0	

Q24EN

		Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Disagree	3	1.3	1.3	1.3
	Disagree	11	4.8	4.8	6.2
	Neutral	43	18.9	18.9	25.1
Valid	Agree	121	53.3	53.3	78.4
	Strongly Agree	49	21.6	21.6	100.0
	Total	227	100.0	100.0	

Q25EN

		Frequency	Percent	Valid Percent	Cumulative Percent
	Disagree	10	4.4	4.4	4.4
	Neutral	40	17.6	17.6	22.0
Valid	Agree	138	60.8	60.8	82.8
	Strongly Agree	39	17.2	17.2	100.0
	Total	227	100.0	100.0	

Q26AI

		Frequency	Percent	Valid Percent	Cumulative Percent
	Disagree	5	2.2	2.2	2.2
	Neutral	30	13.2	13.2	15.4
Valid	Agree	135	59.5	59.5	74.9
	Strongly Agree	57	25.1	25.1	100.0
	Total	227	100.0	100.0	

Q27AI

		Frequency	Percent	Valid Percent	Cumulative Percent
	Disagree	5	2.2	2.2	2.2
	Neutral	34	15.0	15.0	17.2
Valid	Agree	138	60.8	60.8	78.0
	Strongly Agree	50	22.0	22.0	100.0
	Total	227	100.0	100.0	

INTEshare

		Frequency	Percent	Valid Percent	Cumulative Percent
	1	47	20.7	20.7	20.7
Valid	2	180	79.3	79.3	100.0
	Total	227	100.0	100.0	

DESCRIPTIVES VARIABLES=Q3INFO Q4INFO Q6OPER Q7OPER Q8OPER Q9OPER Q10OPER Q11OPER Q13MARK Q14MARK Q15MARK Q16MARK Q17MARK Q18MARK Q19MARK Q20MARK Q22EN Q23EN Q24EN Q25EN Q26AI Q27AI INTapplication INTstorage INTShare INTnetworking INTcommunication
 /STATISTICS=MEAN SUM STDDEV VARIANCE MIN MAX SEMEAN.

Descriptive

Notes

Output Created		30-DEC-2016 22:55:42
Comments		
Input	Data	C:\Users\Sahab\Google Drive\Brunel University\Study\PhD\Themes\AFTER VIVA\Model\3\INTERNATIONALISATION.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	227
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing.
	Cases Used	All non-missing data are used.
Syntax		DESCRIPTIVES VARIABLES=Q3INFO Q4INFO Q6OPER Q7OPER Q8OPER Q9OPER Q10OPER Q11OPER Q13MARK Q14MARK Q15MARK Q16MARK Q17MARK Q18MARK Q19MARK Q20MARK Q22EN Q23EN Q24EN Q25EN Q26AI Q27AI INTapplication INTstorage INTShare INTnetworking INTcommunication /STATISTICS=MEAN SUM STDDEV VARIANCE MIN MAX SEMEAN.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.03

[DataSet1] C:\Users\Sahab\Google Drive\Brunel University\Study\PhD\Themes\AFTER VIVA\Model\3\INTERNATIONALISATION.sav

Descriptive Statistics

	N	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Q3INFO	227	2	5	888	3.91	.047	.705	.497
Q4INFO	227	1	5	881	3.88	.051	.764	.583
Q6OPER	227	1	5	870	3.83	.050	.757	.574
Q7OPER	227	2	5	885	3.90	.048	.731	.534
Q8OPER	227	2	5	909	4.00	.052	.779	.606
Q9OPER	227	1	5	841	3.70	.049	.744	.554
Q10OPER	227	1	5	867	3.82	.050	.757	.573
Q11OPER	227	1	6	865	3.81	.052	.784	.614
Q13MARK	227	1	5	872	3.84	.056	.847	.718
Q14MARK	227	1	5	865	3.81	.058	.869	.756
Q15MARK	227	2	5	914	4.03	.047	.703	.495
Q16MARK	227	2	5	882	3.89	.048	.726	.527
Q17MARK	227	1	6	877	3.86	.051	.772	.596
Q18MARK	227	2	6	902	3.97	.047	.710	.504
Q19MARK	227	1	5	876	3.86	.055	.824	.679
Q20MARK	227	1	5	893	3.93	.057	.862	.743
Q22EN	227	1	5	886	3.90	.056	.841	.707
Q23EN	227	2	5	887	3.91	.048	.720	.518
Q24EN	227	1	5	883	3.89	.056	.842	.709
Q25EN	227	2	5	887	3.91	.048	.720	.518
Q26AI	227	2	5	925	4.07	.045	.684	.468
Q27AI	227	2	5	914	4.03	.045	.678	.459

