Cape Peninsula
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COMPETITIVE ADVANTAGE THROUGH EFFECTIVE MANAGEMENT OF INFORMATION TECHNOLOGY: A CASE OF SMALL, MEDIUM AND MICRO-SIZED ENTERPRISES (SMMEs) IN SOUTHERN TURKEY

Sinem Dilver
207021562

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Supervisor: Dr André de la Harpe

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DECLARATION

I, Sinem Dilver, declare that the contents of this dissertation represent my own unaided work, and that the dissertation has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

Signed	**Date**

ABSTRACT

In both developed and developing countries, small, medium and micro-sized enterprises (SMMEs) play a role in the economic growth of the country. The number of SMMEs and the contribution they make to national economies have been growing rapidly in recent years. The concept of trade globalisation has accelerated during this period from a national perspective to reaching international dimensions. This period is therefore a clear indicator for entrepreneurs to be more aware of new opportunities. In today's information age it is important not only to obtain information, but also to use information effectively to create value.

Information technology (IT) increases the importance of information. SMMEs need to consider IT as an important factor to achieve success in globalisation, competitiveness and innovation. Although some SMMEs use IT efficiently to improve their business and value adding processes to create a competitive advantage, SMMEs in Turkey do not effectively leverage their IT to create this advantage. This leads to low productivity among SMMEs and a subsequent low contribution to the Turkish economy.

The aim of this research is to explore the challenges of adopting IT within Turkish SMMEs and the ways in which Turkish SMMEs can use IT to gain a competitive advantage. The research focuses on the importance of IT in the insurance sector in order to propose a set of guidelines to small insurance service providers on how to utilise IT to create a competitive advantage in their enterprises. The research objectives are to investigate the challenges of IT adoption and determine what role IT plays in creating a competitive advantage in Turkish SMMEs.

This research consists of two basic components: firstly a qualitative methodology is used which includes employing a literature analysis, and secondly an empirical study is conducted which consists of primary research and interviews to collect data through an interview questionnaire. Qualitative data is collected from 25 SMME owners and managers in Southern Turkey through semi-structured interviews. Data is analysed using descriptive qualitative analysis.

The research indicates a low usage level of IT software products by SMMEs because IT is not seen as an important tool to create a competitive advantage. Although IT enables the integration of business processes when used effectively, most SMMEs do not tap into the capabilities IT has to offer.

The most common barrier for SMMEs wanting to use IT in their businesses is the high cost of IT adoption. Although there are free IT software products available for SMMEs and funding is provided by the government and other institutions, SMMEs seems not to be aware of this.

The research suggests that the effective use of IT has a positive impact on SMMEs. IT provides enhanced product development and service quality to cultivate an improved level of productivity in SMMEs, and this enables SMMEs to secure a competitive advantage. As a result of using IT, SMMEs provide increased employment, grow their production, and make a significant contribution to the national economy.

The outcome of the research is a set of guidelines to assist SMMEs in focusing on IT adoption and the effective use of IT to gain a competitive advantage. The research provides an improved understanding of how SMMEs adopt IT in order to gain this advantage. The challenges facing SMMEs wishing to adopt IT include a lack of information and resources to explore opportunities for IT adoption, managerial ignorance of IT, and a lack of qualified staff.

Keywords: *SMMEs in Turkey, Competitive advantages within Turkish SMMEs, Information Technology, Adoption of Information Technology, Insurance service providers.*

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DEDICATION

This dissertation is dedicated to my father, my mother and my brother.

You always kept your faith and believed in me.

I am eternally grateful, without you there would be no me.

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CHAPTER ONE: GENERAL INTRODUCTION

Figure 1.1: Chapter One layout

1.1 Introduction

In both developed and developing countries, small, micro and medium enterprises (SMMEs) play an important role in the economic growth of the country (Ozmen, 2012). The contribution of SMMEs to the national economy is either through the final production of goods and services or by supporting the large enterprises (Ozok, 1994; Kavcioglu, 2009). In Turkey, SMMEs do not contribute sufficiently to the national economy (Ozmen, 2012) although SMMEs constitute 99 per cent of all firms (Wright, Bisson & Duffy, 2013).

According to the Small Business Act (SBA) fact sheet of 2013, Turkey hosts 2.3 million SMMEs, employing up to 20 employees per SMME. Turkish SMMEs account for 77 per cent of the private sector workforce as compared to 67 per cent of private sector employment provided by the European Community SMMEs. The rest of the SMMEs (22 per cent) are non-profit businesses which are operated by the government (European Commission, 2013). SMMEs in Turkey are categorised as follows:

a) Micro-sized enterprises having between 1 and 9 employees and an annual net income of less than R5 million.

b) Small-sized enterprises that have between 10 and 49 employees and an annual net income of more than R5 million and less than R25 million.

c) Medium-sized enterprises employing between 50 and 249 employees and an annual net income between R25 million and R125 million (Turkish Gazette, 2005).

Although Tektaş, Günay, Karataş and Kuyucu (2012) indicate the importance of SMMEs, they also state the weaknesses and constraints in the development stage of SMMEs. Some common weaknesses and constraints of SMMEs are for example poor usage of technology, insufficient access to finance, low educational levels and a lack of capital for IT investments. Turkish SMMEs, as in some other developing countries, are negatively affected by the rapid changes in customer needs, the economic and political environment, technological improvements and the competitive environment (Ozmen, 2012). Enterprises need to consider effective usage of technology and the creation of knowledge to become successful among competitors (Oystein & Haanaes, 2001). Rapid changes in the economy, politics, human issues, environmental problems and technology developments force enterprises to use new tools to survive and obtain strategic advantages (Omur, Tunc & Duren, 2012).

Information Technology (IT) affects Turkey's economic growth as well as the routes and rates of development. Considering these facts, IT has an important role to play in the growth of the economy. Many countries that realise the importance of IT in the economy have been investing in the IT sector. At the same time they contribute to industrialisation and economic development (Sein & Harindranath, 2004). The global economy has been influenced by improved integration of world markets by means of IT (Baliamoune, 2003). The improved integration of markets and the SMMEs using IT have as a consequence quality data available and are more likely to prevail over their rivals.

The evolution of computer technology also contributes to the development of subsequent IT. Broadly, IT can be used for storing, retrieving, displaying, protecting, controlling, transmitting, receiving and managing data or information for purposes of communication functions

(Ryssel, Ritter & Gemunden, 2004), as well as for problem solving and value creation (Stump & Sriram, 1997; Melville, Kraemer & Gurbaxani, 2004; Sophonthummapharn, 2008).

IT provides a number of advantages to individuals and businesses. From an individual perspective, IT facilitates interaction through communication among individuals. People can interact and communicate more conveniently and comfortably than in the past. From a business standpoint, IT provides several tools to manage data or information efficiently and effectively, leading to additional business competency, improved business performance and increased competitive advantages for the firm. IT is a tool that enables SMMEs to share, distribute and gather information and communicate with one another by using computers and interconnected networks (Kushwaha, 2011). IT covers information systems, Internet, Information and Communications Technology (ICT) and infrastructures which collect, process or transmit information to increase effectiveness in enterprises (Onn & Sorooshian, 2013). Tan (2010) separates IT usage levels into four categories available to SMMEs for adoption into their businesses:

a) Basic communication which includes the minimum IT capability a business should have.

b) Basic IT which includes PCs that accommodate word-processing functionality, accounting and other business practices.

c) Advanced communications which provide technologies where people communicate and network with one another.

d) Advanced IT which includes advanced packages that consolidate a range of business applications for an SMME's core business processes.

SMMEs adopt new technologies to improve their business processes effectively and efficiently (Godoe & Johansen, 2012). The most common IT adoption models are the Technology Acceptance Model (TAM), Theory of Planned Behaviour (TBP), Unified Theory of Acceptance and Use of Technology (UTAUT), Diffusion of Innovation (DOI) and Technology—Organisation—Environment framework (TOE) (Oliveira & Martins, 2011).

IT increases the importance of the information by collecting, processing, storing and transmitting information in SMMEs (Sendogdu & Ozturk, 2013). Information increases the performance of enterprises by enabling them to manage their competitiveness effectively, understand their customer needs, target profitable markets and engage with technological improvements (Wright, Bisson & Duffy, 2013).

Mutsaers, Zee and Gierts (1998, as cited by Rabieai & Shoaaee, 2014:223) state that:

> …organizations need to pay attention to IT as a determining factor which should be used not only to enhance operational effectiveness and efficiency, but also to respond quickly and consistently to customer needs and competitive pressures.

The expression *competitive advantage* is defined as a:

> …direct impact of the strategies implemented by an organisation that intends to add value for its customers (Tanwar, 2013).

According to Porter (1985) and Daneshvar and Ramesh (2010), IT has an important effect on competitive advantage in any organisation through the provision of cost leadership or differentiation.

Cost leadership emerges when the enterprise provides reasonable value for its customers at a lower price (Tanwar, 2013) and differentiation emerges when the enterprise has a strong brand or high quality service which gives better benefits to its customer than other enterprises (Porter, 1985; Tanwar, 2013). SMMEs need to have an effective and efficient IT strategy and ensure that this IT strategy aligns with the business strategy by supporting business goals in order to gain a competitive advantage (Modimogale, 2009).

According to Sendogdu and Ozturk (2013), SMMEs need to see IT as an important factor to achieve success in globalisation, competitiveness and innovation. The effects of IT can be found in all processes and functions of SMMEs (McGaughey & Gunasekaran, 2002). SMMEs add value to their processes by means of creativity and innovation. SMMEs need information to change and add value to their business processes (Gules, Tekin & Ogut, 2003). Some of the SMMEs use IT effectively to improve their business processes in order to create competitive advantages. IT is recognised as a key element for SMMEs to be able to make quality decisions for operational and strategic needs and planning (Sendogdu & Ozturk, 2013).

Globalisation and the fast growth of IT are placing competitive pressures on SMMEs. This rapid growth affects the needs of the customers as the customer preferences are changing as the growth continues. With the increase in the number of competitors and the relentless expansion of IT, SMMEs can be forced out of a specific sector. The reaction of the SMMEs will largely depend on how SMMEs integrate and use business information and intelligence in their services and products (Wright, Bisson & Duffy, 2013).

According to Aydin (2012), Turkish SMMEs need to leverage their IT in order to succeed in the relevant sector and increase the contribution of SMMEs to the national economy.

1.2 Research problem

1.2.1 Background to research problem

Porter (1985) and Talaja (2012) state that the creation of a competitive advantage is one of the reasons why IT should be adopted into business processes. According to Barney (1991), the effective use of IT adds economic value to the business processes and creates a sustainable competitive advantage. The continual innovation of IT provides economic and strategic impact for the enterprise. Moreover, enterprises gain a sustainable competitive advantage through the innovation and exploration of IT (Carr, 2013). According to Alpkan and Kaya (2012), innovation plays an important role in SMMEs to create a competitive advantage and sustainability in business processes.

SMMEs usually do not utilise their resources for IT investments to create a competitive advantage. In fact, many SMMEs consider IT as a short-term problem solving tool instead of a long term strategic tool (Dai, 2009). IT enhances product development and service quality to cultivate improved levels of productivity in SMMEs, and this enables SMMEs to use IT to secure a competitive advantage (Dai, 2009).

SMMEs are important for a country's economy and employment (Coplin, 2002). Audretsch (2002) argues that technological innovations can provide an important source of employment and growth. Ozbek (2008) states that SMMEs provide employment and growth in production, and they adopt changes that contribute to the national economy.

SMMEs play a role in the economic growth of developed and developing countries (Ozmen, 2012). In Turkey, which has one of the fastest growing economies among developing countries, SMMEs provide 77 per cent of the employment whilst only contributing 23 per cent to the economy (GDP), which is lower than in the United Kingdom and South Africa. SMMEs in the United Kingdom contribute 63 per cent to the economy (GDP), with a similar percentage employment to that in Turkey (Ozmen, 2012).

According to Martin (2012), SMMEs in South Africa contribute 40 per cent to their economy (GDP) and provide 60 per cent employment. Turkish SMMEs have low productivity levels when compared to countries such as South Africa and the United Kingdom.

1.2.2 Research problem statement

SMMEs do not give sufficient consideration to IT as a long term tool to be utilised in business processes. Failure to understand the potential and implications of IT in business processes could result in low potential growth, low product development and insufficient service quality

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as well as losing competitiveness. SMMEs in Turkey do not effectively leverage their IT to create a competitive advantage. This leads to low productivity among SMMEs and a low contribution by the SMMEs to the Turkish economy.

1.2.3 Research aim

The aim of the research is to explore the challenges of adopting IT within Turkish SMMEs and how these SMMEs can gain a competitive advantage through the use of IT. The output is a proposed set of guidelines that will assist SMMEs in Turkey to create a competitive advantage through the use of IT in order to increase SMME contribution to the national economy.

1.3 Research questions and sub-questions

Research Question 1: How do Turkish SMMEs manage their information technology to gain a competitive advantage?

> *Sub-question 1.1: How do Turkish SMMEs evaluate information technology that can be used to create a competitive advantage in SMMEs?*

> *Sub-question 1.2: How do Turkish SMMEs manage the adoption of information technology in their businesses?*

Research Question 2: What are the challenges Turkish SMMEs have to face that influence their adoption or non-adoption of new technological innovations?

> *Sub-question 2.1: What are the factors influencing the adoption of new technology in Turkish SMMEs?*

> *Sub-question 2.2: What technologies do SMMEs need in order to create a competitive advantage in Turkey?*

Tables 1.1 and 1.2 summarise the research problem, research questions, objectives of the questions and the methods applied to answer the research questions.

Table 1.1: Summary of Research Question 1 and research sub-questions

Research problem	SMMEs in Turkey do not effectively manage their IT to create a competitive advantage.
Research Question 1 (RQ 1)	How do Turkish SMMEs manage their information technology to gain a competitive advantage?

Research sub-questions	Research method(s)	Objectives
RSQ 1.1 How do Turkish SMMEs evaluate information technology that can be used to create a competitive advantage in SMMEs?	Interviews Literature analysis	To determine the evaluation process of information technology and its role in creating a competitive advantage in Turkish SMMEs.
RSQ 1.2 How do Turkish SMMEs manage the adoption of information technology in their businesses?	Interviews Literature analysis	To determine the management of information technology in SMMEs when new information technology is adopted.

Table 1.2: Summary of Research Question 2 and the research sub-questions

Research problem	SMMEs in Turkey do not effectively manage their IT to create a competitive advantage.	
Research Question 2 (RQ 2)	What are the challenges Turkish SMMEs have to face that influence their adoption or non-adoption of new technological innovations?	
Research sub-questions	**Research method(s)**	**Objectives**
RSQ 2.1 What are the factors influencing the adoption of new technology in Turkish SMMEs?	Interviews Literature analysis	To determine what factors will influence SMMEs for and against the adoption of new technologies and to ascertain the challenges for SMMEs when adopting technology.
RSQ 2.2 What technologies do SMMEs need in order to create a competitive advantage in Turkey?	Interviews Literature analysis	To determine the technologies needed for Turkish SMMEs.

1.4   Objectives of the study

The three main objectives of the research are as follows:

i)   To determine what role IT plays in creating a competitive advantage in Turkish SMMEs.

ii) To investigate the challenges of IT adoption in Turkish SMMEs.

iii) To provide a set of guidelines to increase the usage of information technology by Turkish SMMEs.

1.5 Research assumptions

- All Turkish SMMEs have access to information technology
- Government wants to improve the contribution SMMEs make towards national economic growth
- All Turkish SMMEs have access to funds that the government provides for start-up businesses

1.6 Research methodology

1.6.1 Research philosophy

1.6.1.1 Research ontology

Ontology is "the science or theory of being and concerned with nature of reality—what can be known and how". The two main aspects of ontology are objectivism and subjectivism (Saunders, Lewis & Thornhill, 2009; Delkhosh, 2012).

This research consists of two basic components as part of a qualitative methodology, which includes a literature analysis and empirical study. The empirical study consists of primary research (interviews) and secondary research (literature and documentation) to collect data through a qualitative research method using a strategy of multiple case studies. The subjective approach includes two phases: communicative validation where the data is collected from interviewees and explanatory validation where data is interpreted (Soini, Kronqvist & Günter, 2011). A subjective approach is followed to interpret qualitative data obtained from semi-structured interviews in this research.

1.6.1.2 Research epistemology

The epistemology of this research aims to explore the phenomena concerned with the competitive advantage process through IT in Turkish SMMEs by accessing the meaning and inductive reasoning behind the research respondents' perceptions of the problems concerning the adoption of IT in Turkish SMMEs (Orlikowski & Baroudi, 1991; Dieronitou, 2014). The researcher collected qualitative data from respondents and acknowledged the different perspectives from the interviewees using an interpretive philosophy. In interpretive research philosophy, the researcher does not only interact with the environment but also seeks to make sense of it through the interpretation of events and the meaning drawn from those events (Saunders *et al.*, 2009). Therefore, an interpretivist approach helps to gain a clear understanding of the research context, including the collection of qualitative data.

1.6.2 Research approach

According to Saunders *et al.* (2009), there are two types of research approaches for researchers to follow, namely a deductive and an inductive approach. A deductive approach is applicable when the researcher develops a hypothesis for a theory and then designs a research strategy to test the hypothesis.

An inductive approach is applicable when the researcher collects data and develops a theory as a result of the data analysis (Saunders *et al.*, 2009). In this research, an inductive approach is followed since data is gathered from interviews and analysed by a descriptive qualitative analysis method in order to provide a set of guidelines as well as recommendations for Turkish SMMEs on the subject of IT adoption and use to gain a competitive advantage.

1.6.3 Research strategy

In this research, a multiple case study strategy has been adopted. According to Robson (2002:181), a case study is:

> …a strategy for doing research and it includes an empirical investigation of a particular phenomenon within its context by using multiple sources of evidence (Myers, 1999).

Furthermore, case study research can be positivist, interpretive or critical, and depends on the researcher's philosophical assumptions (Myers, 1999).

The case study can be a single case or multiple case studies. Multiple cases focus on the need to establish whether the findings of the first case occur in other cases by generalising the findings (Saunders *et al.*, 2009; Rule & John, 2011). In this research, multiple case studies were selected to gain a rich understanding of the context of the research.

Unit of analysis: A unit of analysis is the subject of the research which a researcher may generalise (Lewisbeck, Bryman & Liao, 2004). The unit of analysis for this research is twenty five (25) small insurance service providers (SMMEs) in the city of Antalya in Southern Turkey.

Unit of observation: Lavrakas (2008:928) defines a unit of observation as:

> …an object about which information is collected. Researchers base conclusions on information that is collected and analysed, so using defined units of observation in a survey or other study helps to clarify the reasonable conclusions that can be drawn from the information collected.

In this research, the unit of observation is the 17 owners and 8 managers.

1.7 Sampling technique

With non-probability sampling there is no random sampling of the participants (Zikmund, Babin, Carr & Griffin, 2010). In this research, convenience sampling was used as one of the categories of the non-probability sampling method. Hence, samples were conveniently selected in Southern Turkey according to their availability.

1.8 Data collection

The primary data collection method for this research is interviewing through the use of an Interview Guide which consists of a semi-structured interview questionnaire. In the semi-structured questionnaire, a list of questions based on the research questions, was presented to the respondents. A face-to-face interview mode was followed. Secondary data such as public documents, government acts and laws was obtained from literature.

1.9 Data analysis

Data was analysed using a descriptive qualitative analysis method. This analysis method includes using interpretive and descriptive tools to analyse data, hermeneutics and phenomenology. Creswell (1998:51) states that:

> …phenomenological study describes the meaning of the lived experiences for several individuals about a concept or the phenomenon.

Interviewing is the key data collection method within phenomenology (Aspers, 2004). The hermeneutics method focuses on the meaning of qualitative data to understand human aspects of the research subject (Myers, 2008).

The results were used to compile a set of guidelines and make an inductive inference with the aim of providing a logical path for the Turkish SMMEs to follow for the adoption and usage of IT to gain a competitive advantage.

The collected data is presented in written form by means of Microsoft Office Excel. All audio data collected from respondents was transcribed and documented in an Excel document (see Annexure 1). In total, 38 keywords were identified from the collected data according to their similarities and dissimilarities. These keywords were summarised into 12 themes and each theme was linked to individual interview questions. Finally, 12 themes were collected into four main categories to answer the four research questions.

1.10 Delineation of the research

The geographical location of the research excludes all of Turkey except Antalya, Southern Turkey. The unit of analysis excludes all SMMEs except small financial service providers.

1.11 Contribution of the research

The research contributes to the general body of knowledge through providing a proposed set of guidelines for Turkish SMMEs on the effective usage of IT to gain a competitive advantage. The aim of this proposed set of guidelines is to assist Turkish SMMEs in understanding the importance of IT adoption to increase the competitive advantage of their businesses.