INTEapplication	227	2	15	1497	6.59	.218	3.289	10.817
INTEstorage	227	1	6	547	2.41	.100	1.501	2.252
INTEshare	227	1	2	407	1.79	.027	.406	.165
INTEnetworking	227	1	8	714	3.15	.129	1.951	3.806
INTEcommunication	227	1	10	828	3.65	.139	2.097	4.397
Valid N (listwise)	227							

FACTOR
  /VARIABLES Q3INFO Q4INFO Q6OPER Q7OPER Q8OPER Q9OPER Q10OPER Q11OPER Q13MARK
Q14MARK Q15MARK Q16MARK Q17MARK Q18MARK Q19MARK Q20MARK Q22EN Q23EN Q24EN Q25EN
Q26AI Q27AI INTapplication INTstorage INTShare INTnetworking INTcommunication
  /MISSING LISTWISE
  /ANALYSIS Q3INFO Q4INFO Q6OPER Q7OPER Q8OPER Q9OPER Q10OPER Q11OPER Q13MARK Q14MARK
Q15MARK Q16MARK Q17MARK Q18MARK Q19MARK Q20MARK Q22EN Q23EN Q24EN Q25EN Q26AI
Q27AI INTapplication INTstorage INTShare INTnetworking INTcommunication
  /PRINT UNIVARIATE INITIAL CORRELATION SIG DET KMO EXTRACTION ROTATION FSCORE
  /FORMAT SORT BLANK(.30)
  /PLOT EIGEN
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION ML
  /CRITERIA ITERATE(25) DELTA(0)
  /ROTATION OBLIMIN
  /SAVE REG(ALL).

Factor Analysis

Notes

Output Created		30-DEC-2016 22:57:53
Comments		
Input	Data	C:\Users\Sahab\Google Drive\Brunel University\Study\PhD\Themes\AFTER VIVA\Model\3\INTERNATIONALISATION.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	227
Missing Value Handling	Definition of Missing	MISSING=EXCLUDE: User-defined missing values are treated as missing.
	Cases Used	LISTWISE: Statistics are based on cases with no missing values for any variable used.

Syntax		FACTOR
		  /VARIABLES Q3INFO Q4INFO Q6OPER Q7OPER Q8OPER Q9OPER Q10OPER Q11OPER Q13MARK Q14MARK Q15MARK Q16MARK Q17MARK Q18MARK Q19MARK Q20MARK Q22EN Q23EN Q24EN Q25EN Q26AI Q27AI INTapplication INTstorage INTShare INTnetworking INTcommunication
		  /MISSING LISTWISE
		  /ANALYSIS Q3INFO Q4INFO Q6OPER Q7OPER Q8OPER Q9OPER Q10OPER Q11OPER Q13MARK Q14MARK Q15MARK Q16MARK Q17MARK Q18MARK Q19MARK Q20MARK Q22EN Q23EN Q24EN Q25EN Q26AI Q27AI INTapplication INTstorage INTShare INTnetworking INTcommunication
		  /PRINT UNIVARIATE INITIAL CORRELATION SIG DET KMO EXTRACTION ROTATION FSCORE
		  /FORMAT SORT BLANK(.30)
		  /PLOT EIGEN
		  /CRITERIA MINEIGEN(1) ITERATE(25)
		  /EXTRACTION ML
		  /CRITERIA ITERATE(25) DELTA(0)
		  /ROTATION OBLIMIN
		  /SAVE REG(ALL).