1.12 Research ethics

According to Zikmund *et al.* (2010), a written request has to be provided to selected respondents before the interview takes place when investigating phenomena using a case study. In this research, the written request sent to the respondents includes the following:

- The purpose, methods and intended use of the research
- Description of why the respondent was selected and what their participation entails in the research
- Option of acceptance or rejection of the interview at any time without explanation
- Research respondents participate voluntarily, free from any force (Leicester, 2007)

The privacy of the respondents was maintained at all times throughout the interviews. The respondents were assured of strict confidentiality and anonymity at the start of the interviews. This assists in creating a strong and trusting relationship (Saunders *et al.,* 2009). As a result, the providers of the actual data used in the research have been assigned generic names such as Interviewee 1, Interviewee 2.

1.13 Outline of the research

The research consists of six chapters:

Chapter One
A general introduction and background to the research problem statement are presented. The research questions and their sub-questions are formulated. A brief description of the research methodology is provided. The contributions and ethics of the research are explained. The chapter also includes the assumptions and delineations of the research.

Chapter Two

This chapter looks at existing literature which includes Turkish SMME status, IT adoption in SMMEs, a competitive advantage within SMMEs, and the effects of efficient IT management for a competitive advantage. IT adoption in SMMEs includes the role of IT in SMMEs and the factors influencing the adoption. The chapter also includes new technologies that can be used by SMMEs to gain a competitive advantage.

Chapter Three

This chapter provides the research philosophy, approach, strategy, design and methodology of the research. It also provides assumptions, paradigms and sampling techniques as well as the data collection methods and analysis strategies applied. The methods of validation and ethical considerations are stated.

Chapter Four

Demographical characteristics of interviewees are presented. Findings collected from interviews are analysed and presented.

Chapter Five

Themes from the data categories arising from the interviews conducted are presented. The research findings are discussed in accordance with the research questions. Answers to the research questions and themes developed from the findings, are discussed.

Chapter Six

The conclusion and recommendations are presented based on the research aims and objectives. Limitations of the research are stated. A reflection of the research process and the researcher's own experiences of the research process are discussed.

1.14 Summary

SMMEs in the Turkish financial services sector do not gain from the benefits IT can offer the organisation. The result is that SMMEs are not able to create a competitive advantage and hence find it difficult to grow their market share.

The research problem is stated as: *SMMEs in Turkey do not effectively leverage IT to create a competitive advantage*.

The two main research questions are:

> **Research Question 1:** How do Turkish SMMEs manage their information technology to gain a competitive advantage?

Research Question 2: What are the challenges Turkish SMMEs have to face that influence their adoption or non-adoption of new technology innovations?

To answer the research questions, a subjective, interpretivist philosophical stance has been adopted as research methodology. The research strategy is a multiple case study with financial services providers as the unit of analysis and the owners and managers of the SMMEs as the unit of observation.

A total of 25 interviews were conducted using an Interview Guide. The interviews were transcribed, keywords identified, findings deduced, categories identified and themes developed. A discussion on the themes was done and a set of guidelines is proposed.

In the next chapter, the literature will be discussed, starting with the main concepts and definitions of this research.

CHAPTER TWO: LITERATURE REVIEW

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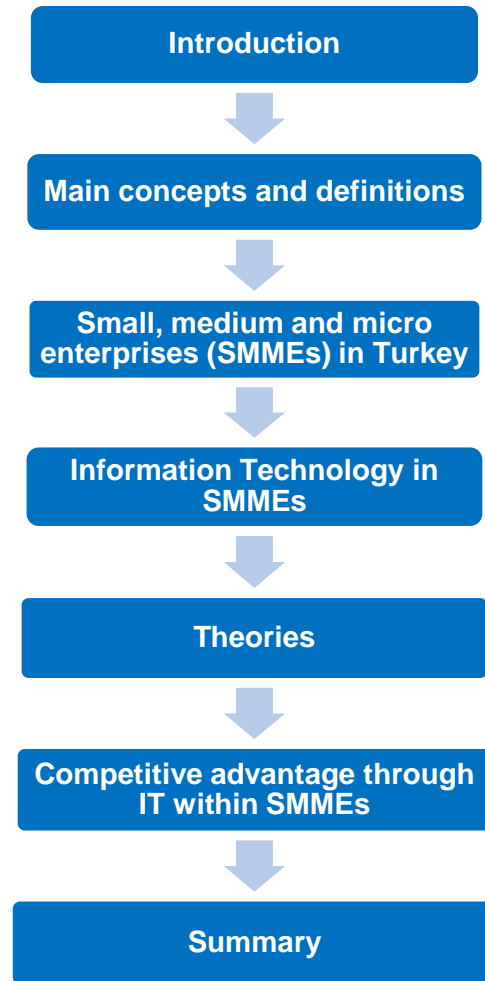
Figure 2.1: Chapter Two layout

2.1 Introduction

This chapter provides the main concepts and definitions of SMMEs as well as definitions and the competitive advantages of IT (Figure 2.1). An in-depth explanation of Turkish SMMEs and their development stages as well as the government institutions which support SMMEs, are indicated. The usage and role of IT within SMMEs, is addressed. The challenges and impact of IT adoption in SMMEs are discussed. The importance of a competitive advantage within SMMEs is highlighted in order to understand the ways in which this advantage through the use of IT in SMMEs can be gained. The conclusion of the chapter contains a discussion on theoretical frameworks and the identification of IT adoption stages to gain a competitive advantage within SMMEs.

2.2 Main concepts and definitions

2.2.1 Definition of small, medium and micro-sized enterprises (SMMEs)

The World Bank definition of SMMEs outlines micro-sized enterprises as having less than 50 employees, small-sized enterprises have 50 employees and medium-sized enterprises have between 50 and 200 employees (Keskin & Senturk, 2010).

The European Union defines SMMEs as enterprises with fewer than 250 employees. The micro-sized enterprises have less than 10 employees, which include self-employed people working for themselves with no employees; small-sized enterprises have between 10 and 49 employees and medium-sized enterprises have between 50 and 249 employees (Keskin & Senturk, 2010).

The Asian countries definition of SMMEs categorises micro enterprises as firms that employ less than 11 employees with a total annual asset value of up to $100,000; firms from 12 to 50 employees with a total annual asset value of up to $3 million are categorised as small enterprises; medium enterprises are defined as firms having up to 300 employees with a total annual asset value of up to $15 million (Sinha, 2003).

The most used definitions for South African SMMEs are set out in the South African National Small Business (NSB) Act 102 of 1996. The definitions are defined under four categories based on number of employees and annual turnover (Pellissier & Nenzhelele, 2013).

The four definitions, based on the SA NSB Act 102 of 1996, are as follows:

a) **Survivalist Enterprise:** Their income is less than the minimum income standards or the poverty line.

b) **Micro Enterprise:** The turnover is less than the value added tax (VAT) registration limit, which is an amount of approximately $13,500 (R150,000) and employs no more than 5 people.

c) **Small Enterprise:** The maximum number of employees is 50 people. Small enterprises exhibit more complex business practices.

d) **Medium Enterprise:** The maximum number of employees is 100. Only the mining, electricity, manufacturing and construction sectors may have up to 200 employees.

According to the Cabinet decree issued in the Turkish Official Gazette, SMMEs are defined as follows:

a) **Micro-sized enterprises** have between 1 and 9 employees with the annual net turnover not exceeding $400,000 (1 million Turkish Liras).

b) **Small-sized enterprises** have between 10 and 49 employees with the annual net turnover not less than $400,000 and not more than $2 million.

c) **Medium-sized enterprises** have between 50 and 249 employees with the annual net turnover between $2 million and $10 million (Turkish Gazette, 2005).

Additionally, in Turkey, SMMEs are also defined as enterprises that function in the manufacturing sector where the number of employees is between 1 and 200. These enterprises may not exceed a capital amount of $ 2,000,000 because the net balance sheet value excludes land and building (Atici, 2006).

According to Alpkan and Kaya (2012), the most well-known definition of SMMEs, which constitutes almost all businesses in the Turkish economy, has been compiled by the Small and Medium-sized Industry Development Organisation (KOSGEB). KOSGEB defines SMMEs as:

> …the enterprises with a number of employees between 1 and 250. These SMMEs are also not allowed to have large-sized enterprises with more than 25% shares involved in the SMMEs (KOSGEB, 2012).

In this research, the Turkish Gazette's (2005) definition will be used for SMMEs.

2.2.2 Definition of Information Technology

Orlikowski and Gash (1992:2) define IT as:

> …any form of computer-based information systems which including mainframe and microcomputer applications.

The USA Government (2001:1) defines IT as:

> …systems and services used in the automated acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, assurance, or reception of information. Information technology includes computers, network components, peripheral equipment, software, firmware, services, and related sources.

Then USA Government redefined IT according to the Clinger-Cohen Act of 1996, sections 5002, 5141, and 5142 by defining IT as:

> …any equipment or interconnected system or subsystem of equipment used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information (USA Government, 2008:104).

Onn and Sorooshian (2013) state that IT covers information systems, Internet, information and communications technology (ICT) and their infrastructures which collect, process or transmit information to increase effectiveness in enterprises. IT has a wide range of information processing applications and computer applications in enterprises (Onn & Sorooshian, 2013). In this research, Onn and Sorooshian's (2013) definition of information technology is used.

2.2.3 Definition of competitive advantage

Porter (1985) defines *competitive advantage* as:

> …what distinguishes you from the competition in the minds of your customers. Whether you are an employee, a business or a country, you need to have a clear competitive advantage and communicate it to your customers.

Furthermore, the author states that the growth of competitive advantage depends on the value created by the enterprise for its customers. Value is what customers are willing to pay for products or services. Gaining a competitive advantage from an enterprise's value can be done in two ways, namely cost leadership and differentiation (Porter, 1985; Hitt, Ireland & Hoskisson, 2010).

a) Cost Leadership emerges when the enterprise provides reasonable value for its customers at a lower price.

b) Differentiation emerges when the enterprise has a strong brand or high quality service which offers better benefits to its customers than other enterprises (Porter, 1985).

According to Popa, Dobrin, Popescu and Draghici (2011), an enterprise gains a competitive advantage when it is able to create more economic value than its rivals. Popa *et al.* (2011:61) define economic value as:

> …the difference between perceived benefits gained by a buyer who purchases goods or services of an enterprise and the economic cost of these products and services.

Awwad, Khattab and Anchor (2013) hold a similar view of competitive advantage and state that competitive advantage is an attribute or a factor that allows an enterprise to create better customer value and achieve better performance by serving its customers more effectively than its rivals.

2.3 Small, medium and micro enterprises (SMMEs) in Turkey

2.3.1 Introduction

In developed or developing countries, SMMEs play an important role in the economic growth and contribution of the country (Ozmen, 2012). The contribution of SMMEs to the national economy is either through the final production of goods and services or supporting the large enterprises (Ozok, 1994; Kavcioglu, 2009).

SMMEs contribute more and more to the national economies all around the world and are the major forces contributing to economic growth (Kutlu & Ozturan, 2008; Ghobakhloo, Benitez & Arias, 2011). SMMEs play a vital role as they comprise 99 per cent of all firms in Turkey (Wright, Bisson & Duffy, 2013). They represent 77 per cent of all employment but only contribute 23 per cent of the total GDP of the country (Ozmen, 2012).

According to the Small Business Act (SBA) fact sheet of 2013, Turkey hosts 2.3 million small, medium and micro-sized enterprises, employing up to 20 employees. Turkish SMMEs account for 77 per cent of the private sector workforce, as compared to 67 per cent in the European SMMEs. Although Turkish SMMEs contribute to employment more than their counterparts in Europe, they contribute less to the added value which implies that Turkish SMMEs are less productive and smaller in size than their European counterparts (European Commission, 2013).

From 2009-2012 the number of newly established businesses annually exceeded the number of liquidated or closed businesses in Turkey, as shown in Table 2.1. According to the 2013 European Commission report, the number of newly established SMMEs dropped by 6.7 per cent compared to 2011 due to difficult procedures, regulations and high costs involved in establishing a small business. Furthermore, the number of liquidated or closed SMMEs dropped by 13.9 per cent compared to 2011 because closing a business in Turkey remains expensive and time consuming (Ruijten, 2013).

Table 2.1: The number of SMMEs in Turkey from 2009 to 2012

(Source: Ruijten, 2013:22)

	2009	**2010**	**2011**	**2012**
Newly established SMMEs	88,766	102,913	114,872	107,219
Liquidated or closed SMMEs	60,439	62,927	80,786	69,523

2.3.2 Factors affecting the development of SMMEs

Tektaş *et al.* (2012) emphasise the importance of SMMEs as well as the weaknesses and constraints in developing SMMEs. According to Tektaş *et al.* (2012:65), some of the weaknesses and constraints for SMMEs in the development stage of these enterprises include:

> …poor usage of technology, innovation, research and development, low bank credit usage, insufficient access to finance, inadequate usage of marketing techniques, low educational level, lack of capital for IT investments, lack of institutionalization, low level of cooperation, lack of reaching global standards and lack of management capacity.

Fortunately there are some government institutions helping SMMEs to improve their development and capacity. Examples of such institutions include the Ministry of Science, Industry and Technology of Turkey, KOSGEB, and the Scientific and Technological Research Council of Turkey (TUBITAK) (Tektaş *et al.*, 2012). The Turkish Industrial Strategy Document (TISD) (2011) and Nurrachmi, Abdsamad and Foughali (2012) name four main reasons for Turkish SMMEs having difficulty to access finance:

- Problems arising from the credit limit given by the banking sector due to a financial revamp in 2001
- Insufficient development of the capital market
- Weaknesses of SMME's structure
- Administrative and legal obstacles to access finance

According to Nurrachmi *et al.* (2012), access to finance has always been an issue for SMMEs. The budget deficits have caused excessive growth in money supply, high inflation and high interest rate, which absorb the private saving of SMMEs. Loans at Turkish banks are limited; banks tend to provide loans for large-sized enterprises, while SMMEs are granted loans only occasionally (Nurrachmi *et al.,* 2012).

To overcome the banking system's inability to provide loans for SMMEs, the Turkish government has created a number of credit programs to support SMMEs. The government also subsidises SMME purchases of capital equipment through a series of tax incentives and offsets. Moreover, the improvement of SMME's financial access can be done by fostering the availability of venture capital and access to securities markets (Nurrachmi *et al.*, 2012).

Although government institutions aim to increase SMMEs' competitive power in economic and social development, there is a lack of harmony between these institutions. Due to the large number of institutions lending support to SMMEs, KOSGEB is a well-known institute that has different types of support programs for SMMEs (MUSIAD, 2014), as mentioned in Section 2.4.2.1.

According to Muftuoglu (1998) and Alpkan and Kaya (2013), there is a lack of promotion and marketing of the products and services of SMMEs. Furthermore, Alpkan and Kaya (2013) state that if SMMEs only focus on the production process and not pay attention to the market activities, problems arise. Although SMMEs see marketing as a tool used by large-sized enterprises, good marketing can also control the cost and result in increased future production of products and services of SMMEs.

Cordeiro and Vieira (2012) indicate that SMMEs are characterised by their ability to react immediately to changing market conditions, which could provide a competitive advantage. Although SMMEs are recognised by their growing participation in terms of employment and development of output, they suffer from a lack of technology adoption despite their greater tendency for product innovation after applying technological innovation processes (Cordeiro & Vieira, 2012).

According to Aydin (2012), SMMEs display a lack of long term planning and research as well as a lack of information. SMMEs assume that their products will sell, thereby showing their lack of strategic long or short term planning and market research. This is attributed to insufficient information regarding innovation and market needs, which could be solved by working together with universities and other research institutions (Aydin, 2012).

2.3.2.1 KOSGEB (Small and Medium Enterprises Development Organisation)

KOSGEB was founded on 12 April 1990 as an authorised government institution. It has four main missions which are explained below (Bayulken & Kutukoglu, 2012).

a) **Providing information and technology:** KOSGEB provides relevant information and technology in accordance with the demands and needs of SMMEs. KOSGEB encourages SMMEs to conduct research and development activities, support advanced technologies or renew existing technologies.

b) **Entrepreneurship support:** KOSGEB creates the appropriate environment for entrepreneurship development and investment as well as joint venture opportunities for SMMEs.

c) **Strengthen the relations with suppliers:** KOSGEB helps SMMEs to produce quality products/services according to international standards by providing to them material design, production methods and marketing support.

d) **Education:** KOSGEB provides practical education systems on technology, investment, production, management, planning and marketing for SMMEs (Bayulken *et al.*, 2012:19).

KOSGEB supports Turkish SMMEs by providing support programs which assist SMMEs to enter into competitive markets and increase their efficiency and competitive potential for domestic and international markets (Celik, Talas & Akbaba, 2013).

The general support program, provided by KOSGEB, aims to encourage SMME development activities in order to increase their competitiveness. The program includes 13 types of support valued up to $100,000 (non-refundable), such as support for domestic fairs, qualified staff, business consultancy, staff training, energy efficiency, industrial property rights and business trips abroad (KOSGEB, 2012).

Another program is the Research and Development (R&D) Innovation and Industrial Implementation Support Program. This program is designed for SMME development, for entrepreneurs to develop their new ideas or inventions on new products/services, and for supporting innovative SMME activities (KOSGEB, 2012).

2.4 Information Technology in SMMEs

2.4.1 Introduction

In the global competitive environment, SMMEs use IT for various purposes and expectations. IT provides certainty in decision making processes and effective evaluation in strategic opportunities (Gules *et al.,* 2003). Ada, Ventura, Aracioglu and Savasci (2008) found the critical factors for evaluating the competitiveness and development levels of SMMEs to be the usage of information, speed of processing and production of information.

Elibol (2003) as well as Dulkadir and Akkoyun (2013) state that IT impacts the performance of SMMEs as follows:

- Increases the efficiency of enterprises' activity measurements
- Decreases the cost of procedures
- Allows information collection and processing at the right time, which assists with the decision-making process
- Decreases the cost of communication channels
- Helps enterprises to provide quality products and service to its customers
- Increases the power of competitiveness (Elibol, 2003; Dulkadir & Akkoyun, 2013)

Although Turkish enterprises rate 37th (out of 144 countries) in the adoption of new technology (see Annexure 2), Turkish SMMEs suffer from insufficient know-how and low level technology. SMMEs are not able to benefit from the cost advantages because there is a lack of technical skills. A substantial proportion of Turkish SMMEs do not target the national or local markets because there is inadequate funding for cooperative projects (KOSGEB, 2012).

According to Yang, Wang and Sharma (2012), most SMMEs do not use websites as a tool for information publishing. Yang *et al.* (2012) mention that the Internet and e-marketing provide advantages such as low cost of marketing, effectiveness, and reaching a wide customer range, to SMMEs. According to the research of SMB Digital Scape, only 37 per cent Turkish SMMEs have a website (Karahasan, 2013).

2.4.2 Importance of IT in SMMEs

IT is a tool that enables SMMEs to share, distribute and gather information and to communicate with each other through computers and interconnected networks (Kushwaha, 2011). IT is pointed out as one of the most critical and important factors for an organisation to increase its efficiency (Henderson & Venkatraman, 1993), be competitive (Kalkan, Erdil & Çetinkaya, 2011; Peppard, 2010), and be innovative (Kalkan *et al.*, 2011; Luftman, 2003). Antonelli, Almeida, Colauto and Longhi (2014) and Olumoye (2013) state that the objective of IT usage in an organisation is to provide information for more effective planning, forecasting, monitoring and controlling for managers and stakeholders. Organisations consist of systems which have different functions and processes. It is important to manage the organisations effectively by integrating these functions and processes with IT for managers and stakeholders to make efficient strategic decisions (Behan & Holmes, 1990; Cebi, 1997; Celik, Sahin & Aydin, 2014).

The role of information in decision making cannot be underestimated as decision making demands accurate, timely and relevant information (Marx, 1993; Cebi, 1997; Olumoye, 2013). The role of IT is to store large amounts of complex data and process the data into useful information for users at every level of the organisation (Olumoye, 2013). The usage and complexity of IT increase when organisations manage their functions and processes through IT. When IT is not managed effectively, difficulties may arise during the collection, processing and deployment of information (Popky, 1986; Cebi, 1997).

IT enables SMMEs to create greater operational efficiency and management effectiveness at every level of the organisation (Fink, 1998; Kutlu & Ozturan, 2008; Kushwaha, 2011; Lara, Marquez & Devece, 2012). According to O'Brien (1990), there are three major levels in an organisational structure namely strategic, tactical and operational, and the role of IT is not only to process the information obtained from the organisation's activities, but also to support the decision-making processes on a strategic, tactical and operational level, thus providing integration at every level of the organisation (O'Brien, 1990; Cebi, 1997). According to Tan (2010) and Ion and Andreea (2008), benefits for IT adoption by SMMEs are visible on every level of the organisation, comprising:

- Operational benefits which include improved data management and response time
- Tactical benefits which include improved planning time and integration with other business processes
- Strategic benefits including market leadership and customer satisfaction

However, merely investing in IT cannot guarantee the realisation of these benefits within an organisation (Hussin & Suhaimi, 2011).