Resources	Processor Time	00:00:00.39
	Elapsed Time	00:00:00.42
	Maximum Memory Required	91692 (89.543K) bytes
Variables Created	FAC1_2	Regression factor score 1
	FAC2_2	Regression factor score 2
	FAC3_2	Regression factor score 3
	FAC4_2	Regression factor score 4

[DataSet1] C:\Users\Sahab\Google Drive\Brunel University\Study\PhD\Themes\AFTER VIVA\Model\3\INTERNATIONALISATION.sav

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
Q3INFO	3.91	.705	227
Q4INFO	3.88	.764	227
Q6OPER	3.83	.757	227
Q7OPER	3.90	.731	227
Q8OPER	4.00	.779	227
Q9OPER	3.70	.744	227
Q10OPER	3.82	.757	227
Q11OPER	3.81	.784	227
Q13MARK	3.84	.847	227
Q14MARK	3.81	.869	227
Q15MARK	4.03	.703	227
Q16MARK	3.89	.726	227
Q17MARK	3.86	.772	227
Q18MARK	3.97	.710	227
Q19MARK	3.86	.824	227
Q20MARK	3.93	.862	227
Q22EN	3.90	.841	227
Q23EN	3.91	.720	227
Q24EN	3.89	.842	227
Q25EN	3.91	.720	227
Q26AI	4.07	.684	227
Q27AI	4.03	.678	227
INTEapplication	6.59	3.289	227
INTEstorage	2.41	1.501	227
INTEshare	1.79	.406	227
INTEnetworking	3.15	1.951	227
INTEcommunication	3.65	2.097	227

Correlation Matrixa

Correlation

	Q3INFO	Q4INFO	Q6OPER	Q7OPER	Q8OPER	Q9OPER	Q10OPER	Q11OPER	Q13MARK	Q14MARK	Q15MARK	Q16MARK	Q17MARK	Q18MARK	Q19MARK	Q20MARK	Q22EN	Q23EN	Q24EN	Q25EN	Q26AI	Q27AI	INTEapplication	INTEstorage	INTEshare	INTEnetworking	INTEcommunicatio
Q3INFO	1.000	.589	.511	-.043	.533	.009	.550	.426	.406	.464	.487	.093	.018	.376	-.082	.435	.516	-.034	.647	.481	.390	.588	.048	.018	.029	-.013	-.051
Q4INFO	.589	1.000	.654	-.133	.619	.024	.598	.494	.381	.459	.451	.047	.047	.329	-.069	.465	.595	.068	.551	.479	.508	.553	-.055	-.089	.020	-.033	-.062
Q6OPER	.511	.654	1.000	-.063	.662	-.057	.603	.572	.517	.617	.573	.118	.006	.510	.019	.613	.620	-.004	.582	.661	.426	.509	.010	-.021	.031	.002	-.040
Q7OPER	-.043	-.133	-.063	1.000	-.147	.270	-.145	-.072	-.076	-.016	-.046	.112	.266	-.031	.432	-.074	-.102	.176	-.047	.007	-.047	-.173	.290	.296	.138	.333	.314
Q8OPER	.533	.619	.662	-.147	1.000	-.021	.609	.589	.504	.550	.517	.079	-.021	.513	-.089	.600	.676	.040	.507	.609	.473	.578	-.020	-.024	-.011	.008	.012
Q9OPER	.009	.024	-.057	.270	-.021	1.000	-.001	-.028	.010	.009	-.095	.076	.261	-.048	.141	-.024	.147	.082	.007	-.017	.007	.177	.140	.148	.231	.202	—
Q10OPER	.550	.598	.603	-.145	.609	-.001	1.000	.598	.403	.559	.516	.075	-.027	.534	.009	.510	.556	.002	.552	.554	.436	.544	.002	-.036	.022	-.042	-.040
Q11OPER	.426	.494	.572	-.072	.589	-.028	.598	1.000	.534	.590	.587	.063	-.021	.540	-.014	.616	.583	.086	.464	.628	.365	.476	-.021	-.043	.029	-.022	-.022
Q13MARK	.406	.381	.517	-.076	.504	.010	.403	.534	1.000	.746	.668	.049	-.108	.589	.114	.755	.525	.027	.459	.614	.280	.346	.029	-.011	.046	-.045	-.101
Q14MARK	.464	.459	.617	-.016	.550	.009	.559	.590	.746	1.000	.739	.036	-.019	.666	.166	.745	.586	-.007	.558	.714	.284	.369	.016	-.056	.076	-.007	-.063
Q15MARK	.487	.451	.573	-.046	.517	-.095	.516	.587	.668	.739	1.000	.067	-.124	.746	.159	.769	.558	-.021	.528	.652	.253	.342	-.001	.006	-.012	-.019	-.030
Q16MARK	.093	.047	.118	.112	.079	.076	.075	.063	.049	.036	.067	1.000	.288	-.014	.121	.030	.076	.259	.117	.039	.026	.042	.394	.344	.159	.318	.378
Q17MARK	.018	.047	.006	.266	-.021	.261	-.027	-.021	-.108	-.019	-.124	.288	1.000	-.087	.213	-.020	-.034	.351	.004	-.031	-.014	.032	.347	.316	.163	.374	.298
Q18MARK	.376	.329	.510	-.031	.513	-.048	.534	.540	.589	.666	.746	-.014	-.087	1.000	.130	.699	.478	.056	.491	.576	.241	.323	.041	.010	.012	-.052	-.021
Q19MARK	-.082	-.069	.019	.432	-.089	.141	.009	-.014	.114	.166	.159	.121	.213	.130	1.000	.143	-.058	.090	.003	.075	-.130	-.175	.263	.330	.256	.351	.312
Q20MARK	.435	.465	.613	-.074	.600	-.024	.510	.616	.755	.745	.769	.030	-.020	.699	.143	1.000	.546	.040	.532	.668	.294	.389	.062	.045	.062	.061	-.006
Q22EN	.516	.595	.620	-.102	.676	.147	.583	.583	.525	.586	.558	.076	-.034	.478	-.058	.546	1.000	.058	.585	.694	.513	.571	.018	-.035	-.007	-.048	-.067
Q23EN	-.034	.068	-.004	.176	.040	.147	.002	.086	.027	-.007	-.021	.259	.351	.056	.090	.040	.058	1.000	.107	.052	.032	.014	.324	.334	.237	.334	.301
Q24EN	.647	.551	.582	-.047	.507	.082	.552	.464	.459	.558	.528	.117	.004	.491	.003	.532	.585	.107	1.000	.604	.352	.478	.053	.001	.088	-.028	-.025
Q25EN	.481	.479	.661	.007	.609	.007	.554	.628	.614	.714	.652	.039	-.031	.576	.075	.668	.694	.052	.604	1.000	.419	.468	.033	.039	.055	.054	-.028
Q26AI	.390	.508	.426	-.047	.473	.007	.436	.365	.280	.284	.253	.026	-.014	.241	-.130	.294	.513	.032	.352	.419	1.000	.559	-.024	-.052	-.052	-.101	-.074
Q27AI	.588	.553	.509	-.173	.578	.007	.544	.476	.346	.369	.342	.042	.032	.323	-.175	.389	.571	.014	.478	.468	.559	1.000	-.049	-.045	-.028	-.063	-.124
INTEapplication	.048	-.055	.010	.290	-.020	.177	.002	-.021	.029	.016	-.001	.394	.347	.041	.263	.062	.018	.324	.053	.033	-.055	-.049	1.000	.627	.315	.584	.528
INTEstorage	.018	-.089	-.021	.296	-.024	.140	-.036	-.043	-.011	-.056	.006	.344	.316	.010	.330	.045	-.035	.334	.001	.039	-.052	-.045	.627	1.000	.379	.746	.631
INTEshare	.029	.020	.031	.138	-.011	.148	.022	.029	.046	.076	-.012	.159	.163	.012	.256	.062	-.007	.237	.088	.055	-.052	-.028	.315	.379	1.000	.289	.184
INTEnetworking	-.013	-.033	.002	.333	.008	.231	-.042	-.022	-.045	-.007	-.019	.318	.374	-.052	.351	.061	-.048	.334	-.028	.054	-.101	-.063	.584	.746	.289	1.000	.702
INTEcommunication	-.051	-.062	-.040	.314	.012	.202	-.040	-.022	-.101	-.063	-.030	.378	.298	-.021	.312	-.006	-.067	.301	-.025	-.028	-.074	-.124	.528	.631	.184	.702	1.000

Sig. (1-tailed)