2.4.3 IT usage levels in SMMEs

Tan (2010) separates IT usage levels into four categories for SMMEs to adopt in their businesses:

a) **Basic communication** which includes the minimum IT capability a business should have.

b) **Basic IT** which includes computers (PCs) that accommodate word processing functionality, accounting and other business practices.

c) **Advanced communications** which provide technologies where people communicate and network with each other.

d) **Advanced IT** which includes advanced packaged suites that consolidate a range of business applications for SMMEs' core business processes (Figure 2.2).
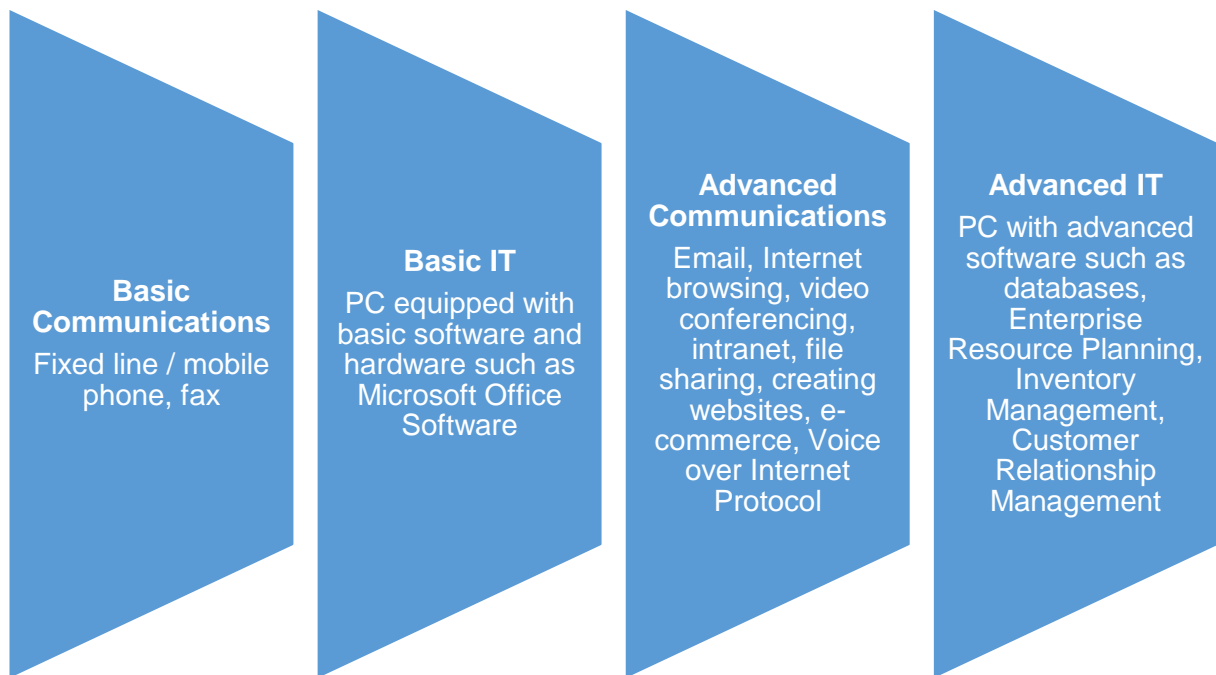
Figure 2.2: IT usage levels in SMMEs

(Source: Tan, 2010:5)

Despite the apparent benefits of IT, SMMEs do not utilise or invest in available IT to create a competitive advantage (Tan, 2010; Aydin, 2012). Most of the SMMEs adopt a basic level of IT; advanced IT adoption is notably low within SMMEs in Turkey (Aydin, 2012).

2.4.4 Adoption factors of IT in SMMEs

The adoption and implementation of new technologies are essential to the survival and growth of SMMEs (Ndekwa, 2014). However, the adoption and implementation of IT in businesses have not had the same outcome for all businesses (Ramsey, Ibbotson, Bell & Gray, 2003). SMMEs might face numerous barriers and obstacles, based on internal and external factors, which complicate IT adoption (MacGregor, Vrazalic, Carlsson, Bunker & Magnusson, 2002; Sarosa & Zowghi, 2003; Modimogale, 2009; Ghobakhloo, Hong, Sabouri & Zulkifli, 2012).

Internal factors consist of the knowledge, attitude and support of managers/owners; employees' knowledge and attitudes; and resource availability.

The external factors consist of competitors, government and its institutions, and IT consultants and vendors (Figure 2.3). These factors are discussed in the following section.
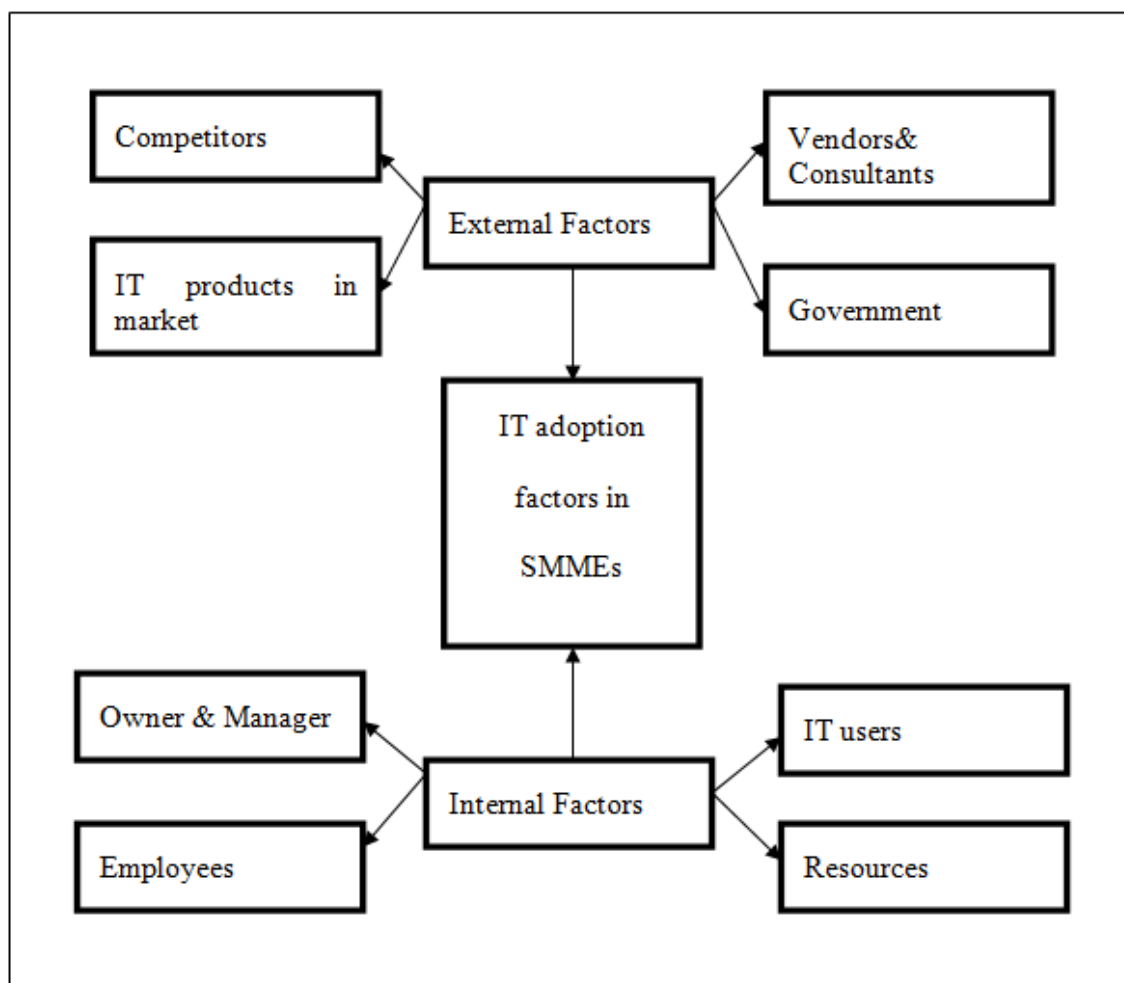
Figure 2.3: Adoption factors in SMMEs

(Source: Ghobakhloo et al., 2012:3)

2.4.4.1 External factors

External factors affecting the development and growth of SMMEs include vendors, consultants, competitors and government.

a) **Vendors/Consultants:** Ghobakhloo *et al.* (2011) argue that external IT vendors or consultants are one of the important factors of IT adoption in SMMEs. Although their professionalism could have a positive impact on IT adoption, most of the SMMEs suffer from a lack of qualified external vendors or consultants for their businesses (Nguyen, 2009; Ghobakhloo *et al.,* 2012).

b) **Competitors:** For many SMMEs there is pressure to keep up with competition and this pressure forces them to adopt IT in order to enhance survival and growth, manage changes effectively, promote better customer service and stay competitive (Premkumar, 2003; Mole, Ghobadian, O'Regan & Liu, 2004; Nguyen, 2009; Ghobakhloo *et al.,* 2012).

c) **Government:** There is a positive relationship between IT adoption and government support (Ahuja, Yang & Shankar, 2009; Tan, Chong, Lin & Eze, 2009). SMMEs usually depend on external resources and support due to their size and lack of resources (Sarosa & Zowghi, 2003). Contrary to Ahuja *et al.* (2009) and Tan *et al.* (2009), Ghobakhloo *et al.* (2012) argue that there is a gap between SMMEs' requirements and what is provided by government, and that government support is not always helpful, particularly in developing countries**.**

2.4.4.2 *Internal factors*

Internal factors are defined as factors within the technological and organisational context of SMMEs.

a) **Owners/Managers:** Generally the same person undertakes the role of owner and manager. The owner is the major investor who provides the enterprise with capital. The manager is the person who is responsible for carrying out managerial functions such as planning, organising, executing and controlling (Sarosa & Zowghi, 2003; Woerndl & Powell, 2013).

Owners and managers of SMMEs play a vital role in IT adoption processes (Sarosa & Zowghi, 2003; Woerndl & Powell, 2013). IT adoption in SMMEs is highly dependent on owners' and managers' perceptions of past investments, while SMMEs' specific characteristics such as size and status are less important (Corrocher & Fontana, 2008; Ismail, Jeffery & Van Belle, 2011). Organisational culture consists of the motivations, values, attitudes and abilities of owners and managers. The owners and managers therefore need to be aware of information technologies that could shape the future of SMMEs and have the courage to create changes in the organisational culture where IT functions and support are required (Fink, 1998; Culkin & Smith, 2000; Kutlu & Ozturan, 2008). Management and operational styles have an impact on IT adoption and implementation (Martin & Matlay, 2001; Kutlu & Ozturan, 2008), therefore a positive attitude of the owner/manager increases the effectiveness of adoption and implementation of IT (Winston & Dologite, 2002; Ogbonna & Harris, 2005).

b) **Employees:** IT tools and implementation costs are high and many SMMEs are unable to afford IT adoption costs such as hiring expert professionals or qualified staff for the business (Ghobakhloo *et al.,* 2011). According to Caldeira and Ward (2003), internal expertise consists of staff, supervisors and team members who are powerful determinants of effective IT adoption. The lack of IT knowledge among these

determinants can be seen as a barrier to IT adoption while IT knowledge is another key resource influencing IT adoption within SMMEs (Caldeira & Ward, 2003; Ghobakhloo *et al.*, 2011).

c) **Resources:** SMMEs are suffering from limited access to particular resources when compared to large enterprises (Igbaria & Tan, 1997; Nieto & Fernandez, 2005; Ghobakhloo *et al.*, 2012). Ghobakhloo *et al.* (2012) state that SMMEs suffer from insufficient financial resources and usually owners invest their own personal assets into the business. Furthermore, Ghobakhloo *et al.* (2012) argue that IT implementation requires long term investment and only SMMEs which have adequate financial resources would consider adopting IT due to the high cost of IT infrastructure (Ghobakhloo *et al.,* 2012).

2.4.5 IT adoption models in SMMEs

SMMEs adopt new technologies to improve their business processes effectively and efficiently (Godoe & Johansen, 2012). The most common IT adoption models are the Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB), the Unified Theory of Acceptance and Use of Technology (UTAUT), the Diffusion of Innovations (DOI), and Technology-Organisation-Environment framework (TOE) (Oliveira & Martins, 2011).

TAM is a system specific model and focuses on how an individual's perception of technology is affected by the attributes of technologies (Porter & Donthu, 2006; Godoe & Johansen, 2012). The main purpose of TAM is to discover the impact of external variables on internal beliefs, attitudes and intentions (Marchewka, Liu & Kostiwa, 2007).

TPB has been developed by Icek Ajzen in 1985 as an extension of the Theory of Reasoned Action (TRA) (Sentosa & Kamariah, 2012). TRA is based on assumptions that a person behaves in a sensible manner (Ajzen, 1985). According to TPB, an individual's intent to perform certain behaviour determines the performance of this behaviour (Sentosa & Kamariah, 2012).

UTAUT was developed by Venkatesh, Morris, Davis and Davis in 2003 as an extension of the TAM model. The UTAUT model explains how individual differences influence technology use (Marchewka *et al.*, 2007).

The TAM, TPB and UTAUT models are at an individual level while DOI and TOE are the only models directed at firm level (Oliveira & Martins, 2011).

IT adoption is for the business to implement and use IT solutions in order to grow and manage its business processes (Jin, 2007). There are a number of studies on assessing the determinants of IT adoption in SMMEs. The studies consider the technological, environmental, organisational and individual aspects of the organisation (Moghavvemi, Hakimian & Feissal, 2012; Kadadevaramath, Chen, Sangli, Raj & Vardhan, 2014; Dahnil, Marzuki, Langgat & Fabeil, 2014).

2.4.5.1 Diffusion of Innovation (DOI)

DOI takes a different approach to most of the other theories of change. Instead of focusing on individual change, change is seen as being primarily about the development of products and behaviours (Robinson, 2012). There are five general attributes of new technology, namely relative advantage, complexity, trialability, observability and compatibility (Rogers, 1995).

a) **Relative advantage** is defined as:

> …the degree to which an innovation is perceived as being better than the idea it replaced (Rogers, 2003:229).

Sahin (2006), Bunker, Kautz and Nguyen (2007) and Christiansen, Yildiz and Yildiz (2014) also present compelling definitions. The elements of relative advantage are the cost and social status motivational aspects of innovation (Sahin, 2006).

b) **Complexity** is defined as:

> …the degree to which an innovation is perceived as being difficult to understand (Rogers, 2003:229).

When the complexity is higher, it is less likely to adopt innovation (Rogers, 2003).

c) **Trialability** is defined as:

> …the degree to which an innovation may be experimented with on a limited basis before adoption without undue cost (Rogers, 2003:229).

d) **Observability** is defined as:

> …the degree to which the results of an innovation are visible to others (Rogers, 2003:229).

e) **Compatibility** is defined as:

> …the degree to which innovation is perceived to be consistent with existing social cultural values, needs and past experiences of potential adopters (Rogers, 2003:229).

It is positively correlated with the rate of adoption (Rogers, 2003).

Rogers (1995) classifies individual innovativeness into five categories, namely:

a) **Innovators** (who bring in the innovation from outside the system).

b) **Early adopters** (who are more limited within the boundaries of the social system).

c) **Early majority** (having a good interaction with other members of the social system, but they do not have the leadership role that early adopters have).

d) **Late majority** (one-third of all members of the social system, waiting until most of their peers adopt the innovation).

e) **Laggards** (who have a traditional view and are more sceptical about innovations and change agents than the late majority) (Sahin, 2006; Kilicer & Odabasi, 2013).

Kilicer and Odabasi (2013:248) discuss the categories as follows:

a) **Innovators:** They are the first individuals to adopt an innovation. Innovators are willing to take risks, are youngest in age, have the highest social class and have the financial security. Their risk tolerance attitude allows them to adopt new technologies which may fail and their financial power helps absorb the fail.

b) **Early adopters:** They are the second fastest group of people to adopt an innovation. They are typically young people with a higher social status, more financial lucidity, advanced education level, leadership skills and they are more socially forward than late adopters but more discrete in adoption choices than innovators.

c) **Early majority:** They adopt an innovation after a varying length of time. They tend to be slower in the adoption process, have above average social status, are in contact with early adopters and rarely hold a position of opinion leadership in a system.

d) **Late majority:** They adopt an innovation after the average members of society. They have below average social status, very little finance, and very little opinion leadership.

e) **Laggards:** They are the last people to adopt an innovation in the society. They have an aversion to change and are usually the older people. Laggards focus on traditions and have the lowest social status and finance.

There are four factors that affect technology adoption (Rogers, 1995; Sahin, 2006; Choi, 2009):

- Innovation itself
- The communication channels used to spread information about the innovation
- Time
- The nature of the society involved in technology adoption

According to Botha and Atkins (2005), DOI is a meta-theory that includes several theoretical perspectives of diffusion. Rogers (1995) as well as Simin and Jankovic (2014) identify four main theories for DOI:

- Innovation-Decision Process Theory
- The Individual Innovativeness Theory
- The Rate of Adoption Theory
- The Theory of Perceived Attributes

Innovativeness on company level relate to three main characteristics (Rogers, 1995; Medlin, 2001; Oliveira & Martins, 2011), namely:

- Individual characteristics, i.e. the description of the leader's attitude towards change
- Internal organisation structural characteristics consisting of centralisation, formalisation, interconnectedness, size and leadership
- External characteristics of the organisation

These characteristics are referred to as system openness, which allows for free information exchange within the organisation as well as to external users of the system.

2.4.5.2 Technology-Organisation-Environment Framework

The TOE framework is described in Tornatzky and Fleischer's book, "The process of technological innovation", in 1990 (Baker, 2011). The adoption and implementation processes of technology influence the technological context, the organisational context and the environmental context of the organisation (Baker, 2011; Bagale, 2014; Alalawi & Alali, 2015).

a) **Technological context:** The technological context includes internal and external technologies relevant to the enterprise (Tornatzky & Fleischer, 1990; Baker, 2011; Bagale, 2014; Alalawi & Alali, 2015). Existing technologies in use or technologies that exist but are not yet in use by the enterprise, are an important influence for adoption. Existing technologies in use by the firm set a limit on the scope and process of technological change, while technologies not in use set the limits to show the enterprise ways in which technology can enable them to evolve and adapt (Baker, 2011).

b) **Organisational context:** The organisational context is related to the firm's characteristics and resources (Oliveira & Martins, 2011; Bagale, 2014; Alalawi & Alali, 2015) and includes the size of the firm, centralisation, formalisation, managerial structure, number of weak resources, human resources and linkages among employees (Baker, 2011).

c) **Environmental context:** Environmental context refers to the structure and size of the industry by including the competitors, macroeconomic context and government regulations (Tornatzky & Fleischer, 1990; Bagale, 2014; Alalawi & Alali, 2015).

According to Tornatzky and Fleischer (1990:154):

> …these three aspects present both constraints and opportunity for technological innovation and influence the way a firm sees the need for, searches for, and adopts new technology.

2.5 Theories

2.5.1 Introduction

A number of theories have been used in the investigation of what determines the use and acceptance of IT in order to gain a competitive advantage in Turkish SMMEs. This section seeks to present the theoretical conceptual framework underpinning the research. Firstly, the use and adoption of IT to gain a competitive advantage in SMMEs is investigated in order to propose an applicable and suitable theoretical framework. A conceptual framework supporting this research is then presented in Chapter Five.

2.5.2 Theoretical framework

The adoption of IT is the decision to make full use of technology by going through a number of stages before accepting or rejecting the new technology (Rogers, 1983; Knol & Stroken, 2001; Moghavvemi *et al.*, 2012).

Technology adoption is a process that begins with the decision-making unit's awareness of new technology during the first stage. The unit seeks or receives information to shape its beliefs and perceptions regarding the new technology (Yu & Tao, 2009). In other words, knowledge of the new technology flows to the decision-making unit, which forms an attitude towards the new technology; then a decision is made to adopt or reject the new technology. Next, the new technology is implemented; lastly, the decision is confirmed (Figure 2.4) (Rogers, 1995; Knol & Stroken, 2001; Moghavvemi *et al.*, 2012).

In this research, gaining a competitive advantage through diffusion and adoption of IT in SMMEs is the focus. Historically, many theories have been used to investigate when and how new technology arise, become accepted, are used effectively in organisations (Medlin, 2001; Sahin, 2006; Celik *et al.*, 2014) and having considered the IT adoption determinants in SMMEs as a technological, environmental, organisational and individual aspect of the business (Hameed & Counsell, 2012; Moghavvemi *et al.*, 2012).