	Q3INFO	Q4INFO	Q6OPER	Q7OPER	Q8OPER	Q9OPER	Q10OPER	Q11OPER	Q13MARK	Q14MARK	Q15MARK	Q16MARK	Q17MARK	Q18MARK	Q19MARK	Q20MARK	Q22EN	Q23EN	Q24EN	Q25EN	Q26AI	Q27AI	INTEapplication	INTEstorage	INTEshare	INTEnetworking	INTEcommunicatio
Q3INFO		.000	.000	.259	.000	.445	.000	.000	.000	.000	.000	.082	.391	.000	.108	.000	.000	.307	.000	.000	.000	.000	.238	.396	.333	.422	.222
Q4INFO	.000		.000	.023	.000	.362	.000	.000	.000	.000	.000	.240	.239	.000	.150	.000	.000	.152	.000	.000	.000	.000	.207	.092	.382	.311	.175
Q6OPER	.000	.000		.173	.000	.198	.000	.000	.000	.000	.000	.038	.463	.000	.389	.000	.000	.475	.000	.000	.000	.000	.441	.376	.323	.491	.274
Q7OPER	.259	.023	.173		.013	.000	.014	.139	.127	.403	.243	.047	.000	.322	.000	.134	.062	.004	.241	.456	.242	.004	.000	.000	.019	.000	.000
Q8OPER	.000	.000	.000	.013		.378	.000	.000	.000	.000	.000	.117	.376	.000	.092	.000	.000	.273	.000	.000	.000	.000	.382	.358	.434	.450	.430
Q9OPER	.445	.362	.198	.000	.378		.495	.337	.443	.447	.077	.126	.000	.234	.017	.362	.317	.013	.109	.460	.398	.460	.004	.017	.013	.000	.001
Q10OPER	.000	.000	.000	.014	.000	.495		.000	.000	.000	.000	.130	.342	.000	.448	.000	.000	.490	.000	.000	.000	.000	.485	.296	.372	.264	.273
Q11OPER	.000	.000	.000	.139	.000	.337	.000		.000	.000	.000	.173	.377	.000	.416	.000	.000	.097	.000	.000	.000	.000	.375	.260	.331	.368	.371
Q13MARK	.000	.000	.000	.127	.000	.443	.000	.000		.000	.000	.229	.053	.000	.044	.000	.000	.345	.000	.000	.000	.000	.331	.433	.247	.251	.064
Q14MARK	.000	.000	.000	.403	.000	.447	.000	.000	.000		.000	.297	.388	.000	.459	.000	.000	.459	.000	.000	.000	.000	.403	.202	.126	.457	.171
Q15MARK	.000	.000	.000	.243	.000	.077	.000	.000	.000	.000		.159	.031	.000	.008	.000	.000	.374	.000	.000	.000	.000	.494	.461	.430	.388	.328
Q16MARK	.082	.240	.038	.047	.117	.126	.130	.173	.229	.297	.159		.000	.414	.035	.325	.127	.000	.039	.280	.347	.264	.000	.000	.008	.000	.000
Q17MARK	.391	.239	.463	.000	.376	.000	.342	.377	.053	.388	.031	.000		.095	.001	.381	.305	.000	.476	.322	.417	.314	.000	.000	.007	.000	.000
Q18MARK	.000	.000	.000	.322	.000	.234	.000	.000	.000	.000	.000	.414	.095		.025	.000	.000	.201	.000	.000	.000	.000	.270	.439	.431	.220	.376
Q19MARK	.108	.150	.389	.000	.092	.017	.448	.416	.044	.006	.008	.035	.001	.025		.016	.192	.089	.482	.131	.025	.004	.000	.000	.000	.000	.000
Q20MARK	.000	.000	.000	.134	.000	.362	.000	.000	.000	.000	.000	.325	.381	.000	.016		.000	.274	.000	.000	.000	.000	.175	.250	.177	.180	.467
Q22EN	.000	.000	.000	.062	.000	.317	.000	.000	.000	.000	.000	.127	.305	.000	.192	.000		.191	.000	.000	.000	.000	.395	.300	.457	.236	.157
Q23EN	.307	.152	.475	.004	.273	.013	.490	.097	.345	.459	.374	.000	.000	.201	.089	.274	.191		.054	.219	.315	.416	.000	.000	.000	.000	.000
Q24EN	.000	.000	.000	.241	.000	.109	.000	.000	.000	.000	.000	.039	.476	.000	.482	.000	.000	.054		.000	.000	.000	.216	.495	.092	.338	.356
Q25EN	.000	.000	.000	.456	.000	.460	.000	.000	.000	.000	.000	.280	.322	.000	.131	.000	.000	.219	.000		.000	.000	.312	.278	.204	.210	.340
Q26AI	.000	.000	.000	.242	.000	.398	.000	.000	.000	.000	.000	.347	.417	.000	.025	.000	.000	.315	.000	.000		.000	.204	.220	.362	.065	.133
Q27AI	.000	.000	.000	.004	.000	.460	.000	.000	.000	.000	.000	.264	.314	.000	.004	.000	.000	.416	.000	.000	.000		.232	.248	.336	.172	.031
INTEapplication	.238	.207	.441	.000	.382	.004	.485	.375	.331	.403	.494	.000	.000	.270	.000	.175	.395	.000	.216	.312	.204	.232		.000	.000	.000	.000
INTEstorage	.396	.092	.376	.000	.358	.017	.296	.260	.433	.202	.461	.000	.000	.439	.000	.250	.300	.000	.495	.278	.220	.248	.000		.000	.000	.000
INTEshare	.333	.382	.323	.019	.434	.013	.372	.331	.247	.126	.430	.008	.007	.431	.000	.177	.457	.000	.092	.204	.362	.336	.000	.000		.000	.003
INTEnetworking	.422	.311	.491	.000	.450	.000	.264	.368	.251	.457	.388	.000	.000	.220	.000	.180	.236	.000	.338	.210	.065	.172	.000	.000	.000		.000
INTEcommunication	.222	.175	.274	.000	.430	.001	.273	.371	.064	.171	.328	.000	.000	.376	.000	.467	.157	.000	.356	.340	.133	.031	.000	.000	.003	.000	

a. Determinant = 6.10E-008

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.911
Bartlett's Test of Sphericity	Approx. Chi-Square	3591.035
	df	351
	Sig.	.000

Communalities

	Initial	Extraction
Q3INFO	.608	.509
Q4INFO	.640	.622
Q6OPER	.655	.638
Q7OPER	.351	.374
Q8OPER	.659	.668
Q9OPER	.191	.187
Q10OPER	.611	.566
Q11OPER	.571	.546
Q13MARK	.690	.653
Q14MARK	.755	.786
Q15MARK	.759	.759
Q16MARK	.291	.202
Q17MARK	.330	.296
Q18MARK	.668	.634
Q19MARK	.384	.400
Q20MARK	.766	.784
Q22EN	.660	.644
Q23EN	.297	.188
Q24EN	.609	.546
Q25EN	.704	.672
Q26AI	.437	.417
Q27AI	.572	.588
INTEapplication	.503	.508
INTEstorage	.676	.736
INTEshare	.238	.164
INTEnetworking	.700	.750
INTEcommunication	.587	.596

Extraction Method: Maximum Likelihood.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	9.078	33.624	33.624	8.662	32.082	32.082	6.985
2	4.259	15.772	49.396	3.724	13.793	45.875	3.642
3	1.826	6.762	56.159	1.456	5.393	51.268	6.779
4	1.177	4.358	60.517	.591	2.187	53.455	2.060
5	.953	3.531	64.048				
6	.906	3.355	67.403				
7	.816	3.024	70.427				
8	.796	2.947	73.374				
9	.687	2.545	75.919				
10	.670	2.480	78.399				
11	.621	2.298	80.697				
12	.553	2.048	82.745				
13	.519	1.921	84.666				
14	.462	1.712	86.378				
15	.444	1.644	88.022				
16	.413	1.528	89.550				
17	.384	1.423	90.974				
18	.356	1.320	92.293				
19	.322	1.192	93.485				
20	.314	1.164	94.649				
21	.278	1.028	95.677				
22	.241	.893	96.570				
23	.232	.859	97.429				
24	.196	.727	98.156				
25	.188	.697	98.853				
26	.169	.626	99.479				
27	.141	.521	100.000				