The most appropriate of these theories for the adoption of technology is the Diffusion of Innovations (DOI) Theory (Oliveira & Martins, 2011). DOI is a theory founded in 1962 by Everett Rogers and was developed to explain how, why and at what rate new ideas and technology spread through cultures, operating at individual and organisational level (Oliveira & Martins, 2011).
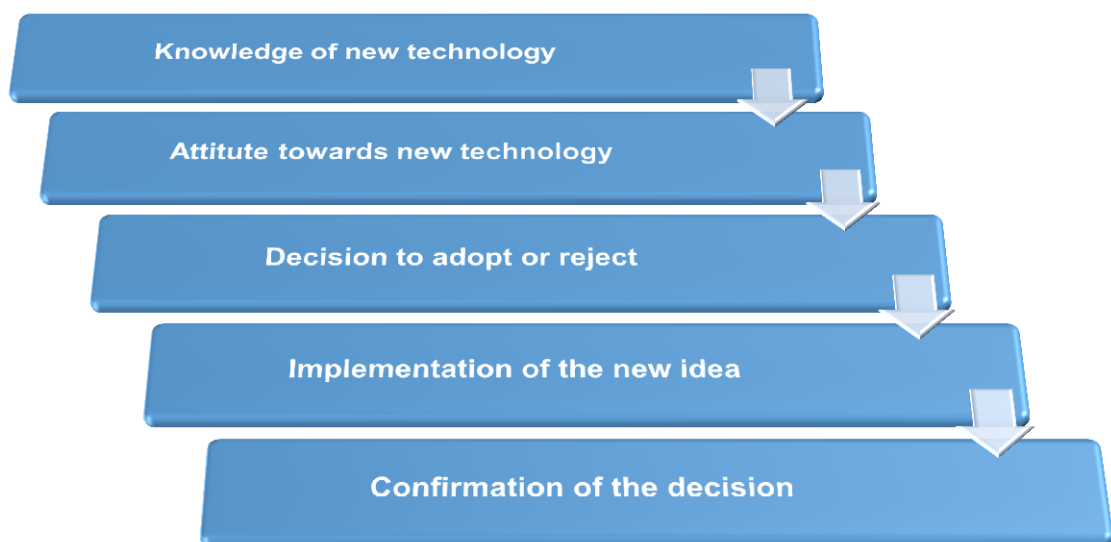
Figure 2.4: Technology adoption processes
(Source: Kumar & Kaur, 2014:179)

2.6 Competitive advantage within SMMEs through IT

2.6.1 Introduction

The expression *competitive advantage* is defined as a:

> …direct impact of the strategies implemented by an organisation that intends to add value for its customers (Porter, 1985; Cardeal & Antonio, 2012).

According to Dauda and Akingbade (2011), IT in any organisation has a significant impact on the quality and quantity of goods and services. Ghobakhloo *et al.* (2011) mention that competitive pressure affects the adoption of IT when SMMEs believe IT can support their competitive position; therefore the purpose of SMMEs adopting IT is to gain a competitive advantage. The competitive pressures create an environment where IT needs to adapt to change and enable SMMEs to monitor, manage and cope to sustain their competitiveness (Dauda & Akingbade, 2011).

A competitive advantage depends on the value the organisation is able to create. Not all organisations have the relevant resources to sustain their competitive advantage, but those with the resources can contribute to an effective performance if the potential of IT is realised (Barney & Clark, 2007; Breznik, 2012).

According to Porter (1985) as well as Daneshvar and Ramesh (2010), IT has an important effect on a competitive advantage in organisations through the provision of cost or differentiation. Furthermore, Daneshvar and Ramesh (2010) state that IT affects value adding activities and allows organisations to gain a competitive advantage by utilising changes in the competitive environment. IT affects competition in three fundamental ways, according to Sobhani (2008:10):

- Alters the rules of competition by changing industry structure
- Creates a competitive advantage
- Spawns new businesses

According to Modimogale (2009), the competitiveness of SMMEs depends on the ways IT is used to support business processes. Furthermore, IT will help SMMEs gain a competitive advantage if it is linked to the business processes instead of only to implementation.

In general, SMMEs will be successful if IT is implemented according to the following critical success factors (Modimogale, 2009:507):

- Owner's motivation, experience and management skills
- Expertise to manage growth
- Access to resources
- Innovation, a competitive advantage
- Effective customer service
- A focus on profit rather than sales

In order to achieve these critical factors, SMMEs need to have an effective and efficient IT strategy and ensure that the IT strategy is aligned with the business strategy by supporting business goals. Most importantly, SMMEs have to employ qualified resources with the specific skills needed for each role (Modimogale, 2009).

The nature of competition is changing and organisations need to understand the impact of IT and how it can create a sustainable competitive advantage (Drucker, 2001; Hemmatfar, Salehi & Bayat, 2010).

2.6.2 Essence of competitive advantage

Zafar, Ishaque and Javaid (2014) indicate a growing support for a positive relationship between IT and its advantages. According to Guzman, Gutierrez, Cortes and Ramirez (2012), the use of IT can reduce costs and create a strong relationship among customers in SMMEs. As a result, IT assists in gaining a competitive advantage and enhancing performance through saving direct and indirect costs (Zafar *et al.*, 2014). Furthermore, Zafar *et al.* (2014) is of the opinion that a competitive advantage can be gained through adopting technological change, and mention that some enterprises become technological leaders and others choose to follow the technological changes. Table 2.2 shows the relationship between IT and competitive advantage based on leaders and followers.

Table 2.2: IT and competitive advantage

(Source: Zafar et al., 2014:3)

	IT Leaders	**IT Followers**
Cost leadership	Enterprises that pioneer in low cost production and the first enterprise down the learning curve.	Enterprises that lower the cost of products or services by imitating the leader enterprises and avoiding R&D costs.
Differentiation	Enterprises that pioneer in unique products or services that increase buyer value and they create innovation in other activities as well.	Enterprises that adopt the product or services which are in demand of buyers by learning from leader enterprises.

Porter (1985, as cited by Zafar *et al.*, 2014), states that technological leadership is only effective when first mover advantage exists. According to Cleff and Rennings (2011), first mover is a term for the first enterprise that brings an innovative product or service to market. First mover advantage arises from three primary sources, namely technological leadership, possession of scarce resources and market position (Green, Miozzo & Dewick, 2005; Cleff & Rennings, 2011).

a) **Technological leadership** is driven by the quick fall of costs, the learning or experience curve and a success in research and development (R&D) (Cleff & Rennings, 2011). The significance of technological leadership is a reputation advantage that depends on the enterprise's credibility and capacity to invest in marketing (Zafar *et al.*, 2014).

b) **Possession of scarce resources:** The pre-emption of resources such as skilled employees and unique channels of distribution or manufacturing facilities are the advantages that first movers get (Zafar *et al.*, 2014).

c) **Early profits:** First movers might be faced with high cost during early scarcity of a new item or skilled employee but they have the privilege to sell their products or services for a high price (Zafar *et al.*, 2014).

2.7 The Theoretical Conceptual Model

This research uses the integrated framework of IT adoption and competitive advantage as proposed by Moghavvemi *et al.* (2012:31). The model (Figure 2.5) is based on Rogers' DOI framework. Moghavvemi *et al.* (2012) focus on effect of attitude and self-efficacy of the IT adoption process for gaining competitive advantage.
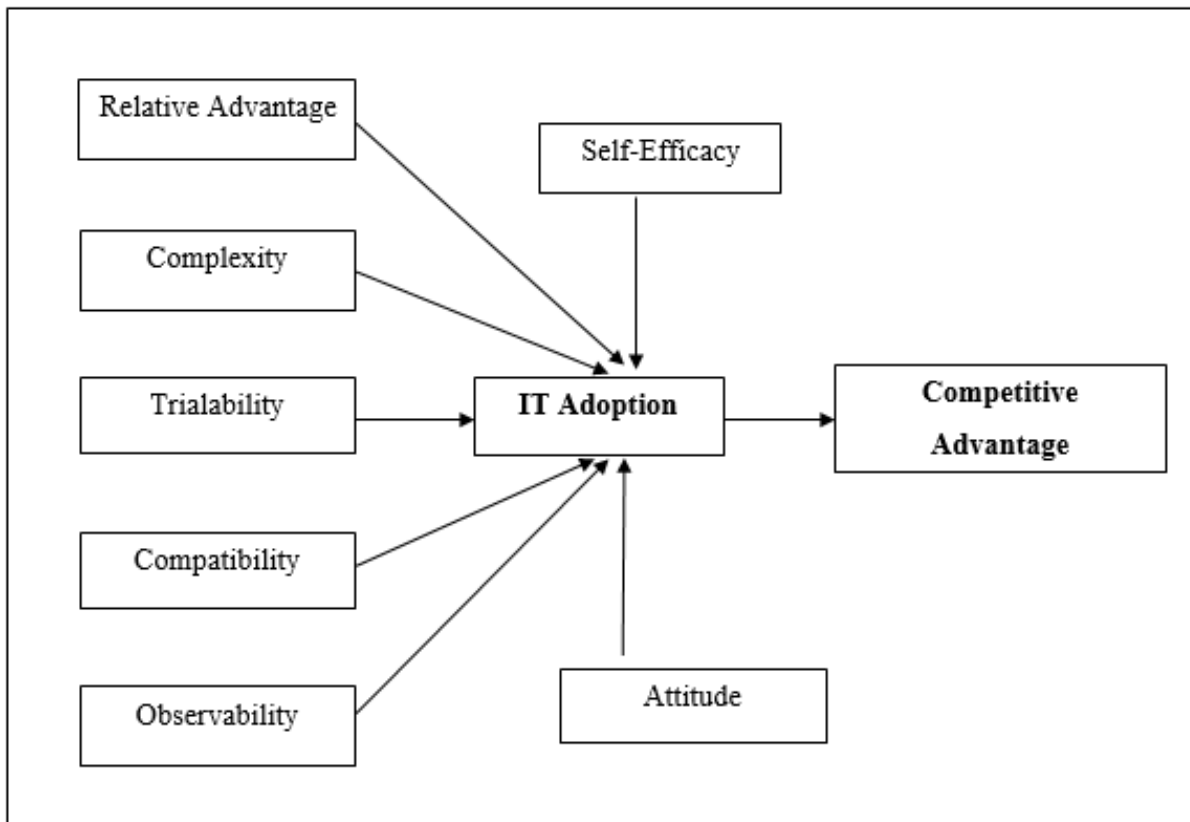
Figure 2.5: Research Theoretical Model

(Source: Moghavvemi et al., 2012:31)

2.8 Summary

New technologies are critical for enterprises to secure a sustainable competitive advantage in the market place (Halim, Ahmad, Ramayah & Hanifah, 2014); therefore Ismail *et al.* (2011) agree that IT is seen as a competitive tool for enterprises. This chapter reviewed the implications of IT usage in order to gain a competitive advantage in SMMEs.

Chapter Two started with the main conceptions and definitions upon which the research is based. Definitions for SMMEs were stated from different sources and the Turkish definition for SMMEs was emphasised. A detailed explanation of Turkish SMMEs was provided, especially in terms of IT aspects. IT usage levels in SMMEs were stated and explained in detail.

IT adoption in SMMEs was explored. Barriers and factors affecting IT adoption and the role and contribution of IT in SMMEs were examined. The role of government and its institutions regarding IT adoption was illustrated. Finally, different IT adoption models were explored and explained in detail.

A theoretical background was given and included the IT adoption processes in detail. Models presented include the attitude towards IT adoption for gaining a competitive advantage.

Regarding the definition of competitive advantage, an in depth exploration was done on competitive advantage in SMMEs. Finally, the relationship between IT and competitive advantage was stated and the contribution of IT towards competitive advantage was explored. The essence of competitive advantage in SMMEs was stated.

In Chapter Three the research methodology is described.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

Figure 3.1: Chapter Three layout

3.1 Introduction

Chapter Three includes the research philosophy, research approach, research strategy, unit of analysis, unit of observation as well as data collection methods and analysis conducted to achieve the research aim and objectives (Figure 3.1). The chapter ends with a section on ethics and a summary. The research questions, aim and objectives are outlined in Chapter One (see Section 1.3).

The purpose of this chapter is to discuss the research design followed during the study. The research philosophy and research strategy, including the research methodologies adopted in the research, are discussed. The research processes are followed as indicated in Figure 3.2.

The research philosophy consists of the researcher's beliefs and experiences in developing knowledge and discovering the truth (Saunders *et al.*, 2009; Sophonthummapharn, 2008; Wahyuni, 2012). A subjective approach was adopted to collect and interpret qualitative data from semi-structured interviews. An interpretivist approach was used to gain an in-depth understanding of the research conducted.

Qualitative research is defined as:

> …understanding how people make sense of their world and the experiences they have in the world (Merriam, 2009:13).

Different methods can be used to collect information, including in-depth interviews and focus groups (Dilshad & Latif, 2013).

Research strategy is defined as:

> …the general plan of how the researcher will go about answering the research questions (Saunders *et al.*, 2009:600).

In this research, a multiple case study has been adopted as strategy. Multiple cases focus on the need to establish whether the findings of the first case occur in other cases (Saunders *et al.*, 2009). It must be emphasised that although a multiple case study strategy was followed, the aim of the study is to explore how SMMEs adopt technology, thus, the findings have not been generalised.

The research consists of two basic components as part of a qualitative methodology, namely a literature analysis and an empirical study. The empirical study consists of primary (interviews) and secondary research (literature and documentation) to collect data. The subjective approach includes two steps, namely communicative validation where the data is collected from interviewees and explanatory validation where data is interpreted (Soini, *et al.*, 2011).
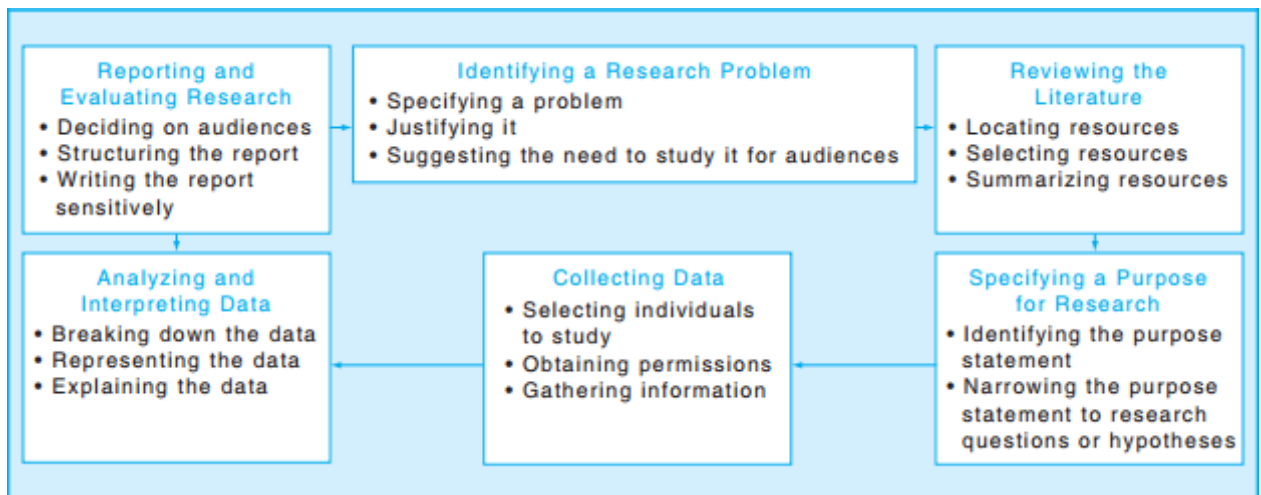
Figure 3.2: Research process life cycle

(Source: Creswell, 2012:8)

3.2 Research philosophy

The researcher's beliefs and experiences influence a particular research project. The way in which a researcher views the environment underlines the choice of research practices that should be used (Kafle, 2011). Sophonthummapharn (2008:101) states that:

> …the researcher's beliefs and experiences are called research philosophy or a paradigm.

Sophonthummapharn (2008) also mentions that the research philosophy includes knowledge development, truth discovery and knowledge creation.

According to Scotland (2012), research philosophy has two prominent approaches, namely ontology and epistemology. Ontology is the assumptions individuals make about the nature or reality and epistemology is the assumptions about the most suitable ways to inquire into the nature of the world (Easterby, Thorpe & Jackson, 2012; Sophonthummapharn, 2008; Scotland, 2012).

3.2.1 Ontology

Ontology is concerned with views of what exists and also refers to the claims a particular paradigm makes about reality or truth (Hitchcock & Hughes, 1989; Scotland, 2012) and the researcher's assumptions about the way the world operates (Saunders *et al.*, 2009). Ontology is the science or theory of being and concerned with the nature of reality by answering the questions of what can be known, and how (Kafle, 2011). There are two main aspects of ontology, namely objectivism and subjectivism (Scotland, 2012:10) (Figure 3.3).

According to (Scotland, 2012), subjectivism is defined as:

> …an ontological position that asserts that entities are created from the perceptions and consequent actions of those social actors responsible for their creation.

Objectivism is defined as:

> …an ontological position that asserts that social entities exist in a reality external to, and independent of, social actors concerned with their existence (Scotland, 2012).

Objectivism	Subjectivism
Quantitative	Qualitative
Positivist	Phenomenological
Scientific	Humanistic
Experimentalist	Interpretivist
Traditionalist	
Functionalist	

Figure 3.3: Alternative philosophical paradigm names
(Source: Holden & Lynch, 2004:4)

This research has adopted a subjectivist stance in which the researcher believes that the reality is dependent on social actors and assumes that individuals contribute to social phenomena (Wahyuni, 2012). In this case, the researcher's role is to explore the social actors' motives, actions and intentions in a meaningful way (Saunders *et al.*, 2009). The researcher interacts with the social actors (respondents) in order to explore and understand their environment through interpretations and meanings.

3.2.2 Epistemology

Bryman (2004:11) defines epistemology as:

> …a theory of knowledge and concern of what is considered as acceptable knowledge in a particular discipline.

Epistemological assumptions can be associated with the nature of knowledge and the methods through which that knowledge can be acquired. There are two epistemological assumptions, namely interpretivism and positivism (Bahari, 2010). According to Goldkuhl (2012), the core idea of interpretivism is to work with subjective meanings already existing in the social world.

The main goal of the interpretivist is to explore the meaning of the social events from the point of view of those who live it. Furthermore, the researcher must interpret these events, understand the process of meaning construction, and reveal what meanings are associated with people's actions (Schwandt, 1998; Andrade, 2009; Chowdhury, 2014).

The epistemology of this research is aimed at exploring the phenomena of the competitive advantage process through IT in Turkish SMMEs by accessing the meaning and inductive reasoning behind the research respondents' perceptions of the problems concerning the adoption of IT in Turkish SMMEs. The researcher collects qualitative data from respondents on the topic and acknowledges the different perspectives from interviewees using the interpretive philosophy. In interpretive research philosophy, the researcher does not only interact with the environment but also seeks to make sense of it through interviewees' interpretation of events and the meaning they draw from those events (Saunders *et al.*, 2009; Meyer, 2014; Chowdhury, 2014). Therefore, an interpretivist approach assists in gaining a close understanding of the research context, including the collection of qualitative data.

3.3 Research approach

According to Andersson, Skoog and Svensson (2014), there are two types of research approaches for the researchers to follow, namely a deductive and an inductive approach (Figure 3.4). A deductive approach is applicable when the researcher develops a theory and hypothesis, and then designs a research strategy to test the hypothesis. An inductive approach is applicable when the researcher collects data and develops a theory as a result of the data analysis (Olckers, 2011).
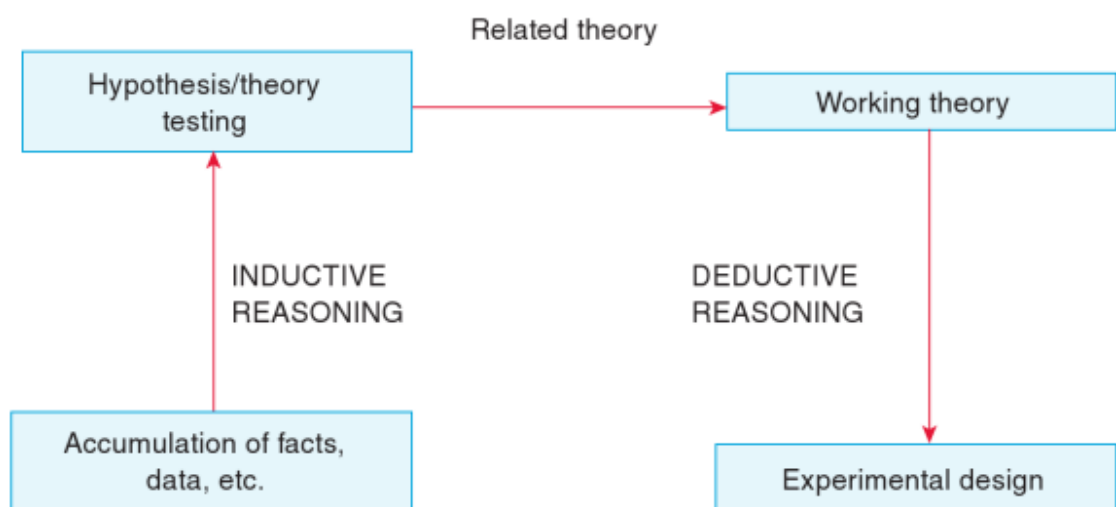
Figure 3.4: Inductive and deductive approach
(Source: Gray, 2014:18)

A deductive approach represents the most common natural view of the relationship between research and theory (Bryman & Bell, 2011) and is applicable when the researcher develops a theory and hypothesis, and then designs a research strategy to test the hypothesis. This approach is suitable when researchers have an in-depth understanding of literature on the topic by testing the hypothesis and using the framework (Andersson *et al.,* 2014).