Extraction Method: Maximum Likelihood.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.
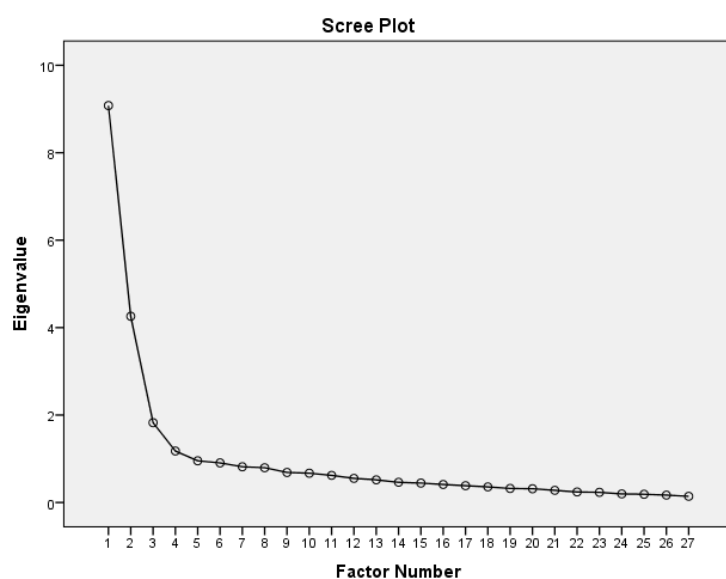
Factor Matrix^a

	Factor			
	1	2	3	4
Q14MARK	.837			
Q20MARK	.836			
Q25EN	.815			
Q15MARK	.814			
Q6OPER	.780			
Q22EN	.767			
Q8OPER	.763			
Q13MARK	.755			
Q18MARK	.738			
Q11OPER	.736			
Q10OPER	.717			
Q24EN	.704			
Q4INFO	.672		.399	
Q3INFO	.643		.303	
Q27AI	.602		.463	
Q26AI	.486		.413	
INTEnetworking		.862		
INTEstorage		.844		
INTEcommunication		.762		
INTEapplication		.712		
Q19MARK		.451	-.328	
Q17MARK		.440		
Q7OPER		.428		.412
Q16MARK		.422		
Q23EN		.412		
INTEshare		.384		
Q9OPER				.337

Extraction Method: Maximum Likelihood.

a. 4 factors extracted. 5 iterations required.

Goodness-of-fit Test

Chi-Square	df	Sig.
382.288	249	.000

Pattern Matrix[a]

	Factor			
	1	2	3	4
Q27AI	.782			
Q4INFO	.767			
Q26AI	.683			
Q3INFO	.644			
Q8OPER	.637			
Q22EN	.629			
Q10OPER	.598			
Q6OPER	.569		-.345	
Q24EN	.544			
INTEstorage		.910		
INTEnetworking		.869		
INTEcommunication		.791		
INTEapplication		.680		
Q16MARK		.425		
Q23EN		.364		
INTEshare				
Q15MARK			-.821	
Q20MARK			-.806	
Q14MARK			-.780	
Q13MARK			-.764	
Q18MARK			-.760	
Q25EN	.400		-.541	
Q11OPER	.409		-.441	
Q7OPER				.530
Q9OPER				.419
Q19MARK	-.319		-.364	.398
Q17MARK				.343

Extraction Method: Maximum Likelihood.
 Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 21 iterations.

Structure Matrix

	Factor			
	1	2	3	4
Q4INFO	.786		-.425	
Q8OPER	.774		-.572	
Q22EN	.766		-.585	
Q27AI	.762		-.333	
Q6OPER	.738		-.628	
Q10OPER	.721		-.543	
Q3INFO	.702		-.446	
Q24EN	.677		-.561	
Q26AI	.641			
INTEnetworking		.864		.467
INTEstorage		.850		.389
INTEcommunication		.767		.391
INTEapplication		.710		.425
Q16MARK		.436		
Q23EN		.418		
INTEshare		.374		.328
Q20MARK	.536		-.872	
Q14MARK	.549		-.864	
Q15MARK	.501		-.863	
Q13MARK	.462		-.803	
Q18MARK	.445		-.789	
Q25EN	.663		-.742	
Q11OPER	.631		-.642	
Q7OPER		.386		.592
Q19MARK		.391		.514
Q17MARK		.441		.473
Q9OPER				.424

Extraction Method: Maximum Likelihood.
 Rotation Method: Oblimin with Kaiser Normalization.

Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	-.014	-.494	-.067
2	-.014	1.000	-.046	.546
3	-.494	-.046	1.000	-.031
4	-.067	.546	-.031	1.000

Extraction Method: Maximum Likelihood.
 Rotation Method: Oblimin with Kaiser Normalization.