An inductive approach is:

> …a systematic procedure for analysing qualitative data in which the analysis is likely to be guided by specific evaluation objectives (Thomas, 2006:238).

This approach is applicable when the researcher collects data and develops a theory as a result of the data analysis (Saunders *et al.,* 2009; Bryman & Bell, 2011). An inductive approach consists of derived concepts, themes or a model through interpretations from a detailed reading of raw data (Bernauer, Lichtman, Jacobs & Robertson, 2013) (Figure 3.5).

Researcher gathers information
(i.e. interviews, observation)

Researcher asks open-ended
questions to participants or
records field notes

Researcher analyses data to form
themes or categories

Researcher looks for broad
patterns, generalisations or
theories from themes or categories

Generalisations or theories to past
experience and literature
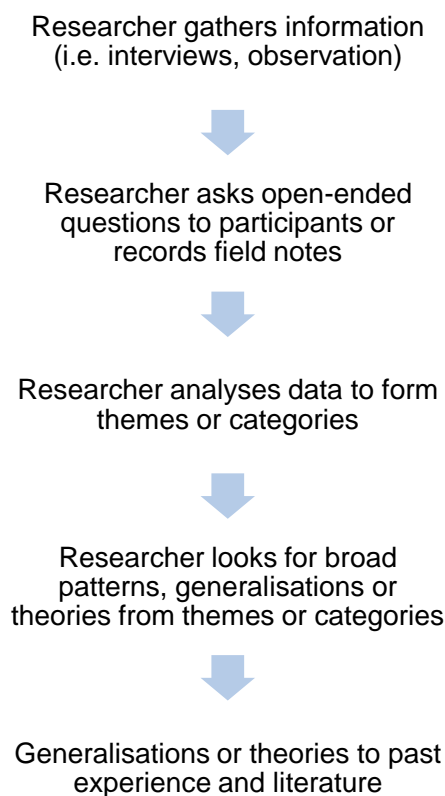
Figure 3.5: Inductive approach logic
(Source: Mullick et al., 2012:5)

This approach is followed by five steps, namely a) preparation of raw data files; b) close reading of text; c) creation of categories; d) Interpretation of data; and e) continued revision and refinement of the category system (Mullick, Deppeler & Sharma, 2012:5).

In this research, an inductive approach has been adopted with data collected from interviews and analysed using a descriptive qualitative analysis method to provide a set of guidelines and recommendations for Turkish SMMEs on the subject of IT adoption to gain a competitive advantage.

3.4 Research strategy

A multiple case study has been adopted as strategy for this research. According to Yin (1994:13), a case study:

> …is an empirical inquiry to investigate a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident.

Robson (2002:181) defines a case study as:

> …a strategy for doing research and it includes an empirical investigation of a particular phenomenon within its context by using multiple sources of evidence.

According to Yin (2014:2), "the case study investigates a contemporary phenomenon in its real world context".

The case study can consist of a single case or multiple cases. Furthermore, the multiple cases focus on the need to establish whether the findings of the first case occur in other cases by generalising the findings (Saunders *et al.*, 2009). In this research, the use of multiple case studies assists in gaining a rich understanding of the context of the research. Table 3.1 shows in which situations it is appropriate to adopt a case study as a research strategy.

Table 3.1: When to use case studies

(Source: Yin, 2003:6)

When to use case studies in research	In this research
When the research question type is associated with "how" and "what" questions.	The research questions consist of "how" and "what" questions. **Research Question 1:** How do Turkish SMMEs manage their information technology to gain a competitive advantage? **Research Question 2:** What are the challenges Turkish SMMEs have to face that influence their adoption or non-adoption of new technology innovations?
When the control is on behavioural events and the researcher has little or no possibility of controlling these events.	The researcher had no control during the data collection.
When the research focuses on real life context.	Data was collected through face-to-face interviews and existing literature.

Case studies examine a phenomenon in its natural setting, employing multiple methods of data collection to gather information from one or a few entities (Benbasat, Goldstein & Mead, 1987; Ololube & Kpolovie, 2012). The case study research can be positivist, interpretive, or critical, depending on the researcher's philosophical assumptions (Myers, 1999).

In qualitative and interpretive case studies the researcher is directly involved in every stage of data collection and analysis (Morgan & Smircich, 1980; Morse, 1994; Creswell, 1998; Klein & Myers, 1999; Moriarty, 2011; Marshall, Cardon, Poddar & Fontenot, 2013).

3.4.1   Unit of analysis

A unit of analysis is the subject of the research that a researcher may want to generalise (Lewisbeck *et al.,* 2004). The unit of analysis for this research is twenty five (25) small insurance service providers (SMMEs) in the city of Antalya in Southern Turkey. No attempt has been made to generalise the findings as the aim of the study is to explore the challenges of adopting information technology by Turkish SMMEs, and how Turkish SMMEs can gain a competitive advantage through information technology.

3.4.2   Unit of observation

Lavrakas (2008:928) defines unit of observation as:

> …an object about which information is collected. Researchers base conclusions on information that is collected and analysed, so using defined units of observation in a survey or other study helps to clarify the reasonable conclusions that can be drawn from the information collected.

In this research, the unit of observation is the 17 owners and 8 managers of the SMMEs.

3.5 Sampling technique

According to Binu, Mayya and Dhar (2014), there are two types of sampling techniques, namely probability sampling and non-probability sampling (Table 3.2). If each element does not have a compulsory selection chance, it is a non-probability sampling method. The convenience sample is sometimes referred to as an accidental or availability sample (Mutchnick & Berg, 1996; Babbie, 1998; Moriarty, 2011).

Advantages of convenience sampling are shown in Table 3.3.

Table 3.2: Characteristics of probability and non-probability sampling methods

(Source: Ishak & Bakar, 2014:32)

Probability sampling	Non-probability sampling	In this research
Generalisations can be made to the population as defined by the sampling frame.	It cannot be generalised beyond the actual sample.	No attempt has been made to generalise the findings.
Population can be estimated using parameters.	It is not concerned with population parameters.	Population characteristics were not considered.
It accommodates the use of statistics and hypotheses testing.	Usually concerned with the exploratory nature of research.	The aim of the research was to explore the challenges of adopting information technology in Turkish SMMEs, and how Turkish SMMEs can gain a competitive advantage through information technology.
Used to eliminate bias.	Adequacy of the sampling measure cannot be ascertained.	Every selected sample provided raw data needed to answer the research questions.
Units must be selected randomly.	It is easier, cheaper and can be done faster.	The data was collected through face-to-face interviews without incurring any costs.

In this research, convenience sampling has been selected as one of the categories in non-probability sampling. Hence, samples were conveniently selected in Southern Turkey according to availability.

Table 3.3: Advantages of convenience sampling

(Source: *Oppong, 2013:203)*

Advantages of convenience sampling
Convenience sampling is easy to carry out with few rules governing how the sample should be collected.
The relative cost and time required to carry out a convenience sample are small in comparison to probability sampling techniques. This enables the research to achieve the sample size he/she wants in a relatively fast and inexpensive way.
The convenience sample may assist in gathering useful data and information that would not have been possible using probability sampling techniques, which require more formal access to lists of populations.

3.6 Research methodology

3.6.1 The qualitative paradigm

According to Patton (2002), qualitative research aims to understand the specific interactions in a particular event. The aim of qualitative research is to truthfully present findings to others who are interested in a specific research topic.

Qualitative research is much more subjective than quantitative research and uses very different methods to collect information, mainly from in-depth interviews or focus groups (Anderson, 2006; Bahari, 2010).

The objective of qualitative research is to gather an in-depth understanding of human behavior in order to determine the reasons that make the person behave in a particular manner. This type of research relies more on the quality than quantity paradigm (Githiora, 2013). According to Dangal (2012:3), the most important features of qualitative research as adopted from Hoepfl (1997), are:

- Qualitative research uses the natural setting as the source of data
- The aim of the researcher is to observe, describe and interpret settings as they occur naturally while taking a neutral position
- The researcher becomes the human instrument of data collection
- Qualitative researchers predominantly use inductive data analysis
- Qualitative research reports are descriptive, incorporating expressive language and presence of voice in the text
- Qualitative research is aimed at discovering the meanings individuals have of events and an interpretation of those meanings by the researcher
- Qualitative researchers pay attention to the idiosyncratic as well as the pervasive, seeking the uniqueness of each case
- Qualitative research has an emergent design which has researchers focusing on the emerging process as well as outcomes of the research
- Qualitative research is judged using special criteria for trustworthiness

3.7 Data collection

The primary data collection method selected for this research is interviews, which were conducted using an Interview Guide consisting of a semi-structured interview questionnaire (see Section 4.3.1). The Interview Guide consists of two parts. The first part of the Interview Guide explores the IT systems which SMMEs use in the insurance industry, and the contribution of the IT systems in terms of a competitive advantage. It also explores the attitude of SMMEs towards technology and the possible competitive advantages this technology may bring. The second part of the Interview Guide explores the barriers of technology and innovation that SMMEs face when adoption is considered. The Interview Guide is also directed to explore which technologies and innovations are needed for Turkish SMMEs to create a competitive advantage.

There are several types of interviews, namely: a) face-to-face interviews; b) group interviews; c) telephone interviews; and d) email or Internet interviews (Figure 3.6).

a) **Face-to-face interviews** are one to one interviews and carried out between an interviewer and interviewee (Bolderston, 2012). The semi-structured or unstructured interview is used for qualitative research because it allows probing into and clarifies the research problem.

b) **Group interviews** allow a number of interviewees to be interviewed simultaneously (Patton, 2002; Bolderston, 2012). The focus of group interviews is to gather narratives, rather than discussion, to solve problems or make decisions (Bolderston, 2012).

c) **Telephone interviews** are cost and time effective compared to in-person interviews and the method is useful when data is collected from geographically remote interviewees (Szolnoki & Hoffmann, 2013).

d) **Email or Internet interviews** allow for remote interviewing. The computer is a methodological tool for research and can be used for emails, instant messaging and video conferencing, among others (Bolderston, 2012).
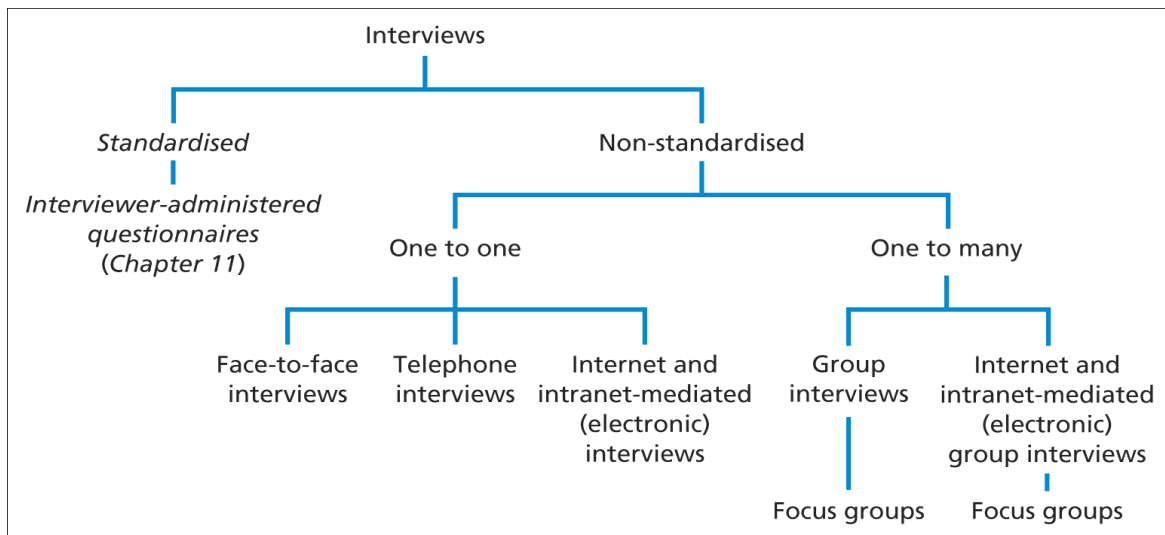
Figure 3.6: Types of interviews
(Source: Saunders et al., 2009:321)

The interview mode selected for this research is face-to-face. For the semi-structured questionnaire, the list of questions was presented to the respondents based on the research questions (see Section 1.3). Secondary data such as public documents, government acts and laws was obtained from literature. Qualitative data collection methods are shown in Table 3.4.

Table 3.4: Qualitative data collection methods

(Creswell, 2012:214)

Data collection methods	Data types	Definition of data type
Observation	Field notes and drawings.	Unstructured text data during observation by the researcher.
Interviews and questionnaires	Transcriptions of open-ended interviews or open-ended questions on questionnaire.	Unstructured text data obtained from transcribing audiotapes of interviews or by transcribing open-ended responses to questions on questionnaire.
Documents	Hand recorded notes about documents or optically scanned documents.	Public and private records available to the researcher.
Audio-visual materials	Pictures, photographs, videotapes, objects and sounds.	Audio-visual materials consisting of images or sounds of people or places recorded by the researcher.

During semi-structured interviews, a list of interview questions linked to the research questions and aim of the study as a protocol has been covered. The protocol is a technique to increase reliability; it is intended to guide the researcher in carrying out the semi-structured interview (Yin 1994; Ololube & Kpolovie, 2012). Face-to-face one-hour meetings with the interviewees have been conducted. The researcher personally administered all the interviews. The data was covered by audio recording. Before recording each interview, permission to record was obtained from the interviewee. After completing the interviews, the researcher's next step was to listen to the tapes and transcribe them into an Excel document (Annexure 1). According to Ololube and Kpolovie (2012), the researcher should continue keeping observational memos throughout the analysis process. Gillham (2005) states that the main advantage of audio recording is to overcome the writing barrier and allow the researcher to record respondents' views in a way that provides more and richer material by giving the respondents more freedom to say as much as they want. Saunders *et al.* (2009) name further advantages of audio recording, including allowing the interviewer to focus on questioning and listening and re-listening to the interview and quoting verbatim (Figure 3.7).

Advantages

- Allows interviewer to concentrate on questioning and listening
- Allows questions formulated at an interview to be accurately recorded for use in later interviews where appropriate
- Can re-listen to the interview
- Accurate and unbiased record provided
- Allows direct quotes to be used
- Permanent record for others to use

Figure 3.7: Advantages of audio recording

(Source: Saunders et al., 2009:325)

3.8 Data analysis

Qualitative research is used for entering the world of the subjects, recording their perceptions and behaviours, analysing the verbal or non-verbal data collected from participants and then supplementing the data with literature (Ololube & Kpolovie 2012; Marshall *et al.*, 2013).

In this research, data is analysed using a descriptive qualitative analysis method, which includes using interpretive and descriptive tools to analyse data, hermeneutics and phenomenology. Data analysis consists of examining, categorising and recombining the data gathered and interpreting the data to address the initial propositions of this research.

Yildirim and Yuksel (2015) indicate how a phenomenological study describes the meaning of the lived experiences for several individuals about a concept or the phenomenon. Interviews are the key data collection methods within phenomenology (Aspers, 2004). The hermeneutics method focuses on the meaning of qualitative data to understand the human aspects of the research subject (Myers, 2008).

The collected data was formalised in written form using Microsoft Office Excel. All audio data collected from respondents were transcribed and documented in an Excel document. Thirty eight (38) keywords were identified from the collected data according to their similarities and dissimilarities. These keywords were summarised into 12 themes where each theme refers to individual interview questions. Finally, the 12 themes were summarised into 4 main categories to answer the research questions.

3.9 Ethics

The research design is the first ethical concern in this research. According to Pillay (2013), the research design must follow the ontological, epistemological and theoretical positioning until one believes knowledge has been discovered.

The second ethical concern is the data collection and representation. According to Neale (2013), giving respondents an informed consent about participating in research is a basic principle of research ethics. Zikmund *et al.* (2010) argue that the written request has to be provided to selected respondents before the interview takes place when investigating phenomena using a case study. In this research, a written request was sent to the respondents and included the following:

- The purpose, methods and intended possible uses of the research
- Description of why the respondent was chosen and what his/her participation entails in the research

- Option of acceptance or rejection of the interview at any time without explanation
- Research respondents participate voluntary, free from any force (Leicester, 2007)

The privacy of the respondents has been maintained at all-times throughout the interviews. Strict confidentiality and anonymity was put in place by providing assurance to the respondents at the commencement of interviews. This contributes to creating a strong and trusting relationship (Saunders *et al.*, 2009). As a result, the respondents were assigned generic names such as Interviewee 1, Interviewee 2...

3.10 Summary

The aim of this chapter was to provide an overview of the research philosophy, including the ontology and epistemology of the research. The research approach was outlined with a description of the approach, strategy and methods of data collection in a qualitative format.

The ontological approach of the research is based on subjectivism which believes that phenomena exist because of the social interaction and actions based on the perceptions of actors. The epistemological approach of the research is based on interpretivism which holds that reality is based on the subjective interpretation of the researcher to understand the reason behind the low adoption of IT in Turkish SMMEs to gain a competitive advantage.

An inductive approach was selected to propose a set of guidelines for Turkish SMMEs from the findings of the research.

The research strategy is based on multiple case studies. The unit of analysis is the twenty five (25) small insurance service providers (SMMEs) in the city of Antalya in Southern Turkey. The unit of observation is the 17 owners and 8 managers in SMMEs.

In following chapter, the results of the research are presented as findings relating to the research questions.

CHAPTER FOUR: DATA ANALYSIS, RESEARCH FINDINGS AND THEMES
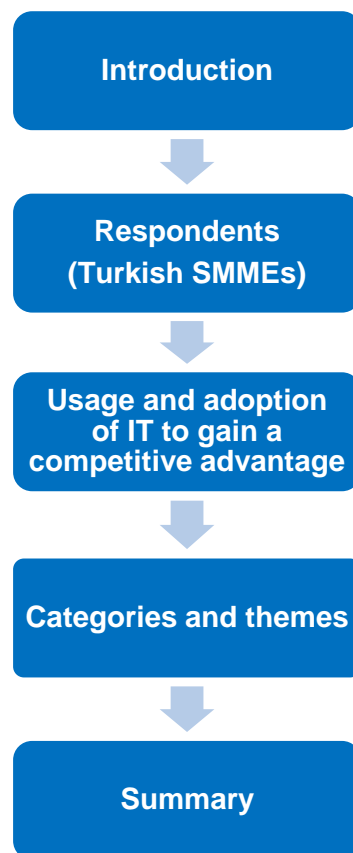
Figure 4.1: Chapter Four layout

4.1 Introduction

Chapter Two provides a literature-based review on the adoption and usage of information technology for creating a competitive advantage in SMMEs. This is done within the context of Turkey. Chapter Three discusses in detail the research design and methodology adopted to conduct the research. Chapter Four presents the findings, as shown in Figure 4.1, based on the data collected from the interviews conducted with small financial service providers (insurance broker agencies) in Southern Turkey (Figure 4.2).

The research builds from multiple case studies using Turkish SMMEs as the unit of analysis. In-depth interviews using a semi-structured questionnaire as well as data collected from literature and documents are used for the data analysis.

Figure 4.2: A map of Turkey regions (Southern region known as Mediterranean)
(Source: Zetaboards, 2015)

For the convenience of the reader, the problem statement, research aim, and main research questions and sub-questions are stated again.

Problem Statement: SMMEs in Turkey do not effectively leverage their IT to create a competitive advantage. This leads to low productivity among SMMEs and a low contribution by the SMMEs towards the Turkish economy.

The questions directing the research are:

Research Question 1: How do Turkish SMMEs manage their information technology to gain a competitive advantage?

> *Sub-question 1.1: How do Turkish SMMEs evaluate information technology that can be used to create a competitive advantage in SMMEs?*

> *Sub-question 1.2: How do Turkish SMMEs manage the adoption of information technology in their businesses?*

Research Question 2: What are the challenges Turkish SMMEs have to face that influence their adoption or non-adoption of new technology innovations?

> *Sub-question 2.1: What are the factors influencing the adoption of new technology in Turkish SMMEs?*

Sub-question 2.2: What technologies do SMMEs need in order to create a competitive advantage in Turkey?

Research aim: The aim of the research is to explore the challenges of adopting information technology in order to gain a competitive advantage for Turkish SMMEs.

The study focuses on the importance of IT in the insurance industry to propose a set of guidelines to small insurance brokers on how to make use of IT to create a competitive advantage in their enterprises.

In the next section the profiles of the SMMEs are discussed (Figure 4.3). This is followed by the findings from the data collected from the interviews. Following the findings from the interviews, the categories and theme development relating to the research questions are addressed.

4.2 Respondents (Turkish SMMEs)

4.2.1 SMMEs (Insurance Broker Agencies)

The insurance broker agencies act on behalf of specific insurance companies according to terms of agreement between the agency and the insurance company. There are two types of insurance broker agencies in Turkey, namely *agents* and *partners*.

The insurance broker agency acts as an *agent* for the insurance company when the agency does not have the right to prepare financial statements or any other agreement for clients on behalf of the insurance company; agents work with, and are only able to market the insurance company's available services.

The *partner* acts on behalf of an insurance company, entering into agreements binding the insurance company. In this case, the partners have rights to prepare agreements and other necessary documents on behalf of the insurance company. The partners only have to inform the insurance company when an agreement has been reached between the client and company.

The SMMEs interviewed are all agents for the insurance companies. Their functions are to:

- Conduct preparatory work before an insurance or reinsurance agreement is effected
- Assist in the execution of such agreements
- Assist in the collection of claims

These functions are done for different insurance products such as life, property, health, and car insurance.

Twenty five (25) small-sized insurance broker agencies (SMMEs) were interviewed. Most of the SMMEs (20) have between 1 and 5 employees. Table 4.1 shows the participating SMMEs according to number of employees.

Table 4.1: Number of employees of participating SMMEs

Number of Employees	Number of SMMEs	Percentage
1 – 5	20	80
6 – 10	3	12
10 – 20	1	4
>20	1	4

Forty eight (48) per cent of the SMMEs indicated their annual turnover to be between R2.5 million and R5 million. Table 4.2 illustrates the annual turnover per SMME obtained from the SMMEs participating in the research. One (1) SMME has a turnover of between R25 and R50 million and one (1) SMME has a turnover exceeding R50 million. Three (3) SMMEs' turnover is between R5 and R25 million, while twelve (12) SMMEs are grouped in the category of R2.5 to R5 million. The other eight (8) SMMEs have a turnover of less than R2.5 million each.

Table 4.2: Annual turnover (Rand)

Annual Turnover (Rand)	Number of SMMEs	Percentage
< 1.25 million	3	12
1.25 million – 2.5 million	5	20
2.5 million – 5 million	12	48
5 million – 25 million	3	12
25 million – 50 million	1	4
> 50 million	1	4
Total	**25**	**100**

4.2.2 Demographic features of respondents

Interviews were conducted with seventeen business owners (68 per cent) and eight managers (32 per cent) working for the owners of the SMMEs. The interviewees have between 1 and 12 years experiences in the industry. The owners who have been interviewed are all responsible for the overall management, decision making, financial and business operations.

The managers are responsible for the general management and business operations of the respective SMMEs. The education levels of the interviewees are mostly high school (60 per cent). Two of the interviewees have a tertiary education. The ratio of male to female is 56:44.

Detailed demographic characteristics of the interviewees are shown in Table 4.3.

Table 4.3: Demographic characteristics of the interviewees

Demographic Features of Interviewees	Number	Percentage (%)
Gender		
Male	14	56
Female	11	44
Education Level		
High School	15	60
Undergraduate	8	32
Bachelor's Degree	1	4
Master's Degree	1	4
Job Title		
Owner	17	68
Manager	8	32
Experience		
Under 2 years	4	16
3 – 5 years	8	32
6 – 10 years	10	40
More than 10 years	3	12

4.3 Data analysis on usage and adoption of IT to gain a competitive advantage within SMMEs

4.3.1 Interviews

The Interview Guide consists of two parts (see Section 3.7). The first part explores the SMME use of IT systems in the insurance industry, and the contribution of the IT systems in terms of a competitive advantage. It also explores the attitude of SMMEs towards technology and the possible competitive advantage this technology might bring.

The second part of the Interview Guide explores the barriers of technology and innovation that SMMEs are faced with when adoption is considered.

The Interview Guide is also directed to explore what technology and innovation are needed for Turkish SMMEs to create a competitive advantage.

4.3.1.1 Interview Guide—Part 1

The first part of the Interview Guide has been compiled to answer **Research Question 1**, which determines the evaluation process of information technology and creating a competitive advantage in Turkish SMMEs as well as the management of information technology in SMMEs when new information technology is adopted.

Research Question 1: How do Turkish SMMEs manage their information technology to gain a competitive advantage?

> **Sub-question 1.1:** *How do Turkish SMMEs evaluate information technology that can be used to create a competitive advantage in SMMEs?*

Interview Question 1: Which IT systems are you using in your enterprise?

This question was asked to determine which IT systems the interviewees use in their SMMEs. All of the interviewees indicated that they are using "some sort of" IT system in their enterprises. Table 4.4 shows the types of IT systems that SMMEs use, which include special software for insurance broker agencies such as SAYSIS, SFS, SAT Request System and Cream Software.

Table 4.4: IT systems that SMMEs use

IT Systems	Number of SMMEs	Percentage
Special Software for Agencies (SAYSIS, SFS, SAT, Cream Software, Polixir, Sigorta CRM)	6	24
Microsoft Office Excel	19	76

Most of the SMMEs (19) use Microsoft Office (MO) Excel in their businesses. Although there are opportunities to adopt free IT software products, most of the SMMEs are not aware of it. Only two interviewees have adopted free software products from the Internet. Interviewee 21 stated that:

> …we use free software (Sigorta CRM) for our customer data and integrated accounting system which we found on [the] Internet for free (see Annexure 1.21).

This was also mentioned by Interviewee 8:

> …we use free insurance data software (Polixir) that helps to store our customer data (see Annexure 1.8).

Although all the SMMEs make use of MO Excel, six (6) of them also use different IT systems, such as mentioned by Interviewee 1:

> …we have adopted [the] SAT Request System in our business to contact the main office immediately. The system helps us to collect, store and process our customer data and manage the finance[s] as well as our marketing strategies are more effective with this system (see Annexure 1.1).

Interviewee 2 mentioned that:

> …we use Cream software where we can collect, store and analyse our customer data nationally and manage our finance effectively (see Annexure 1.2).

High level IT systems such as SAYSIS, SFS and Cream Software are used by 24 per cent of the interviewees to create a competitive advantage. The rest of the SMMEs (76 per cent) are not interested in IT systems and only use Microsoft Office Excel.

Interview Question 2: What is the usage level of your IT systems that you use in your enterprise?

This question was asked to gather information from the interviewees on the level of the IT systems implemented and the usage of these systems in their SMMEs. The level of the IT systems implemented depends on specific business needs. According to the responses, 76 per cent of the interviewees use a low level of IT. These SMMEs use IT only for their customer data and not for any other purposes such as contributing towards a competitive advantage for their businesses. It is mostly MO Excel that is used to store and monitor customer data. Table 4.5 shows the level of the IT Systems implemented.

Table 4.5: The level of IT systems implemented by SMMEs

Level of IT	Number of SMMEs	Percentage
Low (Only MO Excel)	19	76
Medium (Integration of business processes)	3	12
Advanced	3	12

Two of the interviewees stated that they have very basic business processes and MO Excel is sufficient for their business.

Interviewee 11 mentioned:

> …we have basic processes in our business such as managing customer data. We use IT systems only when we have new customers or when current customers claim insurance and we use MO Excel for these purposes (see Annexure 1.11).

This was also mentioned by Interviewee 16:

> …we are using very basic levels of IT systems, which is MO Excel. It helps us to manage our customer data. We believe that we, as a small business, do not need an advanced level IT system (see Annexure 1.16).

Interviewee 3 stated:

> …we use MO Excel software which provides us data management (see Annexure 1.3).

Some of the interviewees stated that they are aware of the limitations of MO Excel, but they still prefer to use MO Excel. For example, Interviewee 4 indicated:

> …we have been using MO Excel since we started our business. Although MO Excel is very limited in terms of competitiveness, it is convenient and easy to use so we are not planning to use any other IT systems (see Annexure 1.4).

Furthermore, some of the interviewees stated that they have attempted to adopt advanced level IT systems in their businesses, but they could not manage the deployed IT systems.

> …we tried to adopt [an] advanced level IT system in our business, but it did not work how we expected. It was very complex for the staff. Then we just continued to use MO Excel (Interviewee 18) (see Annexure 1.18).

The balance of the interviewees (24 per cent) is of the opinion that technology is an important tool for their business:

> …technology is an important tool for our business. Our advanced level system provides effectiveness in the business process therefore we offer better service to our customers (Interviewee 1) (see Annexure 1.1).

Twenty four (24) per cent of SMMEs use medium/advanced software which assists them to improve their business processes and financial strategies to gain a competitive advantage as the processes and systems save them time.

> We consider technology as an effective tool to manage our business. As we are using advanced level software for our different business processes, we have an effective management system that helps us to provide better and quick service than our competitors (Interviewee 10) (see Annexure 1.10).

Interviewee 21 indicated that they have adopted advanced level IT systems after using MO Excel for a number of years, and that IT systems can indeed provide a competitive advantage:

> …we used MO Excel for five years. It was very basic and not enough for our business processes. So we adopted [a] more medium level IT system to manage our all business processes together to provide better service as well as to gain a competitive advantage (see Annexure 1.21).

FINDING-1: There is a low level of IT software product usage by SMMEs (insurance broker agencies).

FINDING-2: SMMEs are often not aware of free IT software products available on the Internet.

According to interview question 1 and question 2, the IT usage level is low within SMMEs. The following questions were asked to explore, even at a low usage level, the implementation areas of the chosen IT system.

Interview Question 3: What are the implementation areas of the chosen IT systems?

Although SMMEs might not be using IT to gain a competitive advantage, they do use some level of IT in their businesses. Interview question 3 was asked to explore the areas of IT implementation within SMMEs.

The answer to this question by most (10) of the SMMEs is that the chosen IT system is only used for customer data management and they use MO Excel charts to keep track of their finance:

> …we use MO Excel in order to manage our customer data and charts help us to keep track of our finance. It shows us our cost and profit (Interviewee 5) (see Annexure 1.5).

> …we use MO Excel to handle our customer data only (Interviewee 12) (see Annexure 1.12).

Nine (9) of the interviewees do not use IT systems for their finance but prefer using traditional accounting. Interviewee 11 stated that:

> …we manage our customer data with MO Excel and use old fashioned bookkeeping for managing our finance (see Annexure 1.11).

Interviewee 6 stated the following:

> … MO Excel stores our customer data and I keep track of the finance as an owner with old fashioned bookkeeping (see Annexure 1.6).

Only 24 per cent of the interviewees are using medium or advanced level IT systems, mostly for other purposes such as integration of different business processes (Table 4.6).

For example, Interviewee 2 stated that:

> …our system is used for not only customer data but also for accounting and finance; we use one IT system for all our business processes (see Annexure 1.2).

Interviewee 10 stated that:

> …our system integrates our different business process, for example, it generates financial statement[s] according to our sales and claims or a sales report, etc. (see Annexure 1.10).

Table 4.6: Areas where IT systems are implemented by SMMEs

IT Implementation Fields	Interviewees
Accounting and Finance	24%
Customer data management (sales)	76%

FINDING-3:   SMMEs do not use the potential that IT can offer to the business.

FINDING-4:   SMMEs do not integrate business processes with their IT systems.

Interview Question 4: How did you evaluate the IT system before you adopted it?

The success of IT investments is dependent on the right performance measures which help to measure the outcome of the IT investments (not just its cost, but also timeliness and quality). There is a lack of awareness by SMMEs on IT investment outcome and the risks involved.

Many of the SMMEs do not want to invest in IT as they do not understand the potential positive outcomes such investments offer. They also do not see how IT can reduce risk in their businesses. For these SMMEs the cost of IT is too high. Interviewee 5 stated that:

> …we evaluated our system according to cost; that is why we chose to use MO Excel to track our customer data which we found that it is the cheaper option (see Annexure 1.5).

This point of view is supported by many of the interviewees. For example, Interviewee 16 mentioned that:

> …IT adoption can be very risky, so we did not want to take a risk and spend too much money on IT; that is why we chose MO Excel to work with. It is easy and cheap (see Annexure 1.16)

Interviewee 24 supports Interviewee 16 by saying that IT adoption can be very risky:

> …investing in IT development is risky for us, as a small business, and we do not want to take that risk to adopt advanced level IT systems. MO Excel is not the best software product but it helps our business to operate and it is risk free (see Annexure 1.24).

Furthermore, two of the interviewees (8 per cent) stated that they adopted more advanced level IT systems in their business, but they could not cope with the new IT systems. Interviewee 18 stated that:

> …we adopted [a] broader IT system to manage our business process, but it was difficult to use and expensive to maintain that system. That is why we chose MO Excel; it is cheap and easy to use (see Annexure 1.18).

Interviewee 22 is of similar opinion as Interviewee 18:

> …we adopted an IT system to manage our business effectively, but it was expensive for our company. We could not manage to use it efficiently as well, so we have started to use MO Excel again (see Annexure 1.22).

The technical knowledge of the staff is another challenge for SMMEs. Even though the employees have training sessions on the system, they still make mistakes with data capturing and general management. As an example, Interviewee 20 said:

> …the IT system that we adopted was not user friendly and staff do not have IT knowledge. Although we had training sessions for our staff, they still made a lot of mistakes with the data. Instead of spending more money on staff and the IT system, we made a decision to use our old system, which is MO Excel (see Annexure 1.20).

FINDING-5: Cost is a deterrent for SMMEs to invest in IT.

FINDING-6: SMMEs do not understand the cost/risk/benefit ratio of IT.

FINDING-7: Risks are not identified and evaluated when acquiring IT systems.

FINDING-8: IT systems can be difficult and complex for use by staff.

FINDING-9: SMMEs do not have the expertise or knowledge to evaluate IT systems.

Interview Question 5: How does the chosen IT system affect the business in terms of competitive advantage?

In this section, 24 per cent of the interviewees who use an advanced level of IT systems stated that IT systems help them in gaining a competitive advantage. The other 76 per cent of the SMMEs interviewed indicated that IT systems only help them for customer data collection, storage and processes as mentioned in Research Question 2 (see Section 1.3). These results show that most of the SMMEs (76 per cent) do not use IT systems effectively and as a result lose the ability to create a competitive advantage for their business.

According to 8 per cent of the interviewees, the chosen IT systems provide effective operations within the SMMEs. This was expressed by some of the interviewees, for example:

> …this IT system helps us to operate more effectively (Interviewee 2) (see Annexure 1.2).

> …the IT system we are using provides us effective operation within the business and accordingly we provide efficient service to our customers (Interviewee 10) (see Annexure 1.10).

Some of the SMMEs interviewed mentioned that the communication between staff affects data processing speed and capacity. Therefore the IT system provides effective and up to date communication/data between staff, which was mentioned by Interviewee 1 as follows:

> …our IT system provides strong communication between staff, which increases the data processing and capacity because the information flows quickly between staff (see Annexure 1.1).

Interviewee 7 also mentioned that:

> …there is an effective and immediate communication between staff because of the IT system that we work with. We do not wait for the information we need; the IT system provides quick data flow as well as up to date data which gives us a chance to give our customers better and immediate service (see Annexure 1.7).

These results show that if IT systems are used effectively, IT can contribute towards efficiency by providing effective operation, efficient communication, and fast information flow. Although IT systems have the potential to be used by business to create a competitive advantage, most SMMEs interviewed (76 per cent) are not interested in gaining a competitive advantage. The lack of interest in creating a competitive advantage may be as a result of the interviewees not knowing what potential the IT systems hold and could contribute to their businesses.

FINDING-10: SMMEs do not use IT to create a competitive advantage.

FINDING-11: SMMEs are not aware of what IT systems can contribute to their businesses.

FINDING-12: IT systems can provide effective operations if it is used effectively.

FINDING-13: IT systems can provide effective communication between staff if it is used effectively.

FINDING-14: IT systems can increase the data processing speed and capacity if it is used effectively.

Interview Question 6: How do you manage your competitiveness against your competitors?

SMMEs stated that they are at a disadvantage when competing against large enterprises because of their lack in capacity to compete against these companies.

> …we are in [a] disadvantageous position amongst large enterprises in terms of competitiveness. We do not have enough budget and knowledge to create a competitive advantage (Interviewee 15) (see Annexure 1.15).

> …for us, IT is not an important tool because we have [a] small working capacity (Interviewee 23) (see Annexure 1.23).

Six of the interviewees stated that their businesses are doing well and making a profit. As a result, they are of the opinion that they do not need to consider creating a competitive advantage. According to Interviewee 9:

> …It is not necessary to compete with stronger competitors as we have already fulfilled our business capacity. Our IT system is enough for our environment (see Annexure 1.9).

Many (19) of the SMMEs do not consider using IT for a competitive advantage. They believe that low level IT systems are sufficient for their businesses and it is not necessary to spend money to adopt new technologies to create a competitive advantage, as stated by Interviewee 16:

> …we are a small company with three employees. Basically we are very weak in comparison with larger companies. We have regular customers and they are keeping us busy so we do not really look for new customers or compete to get new customers. Our marketing strategy is by word of mouth, as long as we keep our regular customers happy, they bring more customers (see Annexure 1.16).

Some respondents indicated that competition is good for their business as it eliminates ineffective and unproductive SMMEs from the industry or at least force them to reconsider their practices. Those managers who perceive the emergence of competition as an opportunity have a tendency to believe that they are in a good position in their sector.

> …matter of the fact that I believe competitive advantage provides significant value to our customers, because it forces our business to keep up in the sector by adding value to our services (Interviewee 7) (see Annexure 1.7).

Furthermore, Interviewee 10 mentioned that:

> …competitive advantage improves the dynamic structure of markets, hence eliminating poor and ineffective enterprises in the market (see Annexure 1.10).

The findings show that most of SMMEs are not considering IT as a tool that can be used to create a competitive advantage.

FINDING-15: Most SMMEs do not consider creating a competitive advantage for their businesses.

FINDING-16: IT is not considered as a tool that contributes towards a competitive advantage.

FINDING-17: SMMES find IT an unnecessary tool to invest in for creating a competitive advantage.

FINDING-18: SMMEs believe that they are too small and their capacity is too low to be competitive in their industry.

> ***Sub-Question 1.2:*** *How do Turkish SMMEs manage the adoption of information technology/innovation in their businesses?*

The innovation decision process is a mental process which owners or top management go through. The first stage is to gather knowledge about innovation, the attitudes toward the innovation, and making decisions whether to adopt or reject new technology. Most of the interviewees indicated resistance to the adoption of new technologies when the relevant interview questions were asked.

Interview Question 7: Would you consider adopting new technology/innovation?

Most of the interviewees (88 per cent) stated that they are not considering implementing new technologies. Only 12 per cent of the interviewees are considering adopting new technologies.

> …we are looking for cost effective software that combines our data collection, storage and process[es] with an accounting system (Interviewee 3) (see Annexure 1.3).

Interviewee 6 stated that the adoption cost is high but that they are aware of the benefits of the innovation:

> …we are looking for effective software that stores our customer data as well as helps our marketing processes. We found few [sic] software for that purpose but they are expensive so we extend our adoption time for a later stage (see Annexure 1.6).

Interviewee 4 is in agreement with Interviewee 6:

> …yes, although adoption cost is high, maybe at a later stage will we consider adopting [a] broader and efficient system which includes all the business processes… (see Annexure 1.4).

Of interest is the fact that so many SMMEs do not consider IT as a possible tool to create a competitive advantage. A follow up question was then asked to determine the reasons behind their stance.

Interview Question 8: Why are you not considering the adoption of new technology/ innovation?

As mentioned above, 88 per cent of the interviewees have rejected adoption of innovation. Most of the interviewees think that the IT system they currently use (MO Excel) is sufficient for their business. For example, Interviewee 11 stated the following:

> Because we do not need new IT systems; MO Excel works for our business purposes (see Annexure 1.11).

Interviewee 22 is in agreement:

> …we have the system we need and adoption costs are high. We believe that there is no benefit for us to adopt new technology or innovation (see Annexure 1.22).

The other interviewees (80 per cent) agree with the statements of Interviewees 11 and 22 in so far as the adoption or the non-adoption of new technology or innovation goes.