Factor Score Coefficient Matrix

	Factor			
	1	2	3	4
Q3INFO	.113	.012	.013	.046
Q4INFO	.180	.006	.038	.063
Q6OPER	.120	.011	-.029	.034
Q7OPER	-.019	.040	-.012	.289
Q8OPER	.155	.028	-.006	-.152
Q9OPER	.013	.020	.009	.174
Q10OPER	.111	.006	-.007	-.003
Q11OPER	.058	.004	-.045	-.045
Q13MARK	-.031	-.018	-.146	-.007
Q14MARK	-.013	-.037	-.234	.245
Q15MARK	-.047	-.011	-.224	-.109
Q16MARK	.018	.053	.008	.029
Q17MARK	.027	.053	.021	.176
Q18MARK	-.034	-.007	-.138	-.079
Q19MARK	-.058	.042	-.055	.230
Q20MARK	-.031	.021	-.240	-.137
Q22EN	.141	.007	-.012	-.010
Q23EN	.014	.048	.007	.058
Q24EN	.094	.005	-.017	.123
Q25EN	.072	.013	-.085	.080
Q26AI	.109	.002	.037	.000
Q27AI	.173	.010	.053	-.059
INTEapplication	-.002	.134	-.005	.079
INTEstorage	-.017	.312	-.009	-.035
INTEshare	-.001	.038	-.005	.081
INTEnetworking	-.007	.328	-.005	.097
INTEcommunication	-.005	.182	.003	.025

Extraction Method: Maximum Likelihood.
 Rotation Method: Oblimin with Kaiser Normalization.
 Factor Scores Method: Regression.

Factor Score Covariance Matrix

Factor	1	2	3	4
1	.982	-.366	1.662	-1.133
2	-.366	1.392	-1.228	.331
3	1.662	-1.228	3.074	-1.333
4	-1.133	.331	-1.333	.765

Extraction Method: Maximum Likelihood.
 Rotation Method: Oblimin with Kaiser Normalization.
 Factor Scores Method: Regression.

Frequencies

[DataSet1] C:\Users\Sahab\Google Drive\Brunel
University\Study\PhD\Themes\1009\Amos\INTERNATIONALISATION.sav

Statistics

		Q28 Established Year	Q29 First Year of Internationalisation	Q30 SMEs Size	Q31 International Operation	Q40Speed
N	Valid	227	227	227	227	227
	Missing	0	0	0	0	0
Median		1.00	1.00	2.00	4.00	4.00
Range		1	1	2	10	4
Minimum		1	1	1	1	1
Maximum		2	2	3	11	5

Frequency Table

Q28 Established Year

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Pre Cloud (before 2007)	159	70.0	70.0	70.0
	Post Cloud (after 2007)	68	30.0	30.0	100.0
	Total	227	100.0	100.0	

Q29 First Year of Internationalisation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Pre Cloud (before 2007)	149	65.6	65.6	65.6
	Post Cloud (after 2007)	78	34.4	34.4	100.0
	Total	227	100.0	100.0	

Q30 SMEs Size

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Micro (1-9)	18	7.9	7.9	7.9
	Small (10-49)	160	70.5	70.5	78.4
	Medium (50-250)	49	21.6	21.6	100.0
	Total	227	100.0	100.0	

Q31 International Operation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Education	12	5.3	5.3	5.3
	Energy	4	1.8	1.8	7.0
	Manufacturing	40	17.6	17.6	24.7
	General Trading	75	33.0	33.0	57.7
	Computer and IT	11	4.8	4.8	62.6
	Engineering and Consulting	7	3.1	3.1	65.6
	Healthcare Industry	11	4.8	4.8	70.5
	Food Industry	30	13.2	13.2	83.7
	Crafts Industry	7	3.1	3.1	86.8
	Service	13	5.7	5.7	92.5
	Tourism and travelling	17	7.5	7.5	100.0
	Total	227	100.0	100.0	

Q40Speed

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<56Kbps	2	.9	.9	.9
	56Kbps - 512Kbps	20	8.8	8.8	9.7
	512Kbps - 1Mbps	28	12.3	12.3	22.0
	1Mbps - 5Mbps	84	37.0	37.0	59.0
	>5Mbps	93	41.0	41.0	100.0
	Total	227	100.0	100.0	

Q28 Established Year

Q29 First Year of Internationalisation