When I started with the business 8 years ago, I have planned to expand my business bigger than now, but it didn't happen. I started with one employee and still have one. So about competing with others, we are micro-sized enterprises and getting enough customers for our business to run. I do not see the point to change/expand the business while I get enough from it. Change is always risky (Interviewee 17) (see Annexure 1.17).

Some interviewees view the risks involved when adopting new technology or innovations as too high:

…the change is risky while our current IT system (MO Excel) provides us everything we need. It is very expensive to adopt a new technology and employ qualified employees to use the complex IT systems (Interviewee 23) (see Annexure 1.23).

Interviewee 23 is supported by Interviewee 25 in that:

…our IT system (MO Excel) works perfectly fine for us, so why [do] we need to change it? Change is always risky and we do not bother to take risks as we have [a] smooth running business at the moment (Annexure 1.25).

All the interviewees emphasised the cost factor. New technologies and innovation are seen as too expensive for their business.

FINDING-19: There is a resistance to change within SMMEs.

FINDING-20: SMMEs do not consider adopting new technology or innovation.

FINDING-21: Innovation adoption cost is too high for SMMEs.

Interview Question 9: When you consider adopting technology/innovation, where do you get your information?

Consulting firms are mostly used to get information from when considering adopting new technologies and innovations. Eighty four (84) per cent of the respondents agree that consulting firms are helpful when innovation is considered.

...we use [a] national consulting company for our innovation purposes. They have more knowledge about Turkey than international companies. It is very important for us to know [the] local market so we can act accordingly (Interviewee 2) (see Annexure 1.2).

The other interviewees also agree that if they consider innovation, consulting companies are the channel they will use. For example:

If we consider innovation, we would choose international and national companies where we can compare the technologies (Interviewee 9) (see Annexure 1.9).

Interviewee 18 mentioned that:

> …the consulting companies are [the] best option when innovation is considered (see Annexure 1.18).

Sixteen (16) per cent of the respondents named universities, license agreements, and Research and Development (R&D) companies as important resources:

> …R&D companies, universities, national and international consulting companies, and licence agreement[s] are helpful when we consider innovation (Interviewee 1) (see Annexure 1.1).

FINDING-22: When considering the adoption of new technology and innovation, SMMEs prefer to get information on new technologies and innovation from consulting companies.

4.3.1.2 Summary of Interview Guide — Part 1

The first part of the Interview Guide answered **Research Question 1:** *How do Turkish SMMEs manage their information technology to gain a competitive advantage?*

Turkish SMMEs use IT software products on a low level, meaning that most of them (19) only use MO Excel although there are free IT software products available for them to integrate various business processes. This result leads to the conclusion that SMMEs do not use IT effectively.

SMMEs have little consideration for investing in IT, as mentioned during the interviews, for example: investing in IT is costly; IT is very complex for staff to use; and SMMEs do not have the knowledge and expertise in IT. These findings lead to the conclusion that SMMEs are not aware of the cost/risk/benefit ratio of IT as well as the contribution of IT to their businesses. SMMEs therefore do not consider IT as a tool that contributes towards a competitive advantage and they believe that they are too small and their capacity is too low to be competitive in their industry. As a result, there is a resistance to change and to adopt new technologies within Turkish SMMEs.

4.3.1.3 Interview Guide—Part 2

The second part of the interview process was done to answer **Research Question 2**, which explores the factors influencing SMMEs when the adoption of new technologies is considered and determining the challenges for adopting technology in SMMEs. Part 2 also explores what technologies are needed for Turkish SMMEs to be able to create a competitive advantage.

Research Question 2: What are the challenges Turkish SMMEs have to face that influence their adoption or non-adoption of new technology innovations?

> *Sub-question 2.1: What are the factors influencing the adoption of new technology in Turkish SMMEs?*

Interview Question 10: What difficulties did you face when you considered adopting a new IT system?

Slow adoption of IT is one of the most commonly cited practices of SMMEs. Seventy six (76) per cent of the respondents view IT adoption as unnecessary due to a lack of technical knowledge in the selection of appropriate technology. SMMEs face several challenges, including low usage, due the lack of technical knowledge and higher maintenance costs of IT systems. Interviewees 18 and 20 indicated that they have adopted IT systems in their business but they could not manage it effectively due to high maintenance cost and low knowledge level of the staff.

> …we adopted an IT system that can integrate our business processes together. It was efficient in terms of integration, but the cost of the maintenance was very high and more importantly, the staff had to have training but they did not perform well with the training because the IT system is complex and our staff have [a] lack of technical knowledge. We made [the] decision to change back to our old system using MO Excel (Interviewee 18) (see Annexure 1.18).

Many of the SMMEs are slow to adopt technological changes taking place around them. One of the reasons for the slow responsiveness is the lack of financial resources since new technologies are expensive and may not be appropriate for small production, as mentioned by many of the interviewees. For example:

> …we are [a] small enterprise with not many business processes and we do not have enough budget for IT investment. We believe that we do not need to have an advanced level [of] technology as we only use the IT system for managing our customer data (Interviewee 23) (see Annexure 1.23).

> …we do not need advanced level technology because we are a small company and we do not have many business processes to work with. That is why we work with MO Excel and it is enough to manage our data and it does not cost us… (Interviewee 5) (see Annexure 1.5).

Interviewee 25 mentioned that they appreciate MO Excel due to their size:

> …MO Excel keeps our data management effectively. Due to our size, we do not think to adopt new technologies (see Annexure 1.25).

Financial difficulties are endemic for most SMMEs. Most of the SMMEs' owners have limited knowledge of finance and accounting. For example:

> …as an owner of the business, I do not have enough knowledge of finance and accounting so we have an accountant who manages our financial condition (Interviewee 11) (see Annexure 1.11).

> …as an owner, I am not interested in technology, because I think that adopting technology is very costly. I do not attempt to give any consideration about it (Interviewee 19) (see Annexure 1.19).

As a manager of a business, Interviewee 4 stated that:

> …the owner appreciates what he gets from the business. He has [a] lack of knowledge about technology, therefore he is not thinking broadly. He only thinks that we do not need new technologies because they cost fortunes (see Annexure 1.4).

As owner of a business, Interviewee 11 stated that:

> …I did search for new [a] IT system for my business. There are [a] few systems that I was interested to adopt but they cost a lot. So I do not think it is necessary for such a small business. Our cost is our major priority, so we have to keep it low (see Annexure 1.11).

There are some institutions that pay subsidies to SMMEs to assist them in the adoption of innovation, but it is pointed out by SMMEs that SMME owners in Turkey are unaware of the possibilities of obtaining loans from various public financial institutions that target SMMEs. Seventy (70) per cent of the interviewees are unaware of the financial assistance available to them:

> …I never heard of any institutes that provide subsidies for innovation and technology… (Interviewee 3) (see Annexure 1.3).

> …we do not know where to look for information about any financial loans. We only know that the banks provide loans with high interest rates (Interviewee 9) (see Annexure 1.9).

Two of the interviewees stated that these subsidies are impossible to get.

> …I heard that there is [sic] subsidies available for SMMEs which is provided by KOSGEB. Therefore I did try to apply for few times but they said they already fulfilled their capacity. So I do not think it is possible to get money out of government… (Interviewee 14) (see Annexure 1.14).

> …I did not know that government provides subsidies for SMMEs…. My friend told me about it, but he also mentioned that it is difficult to get this subsidies. So I never tried to apply… (Interviewee 6) (see Annexure 1.6).

Some SMMEs do not believe they have the capability of getting subsidies:

> …we are very small enterprises so we do not believe we can apply for a subsidy according to adopt innovation. We also heard that it is very difficult to apply for this kind of loan. That is why we never think of considering applying (Interviewee 24) (see Annexure 1.24).

The results show that there is a general lack of knowledge within SMMEs on finance and benefits that new technology and innovation offer. Managerial ignorance of IT and risk aversion are also hindering the adoption process within SMMEs. As mentioned by Interviewee 15:

> The owner is convinced that technology is not needed for small businesses, because our business process is very simple and it only includes data management… (see Annexure 1.15).

This is supported by Interviewee 16:

> …IT systems just cost money in our business area because we do not need complex and fancy technologies to operate our business. Only need [a] simple database software product for our customer data (see Annexure 1.16).

One of the other reasons for poor IT adoption is the lack of information on new technologies. Interviewee 22 stated that:

> …we do not know where to look for information about IT adoption and cannot find relevant options of different IT systems that we can consider to adopt… (see Annexure 1.22).

Furthermore, Interviewee 5 mentioned that:

> …we do not have enough knowledge of technology and consulting companies charge a lot of money (see Annexure 1.5).

Three managers, of which Interviewee 12 is one, mentioned that:

> …owners are not being able to distinguish between quality data and useless information (see Annexure 1.12).

This statement is supported by Interviewee 15:

> ...the owner does not know if the collected data is quality data or useless information… (see Annexure 1.15).

One characteristic most SMMEs have in common is that they are owner managed. Sixty eight (68) per cent of interviewees are business owners, meaning that they are the centre of the business and make the decisions. The owner's attitude towards technology has an

impact on the adoption of IT in SMMEs. Most of the managers state that the owners do not have the capability or knowledge for effective IT usage and selection. For example:

> …owner's capability and knowledge prevent effective IT usage and evaluation… (Interviewee 22) (see Annexure 1.22).

> …owner's motivation, attitude and ability dominate business' knowledge which means that if the owner does not build an IT acceptance culture in the business then it will be difficult for the staff to adopt IT systems (Interviewee 13) (see Annexure 1.13).

Furthermore, Interviewee 15 stated that:

> …because the owner has [a] lack of knowledge about IT systems, that makes it difficult for them to make confident decisions about adoption (see Annexure 1.15).

Interviewee 22 stated that:

> …the owners make the last decision, so if they do not have any knowledge of IT adoption then it is useless to expect IT adoption decisions from them (see Annexure 1.22).

Seventy six (76) per cent of the respondents do not know where to search for and obtain information. The available information is general, insufficient and includes externally produced sector reports. SMMEs are not able to distinguish between high quality and low quality information; they focus on secondary data and make no or little attempt to create or identify unique information from their own databases to create a competitive advantage for the SMMEs.

FINDING-23: A culture to resist the adoption of new technology exists within SMMEs.

FINDING-24: SMMEs find the high cost of new technology and innovation a barrier in the adoption of new technology.

FINDING-25: Managerial ignorance of IT and narrow-mindedness of owners in SMMEs hinder the adoption of technology in the business.

FINDING-26: SMMEs do not have evaluation tools available to them when considering the adoption of new technology.

FINDING-27: SMMEs are not aware of government and other institutional funding available to them.

FINDING-28: There is a lack of appropriate resources within SMMEs to obtain information.

FINDING-29: SMMEs have a lack of resources to explore opportunities for IT adoption.

Interview Question 11: What do you think about innovation?

When asked about SMMEs' attitude towards innovation, 76 per cent of the SMMEs indicated that they do not consider new technology or innovation. Interviewee 11 stated:

> ...new technology or innovation costs a lot of money plus we do not have qualified staff to operate it. Therefore, we are not interested to spend money on technology and the staff (see Annexure 1.11).

Only 24 per cent of the interviewees view innovation as important to their businesses. Although SMMEs do not consider innovation as an important tool for their businesses, they did identify the barriers they are facing when considering adoption of new technology. Barriers include the current economic climate, the high cost of new technology and processes, and the owner's profile of leadership and risk taking.

> …the Turkish economy is very unstable and it is risky to invest a big amount of money on innovative approaches (Interviewee 23) (see Annexure 1.23).

> We are [a] small enterprise; we cannot afford to invest in innovation which we believe that it has high cost in operation and maintenance (Interviewee 19) (see Annexure 1.19).

> …adopting innovative approaches can be very costly if the manager/owner has limited knowledge (Interviewee 13) (see Annexure 1.13).

According to interviewees, the education levels of 60 per cent of the interviewees are high school, 32 per cent undergraduate, 4 per cent bachelor's degree and 4 per cent Master's degree, as shown in Table 4.3. The results show that the most important challenge in management is the lack of skills (as mentioned by Interviewee 1). Sixty eight (68) per cent of the interviewees are SMME business owners and 60 per cent of these business owners' education level is high school. The management employed by the owners do not have a higher educational background.

Furthermore, it was mentioned by the interviewees (managers) that:

> …the owners do not consider taking risks by adopting innovation because they have [a] lack of knowledge and they think it is time consuming (Interviewee 12) (see Annexure 1.12).

> …when innovation was concerned the owner stated that, "…to adopt innovation we need qualified staff, time, and more importantly, budget for it. As a small business we do not have these requirements." The decision was made, so he is not interested to adopt any innovation (Interviewee 15) (see Annexure 1.15).

Interviewee 9 mentioned that:

> …I must admit that I do not have knowledge about innovation; I only heard that it does cost a lot of money, time and it is not suitable for small businesses. So I never paid attention to innovation (see Annexure 1.9).

FINDING-30: The cost of adopting new technology and innovation is too high for SMMEs.

FINDING-31: There is a perceived lack of funding to assist SMMEs to adopt new technology.

FINDING-32: There is lack of knowledge about new technology and innovation and the benefits it can bring to SMMEs.

FINDING-33: Owners of SMMEs are of the opinion that the evaluation of new technology and innovation is time consuming and a waste of time.

During the interview process, the question of the importance and use of social media was asked in order to determine if SMMEs are considering these tools and if they realise that these tools are indeed innovative instruments for them. Two interview questions were asked in order to explore the SMMEs' understanding of social media and how it could create a competitive advantage for SMMEs.

Interview Question 12: Does your enterprise have an active website?

Sixty eight (68) per cent, i.e. 17 interviewees stated that they do not have an active website, although two (2) of the interviewees are planning to build a website soon. Only 32 per cent, i.e. eight (8) of the interviewees stated that they have an active website. They believe that the website results in good reputation and marketing for them:

> …we have been using our website actively for [a] few years. Our website provides quick communication between us and our customers by providing them a live chat with one of our consultants (Interviewee 2) (see Annexure 1.2).

Two of the interviewees stated that they are in the process of developing a website and social media marketing processes for their businesses.

> …we are planning to develop a website and use our website and social media channels to promote our services (Interviewee 18) (see Annexure 1.18).

> …we are in development of our website and it will be integrated with social media as well (Interviewee 20) (see Annexure 1.20).

Interview Question 13: If you do not have a website, how do you manage your marketing?

Sixty eight (68) per cent of the interviewees do not have a website or use social media in their business. They use another cheaper option for their marketing purpose, as Interviewee 22 mentioned:

> …we contact with our customers via phone calls if it is necessary and send them SMS if we do promotions. The social media and website operations are complex to use and costly to maintain. Bundles are more effective as we get immediate responses from our customers (see Annexure 1.22).

Three of the interviewees mentioned that they used social media for their marketing at some stage, but they do not believe in the power of social media.

> …we tried to use [a] few social media channels but it was not necessarily effective for our marketing and takes so much effort to operate it. So we decided to use only SMS bundles that we get monthly (Interviewee 9) (see Annexure 1.9).

This is supported by Interviewee 6:

> Social media is a very popular tool for marketing, and it takes a lot of time plus effort. We decided to not use social media because there is no immediate response… (see Annexure 1.6).

The online competitive environment is constantly initiating new needs, pushing companies to have effective websites, adding new features to attract customers and facilitate the online experience, making it quick and efficient. Sixty eight (68) per cent of the SMMEs do not use websites or social media for their marketing and they believe that SMS and phone call bundles are much cheaper than operating a website and are more efficient as they get immediate responses.

FINDING-34: SMMEs do not see the value of websites for their business.

FINDING-35: SMMEs do not use social media for marketing purposes.

FINDING-36: According to some SMMEs, operating a website takes too much effort.

FINDING-37: Social media is not providing immediate responses.

As mentioned by most of the interviewees (84 per cent), SMMEs use mobile technology for their marketing processes instead of the Internet or social media tools. The reason is that mobile technology provides cheaper service and most importantly, quick responses.

Interviewee 14 explained how mobile technology works in Turkey:

> …we get phone call bundles (landline) from Turkish Telecommunication Offices every month. Bundles become very [sic] cheaper, so we have limitless minutes per month to interact with our customers. SMS bundles are used for attracting new customers as we advertise via SMS's. We can send hundreds [of] SMS's in a minute. If the customer responds to our SMS's, we call them and explain how our services work. We made a decision to not use social media instead, because it needs a lot of updates and effort. Therefore, it is more expensive to operate it (see Annexure 1.14).

FINDING-38: SMMEs perceive SMS bundles to be cheaper than operating a website.

FINDING-39: SMS's provide immediate responses from clients or potential clients.

FINDING-40: SMMEs use mobile technology (SMS's and phone calls) for marketing purposes.

FINDING-41: Social media and websites are seen to be complicated to manage and do not have the benefits that other media offers.

4.3.1.4 Summary of Interview Guide—Part 2

The second part of the Interview Guide answered **Research Question 2:** *What are the challenges Turkish SMMEs have to face that influence their adoption or non-adoption of new technology innovations?*

Only a few SMMEs prefer to obtain information on new technologies and innovation from consulting companies when they are considering adopting new technology and innovation; others have a culture to resist adoption because they find the high cost of adoption a barrier. Especially the owners are not aware of government and other institutional funding available to them—this is caused by managerial ignorance of IT and narrow-mindedness in SMMEs.

Finally, SMMEs do not see the value of social marketing and websites for their business. They are of the opinion that operating a website and social media takes too much effort and money. Accordingly, social media and websites are seen to be too complicated to manage and do not have the benefits that other media offers.

4.4 Summary of findings

In this research, 13 interview questions were asked to 25 interviewees. As a result, 41 findings came to the fore. These findings are summarised in Table 4.7.

Table 4.7: Summary of the findings

FINDINGS
Finding-1: There is a low level of IT software product usage by SMME's (insurance broker agencies).
Finding-2: SMMEs are often not aware of free IT software products available on the Internet.
Finding-3: SMME's do not use the potential that IT can offer for the business.
Finding-4: SMMEs do not integrate business processes with their IT systems.
Finding-5: Cost is a deterrent for SMMEs to invest in IT.
Finding-6: SMMEs do not understand the cost/risk/benefit ratio of IT.
Finding-7: Risks are not identified and evaluated when acquiring IT systems.
Finding-8: IT systems can be difficult and complex for use by staff.
Finding-9: SMMEs do not have the expertise or knowledge to evaluate IT systems.
Finding-10: SMMEs do not use IT to create a competitive advantage.
Finding-11: SMMEs are not aware of what IT systems can contribute to their businesses.
Finding-12: IT systems can provide effective operations if it is used effectively.
Finding-13: IT systems can provide effective communication between staff if it is used effectively.
Finding-14: IT systems can increase the data processing speed and capacity if it is used effectively.
Finding-15: Most SMMEs do not consider creating a competitive advantage for their businesses.
Finding-16: IT is not considered as a tool that contributes towards a competitive advantage.
Finding-17: SMMEs find IT an unnecessary tool to invest in for creating a competitive advantage.
Finding-18: SMMEs believe that they are too small and their capacity is too low to be competitive in their industry.
Finding-19: There is a resistance to change within SMMEs.
Finding-20: SMMEs do not consider adopting new technologies or innovation.
Finding-21: Innovation adoption cost is too high for SMMEs.
Finding-22: When considering the adoption of new technology and innovation, SMMEs prefer to get information on new technologies and innovation from consulting companies.
Finding-23: A culture to resist the adoption of new technology exists within SMMEs.
Finding-24: SMMEs find the high cost of new technology and innovation a barrier in the adoption of new technology.
Finding-25: Managerial ignorance of IT and narrow-mindedness of owners in SMMEs hinder the adoption of technology in the business.
Finding-26: SMMEs do not have evaluation tools available to them when considering the adoption of new technology.
Finding-27: SMMEs are not aware of government and other institutional funding available to them.
Finding-28: There is a lack of appropriate resources within SMMEs to obtain information.
Finding-29: SMMEs have a lack of resources to explore opportunities for IT adoption.

FINDINGS
Finding-30: The cost of adopting new technology and innovation is too high for SMMEs.
Finding-31: There is a perceived lack of funding to assist SMMEs to adopt new technology.
Finding-32: There is lack of knowledge about new technology and innovation and the benefits it can bring to SMMEs.
Finding-33: Owners of SMMEs are of the opinion that the evaluation of new technology and innovation is time consuming and a waste of time.
Finding-34: SMMEs do not see the value of websites for their business.
Finding-35: SMMEs do not use social media for marketing purposes.
Finding-36: According to some SMMEs, operating a website takes too much effort.
Finding-37: Social media is not providing immediate responses.
Finding-38: SMMEs perceive SMS bundles to be cheaper than operating a website.
Finding-39: SMS's provide immediate responses from clients or potential clients.
Finding-40: SMMEs use mobile technology (SMS's and phone calls) for marketing purposes.
Finding-41: Social media and websites are seen to be complicated to manage and do not have the benefits that other media offers.

These findings are discussed according to the categories developed later in this chapter (under Section 4.6).

4.5 Categories and themes

Thirty eight keywords were identified from the collected data and these keywords were summarised into four main categories (Table 4.8), namely Information Technology, Competitive Advantage, Innovation and Marketing.

Table 4.8: Categories and Themes

Categories	Theme 1	Theme 2	Theme 3	Theme 4	Theme 5
Information Technology	IT usage	IT implementation fields	IT evaluation	Difficulties of IT adoption	Contribution / impact of IT adoption
Competitive Advantage	Contribution to competitive advantage	Attitude towards competitive advantage			
Innovation	Innovation resources	Innovation barriers	Innovation adoption		
Marketing	Website usage	Mobile / SMS			

Each theme refers to an individual interview question (Table 4.9) to answer the research questions (Table 4.10). The findings will be discussed in next section.

Table 4.9: Themes on responses from Interviewees

Theme	Interview Question
IT usage	**1.** Which IT systems are you using in your enterprise? **2.** What is the usage level of your IT systems that you use in your enterprise?
IT implementation fields / Contribution and impact of IT adoption	**3.** What are the implementation areas of the chosen IT systems?
IT evaluation	**4.** How did you evaluate the IT system before you adopted it?
Difficulties of IT adoption	**10.** What difficulties did you face when you considered adopting a new IT system?
Contribution to competitive advantage	**5.** How does the chosen IT system affect the business in terms of competitive advantage?
Attitude towards competitive advantage	**6.** How do you manage your competitiveness against your competitors?
Innovation resources	**9.** When you consider adopting technology/innovation, where do you get your information?
Innovation barriers	**8.** Why are you not considering the adoption of new technology/ innovation?
Innovation adoption	**11.** What do you think about innovation? **7.** Would you consider adopting new technology/innovation?
Website usage	**12.** Does your enterprise have an active website?
Mobile / SMS	**13.** If you do not have a website, how do you manage your marketing?

Table 4.10: Research questions, research sub-questions and themes

Research Question	Research Sub-question	Themes
RQ 1. How do Turkish SMMEs manage their information technology to gain a competitive advantage?	*RSQ 1.1 How do Turkish SMMEs evaluate information technology that can be used to create a competitive advantage in SMMEs?*	• IT usage • IT implementation fields • IT Evaluation • Website usage • Mobile/SMS • Contribution of competitive advantage • Attitude towards competitive advantage
	RSQ 1.2 How do Turkish SMMEs manage the adoption of information technology in their businesses?	• Contribution / Impact of IT • IT Adoption • Innovation resources
RQ 2. What are the challenges Turkish SMMEs have to face that influence their adoption or non-adoption of new technology innovations?	*RSQ 2.1 What are the factors influencing the adoption of new technology in Turkish SMMEs?*	• Difficulties of IT adoption • Innovation barriers

4.6 Categories and findings

In this section, categories are explained in detail according to the findings.

4.6.1 Information technology in SMMEs

According to the answers provided by SMMEs, there is a low level of IT software product usage by SMMEs because IT is not viewed as an important tool to create a competitive advantage. Although IT can offer integration for business processes when it is used effectively, most SMMEs do not use IT effectively.

When IT adoption is considered, there is a culture to resist the adoption of new technology within SMMEs. Most of the owners have managerial ignorance of IT and some narrow-mindedness is detected. SMMEs do not have the expertise or knowledge to evaluate IT systems and they do not have evaluation tools available to them when considering the adoption of new technology. Also, they do not understand the cost/risk/benefits ratio of adopting IT because risks are not identified and evaluated when acquiring IT systems. Although some of the SMMEs prefer to obtain information on new technologies and innovation from consulting companies when considering the adoption of new technology and innovation, there is still a lack of appropriate resources available.

The most common barrier for SMMEs wanting to use IT in their businesses is the high cost of IT adoption. SMMEs are finding the high cost of new technology and innovation as a barrier in the adoption of new technology. Although there are free IT software products available for SMMEs, and funding is provided by the government and other institutions, SMMEs are not aware of these free products and/or funding. SMMEs also believe that the IT systems can be difficult and too complex for use by staff.

In conclusion, the interviewees stated that they do not have the budget and time for investing in IT, because of the reasons indicated above. A common reason for not adopting IT into business is the lack of knowledge of cost/risk/benefit ratios of IT systems.

4.6.2 Competitive advantage in SMMEs

According to the findings, SMMEs do not consider creating a competitive advantage for their businesses through IT. IT is not considered as an important tool in creating competitiveness for SMMEs, although IT systems can provide various benefits for SMMEs, such as effective operations, effective communication between staff, and increased data processing speed and capacity. For the SMMEs in this research, it can be stated that the SMMEs are not aware of what IT systems can contribute to their businesses.

In conclusion, the lack of interest in creating a competitive advantage may be as a result of the interviewees not knowing what potential the IT systems hold and can contribute to their businesses.

4.6.3 Innovation in SMMEs

According to the findings, the most common response on innovation is that there is a resistance to the change that innovation brings to the SMMEs. The fear or resistance to change results in SMMEs not considering adopting new technologies or/and innovation. The perceived changes that innovation and technology bring to SMMEs are not the only reasons for interviewees to resist adoption of IT. The lack of knowledge and the high costs of innovation and technology are also issues that are considered before acquiring new technologies. SMMEs feel that they are too small and their capacity is too low to be competitive in their industry. They are of the opinion that it is unnecessary to spend more money from their budget while they cannot be competitive enough. According to the responses, this may be the result of a lack of knowledge and resources, because most of the interviewees stated that they cannot find any resources and information on opportunities of IT and innovation.

In conclusion, owners of SMMEs are of the opinion that the evaluation of new technology and innovation is time consuming, a waste of time and too costly to implement.

4.6.4 Marketing

Social media and websites are not seen as a marketing tool by interviewees, although social media and websites are very common and useful tools for marketing. Most of the interviewees stated that operating a website takes too much effort and its maintenance cost is high. SMMEs use mobile technologies instead, because they believe it is cheaper than websites and easier than social media management. Furthermore, interviewees stated that with mobile technologies, which include SMS bundles and phone calls, they get immediate responses from clients.

In conclusion, social media and websites are seen as being too complicated to manage and do not have the benefits that other media offers.

4.7 Chapter summary

The purpose of this chapter was to present findings as they developed from data collected from interviews. Data was collected from twenty five interviewees through a semi-structured questionnaire. The questionnaire has two parts: the first part was created to answer

Research Question 1, which consists of the management of IT for a competitive advantage in Turkish SMMEs. The second part of the questionnaire was created to answer Research Question 2, which consists of challenges/factors when considering the adoption of new technology and innovation.

The ten headline findings are as follows:

1- Turkish SMMEs do not use IT effectively to create a competitive advantage.

2- SMMEs are not aware of the contribution and benefits of IT; they therefore stated that they do not have a sufficient budget, resources and information to evaluate and adopt IT.

3- SMMEs do not understand the cost/risk/benefit ratio of IT and risks are not identified and evaluated when acquiring IT systems.

4- SMMEs do not have the expertise or knowledge to evaluate IT systems and it can be difficult and complex for staff to use.

5- Cost is a deterrent for SMMEs to invest in IT and the cost of adopting new technology and innovation is too high for SMMEs.

6- A culture to resist the adoption of new technology exists within SMMEs.

7- There is a lack of appropriate resources within SMMEs to obtain information and a lack of resources to explore opportunities for IT adoption.

8- Owners of SMMEs are of the opinion that the evaluation of new technology and innovation is time consuming and a waste of time.

9- There is lack of knowledge on new technology and innovation and the benefits it can bring to SMMEs.

10- Social media and websites are seen to be complicated to manage and do not have the benefits that other media offers.

The twelve (12) themes developed are:

1- IT usage
2- IT implementation fields
3- IT evaluation
4- Difficulties of IT adoption

5- Contribution/impact of IT adoption

6- Contribution to competitive advantage

7- Attitude towards competitive advantage

8- Innovation resources

9- Innovation barriers

10- Innovation adoption

11- Website usage

12- Mobile / SMS

A total of 41 findings were derived from the interviews. Of these findings, 12 themes were developed.

In Chapter Five, the research questions, themes and findings are discussed according to literature.

5. CHAPTER FIVE: DISCUSSION
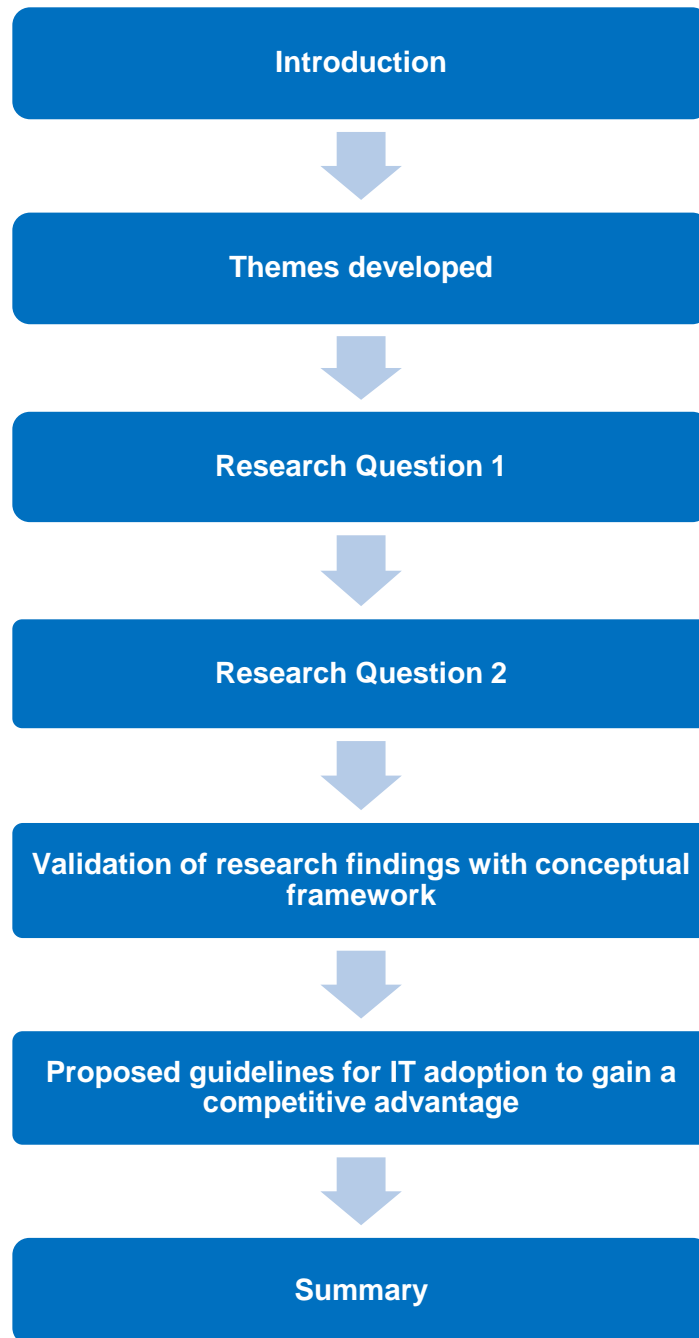
Figure 5.1: Chapter Five layout

5.1 Introduction

In Chapter Five, the findings are discussed based on themes developed in Chapter Four and relevant literature. The first part of Chapter Five presents the twelve emerging themes from the categorisation of the research data. The second part presents the answers to the research questions and the validation of the research findings.

5.1.1 Research problem

In both developed and developing countries, SMMEs play an important role in the economic growth of the country (Ozmen, 2012). Notwithstanding, there are some weaknesses and constraints, especially in the development stage of SMMEs (*Tektaş et al.*, 2012). Some common weaknesses and constraints of SMMEs include the poor usage of technology, insufficient access to finance, low educational levels and lack of capital for IT investments. Turkish SMMEs, as in some other developing countries, are negatively affected by the economic and political environment, technological improvements and competitive environment (Ozmen, 2012).

Ozmen (2012) states that in Turkey, which has one of the fastest growing economies among developing countries, SMMEs provide 77 per cent of the employment whilst only contributing 23 per cent to the economy (GDP), which is lower than in the United Kingdom or South Africa. SMMEs in the United Kingdom contribute 63 per cent to the economy (GDP), with a similar percentage of employment to that in Turkey.

Problem statement: SMMEs in Turkey do not effectively leverage their IT to create a competitive advantage. This leads to low productivity among SMMEs and a low contribution by the SMMEs towards the Turkish economy.

The questions directing the research are:

Research Question 1: How do Turkish SMMEs manage their information technology to gain a competitive advantage?

> *Sub-question 1.1: How do Turkish SMMEs evaluate information technology that can be used to create a competitive advantage in SMMEs?*

> *Sub-question 1.2: How do Turkish SMMEs manage the adoption of information technology in their businesses?*

Research Question 2: What are the challenges Turkish SMMEs have to face that influence their adoption or non-adoption of new technology innovations?

Sub-question 2.1: What are the factors influencing the adoption of new technology in Turkish SMMEs?

Sub-question 2.2: What technologies do SMMEs need in order to create a competitive advantage in Turkey?

5.2 Themes developed

Twelve (12) themes were developed from four categories, namely (a) Information Technology, (b) Competitive Advantage, (c) Innovation and (d) Marketing. Each theme refers to an individual interview question (Table 5.1) to answer the research questions and sub-questions.

Table 5.1: Research questions, research sub-questions and themes

Research Question	Research Sub-question	Themes
RQ 1. How do Turkish SMMEs manage their information technology to gain a competitive advantage?	*RSQ 1.1 How do Turkish SMMEs evaluate information technology that can be used to create a competitive advantage in SMMEs?*	• IT usage • IT implementation fields • IT Evaluation • Website usage • Mobile/SMS • Contribution to competitive advantage • Attitude towards competitive advantage
	RSQ 1.2 How do Turkish SMMEs manage the adoption of information technology in their businesses?	• Contribution / Impact of IT • IT Adoption • Innovation Resources
RQ 2. What are the challenges Turkish SMMEs have to face that influence their adoption or non-adoption of new technology innovations?	*RSQ 2.1 What are the factors influencing the adoption of new technology in Turkish SMMEs?*	• Difficulties of IT adoption • Innovation barriers

5.2.1 Research Question 1

How do Turkish SMMEs manage their information technology to gain a competitive advantage?

> *Research sub-question 1.1: How do Turkish SMMEs evaluate information technology that can be used to create a competitive advantage in SMMEs?*

5.2.1.1 IT usage

Olumoye (2013) and Antonelli *et al.* (2014) state that the objective of IT usage in an organisation is to provide information for more effective planning, forecasting, monitoring and controlling for managers and stakeholders. IT usage levels indicate the IT capability that businesses have. The interview respondents reflected that IT usage is low in Turkish SMMEs.

> …we are using very basic levels of IT systems, which is MO Excel. It helps us to manage our customer data. We believe that we, as a small business, do not need an advanced level IT system (Interviewee 16) (see Annexure 1.16).

Interviewee 16's comment is resonated by Interviewee 11, who stated that:

> …we have basic processes in our business such as managing customer data. We use IT systems only when we have new customers or when current customers claim insurance and we use MO Excel for these purposes (Interviewee 11) (see Annexure 1.11).

Tan (2010) separates IT usage levels into four categories for SMMEs to adopt into their businesses, namely:

a) Basic communication, which includes minimum IT capability that a business should have.

b) Basic IT, which includes computers (PCs) that accommodate word processing functionality, accounting and other business practices.

c) Advanced communication, which provides technologies where people and networks communicate with one another.

d) Advanced IT, which includes advanced packaged suites that consolidate a range of business applications for a SMMEs' core business processes.

Nineteen (19) respondents are using only MO Excel, which indicates a basic level of IT for their business processes. It seems that the SMMEs in this research fall into the categories of a) basic communication which includes a minimum IT capability and b) basic IT which includes some computer and word processing functionality. From the findings it is clear that IT usage is still low for the interviewed SMMEs. The research supports the views of Tan (2010) and Aydın (2012) that despite the apparent benefits of IT, SMMEs do not utilise or invest in available IT to create a competitive advantage. Most of the SMMEs adopt a basic level of IT, while advanced IT adoption is significantly low within Turkish SMMEs (Aydin, 2012).

5.2.1.2 IT implementation fields

In the global competitive environment, SMMEs use IT for different purposes and expectations. IT provides certainty in decision making processes and effective evaluation in strategic opportunities (Gules *et al.,* 2003). Although Turkish SMMEs are not using IT to gain a competitive advantage, they do use some level of IT in their businesses.

Organisations use systems which have different functions and processes. It is important to manage the organisations effectively by integrating these functions and processes with IT for managers and stakeholders in order to make efficient strategic decisions (Behan & Holmes, 1990; Cebi, 1997; Celik *et al.* 2014). Most of the interviewees (19) use IT systems only to manage their customer data management.

For example:

> …we use MO Excel in order to manage our customer data (Interviewee 5) (see Annexure 1.5).

> …we use MO Excel to handle our customer data only (Interviewee 12) (see Annexure 1.12).

SMMEs do not use the potential IT can offer to the business and do not integrate business processes with their IT systems.

5.2.1.3 IT evaluation

Ndekwa (2014) states that evaluation and adoption of new technologies is essential to the survival and growth of SMMEs. Palvalin, Lonnqvist and Vuolle (2013) indicate that the failure to evaluate and the lack of proper understanding of the implications of adopting a new technology on the business in entirety, may lead to the adoption of inappropriate technology or the non-adoption of potential new technology with advantages for business growth. The majority of respondents in this research do not want to invest in IT and do not understand the potential positive outcomes such investments offer. They also do not see how IT can reduce risk in their businesses. For these SMMEs the cost of IT is too high.

The success of IT investments is dependent on the correct performance measures which help to measure the outcome of the IT investments. There is a lack of awareness by Turkish SMMEs on IT investment outcome and the risks involved. SMMEs do not understand the cost/risk/benefit ratio of IT; as a result, risks are not identified and evaluated when acquiring IT systems.

5.2.1.4 Website usage

According to Yang *et al.* (2012), most SMMEs do not use websites as a tool for information publishing. The Internet and e-marketing provide advantages for SMMEs, including low cost of marketing, effectiveness, and reaching a wide customer range (Yang *et al.* 2012). According to the research of SMB Digital Scape, only 37 per cent of Turkish SMMEs have websites (Karahasan, 2013).

The research of Karahasan (2013) and Yang *et al.* (2012) is supported by the interviewees of this study. Sixty eight per cent (17) of the interviewees indicated that they do not have an active website, although two (2) of the interviewees are planning to build a website soon. Only 32 per cent, i.e. eight (8) of the interviewees stated that they have an active website. In the cases where the SMMEs use websites, the SMMEs reported good results in building a quality reputation and the websites server as good marketing for them.

Most of the interviewees do not view social media and websites as a marketing tool, although social media and websites are common and useful tools for marketing. Most of the interviewees stated that operating a website takes too much effort and the maintenance cost is too high. SMMEs use mobile technologies instead, because they believe it is cheaper than websites and easier than social media management. Furthermore, interviewees stated that with mobile technologies, which include SMS bundles and phone calls, they get immediate responses from clients.

In conclusion, social media and websites are seen as being too complicated to manage and do not have the benefits that other media offers.

5.2.1.5 Mobile / SMS

Sixty eight (68) per cent of the interviewees do not have a website or use social media in their business. They are using other less expensive options for marketing purposes, as indicated by Interviewee 22:

> …we contact with our customers via phone calls if it is necessary and send them SMS if we do promotions. The social media and website operations are complex to use and costly to maintain. Bundles are more effective as we get immediate response from our customers (see Annexure 1.22).

Three of the interviewees used social media for their marketing at some stage, but they do not believe in the power of social media.

The online competitive environment is constantly initiating new needs, pushing companies to have effective websites, adding new features to attract customers and facilitating the online experience, making it a quick and efficient. The interviewed SMMEs generally do not use websites or social media for their marketing, thus forfeiting an opportunity to gain a competitive advantage that could propel their businesses in a profitable manner. Cost saving is a high priority for the SMMEs and they would rather engage in what they believe to be cheaper options, such as short message services (SMS) and phone call bundles.

5.2.1.6 Contribution to competitive advantage

Competitive advantage depends on the value an organisation is able to create. Not all organisations have the relevant resources to create and sustain their competitive advantage, but those with the resources do have the ability to contribute to an effective performance if the potential of IT is realised (Barney & Clark, 2007; Breznik, 2012).

Many (19) of the SMMEs do not consider using IT for a competitive advantage. They believe that low level IT systems are sufficient for their businesses and it is therefore not necessary to spend money to adopt new technologies to create a competitive advantage.

Modimogale (2009) states that the competitiveness of SMMEs depends on the ways in which IT is used to support business processes. Furthermore, IT will help SMMEs to gain a competitive advantage if it is linked to the business processes instead of only to implementations. This statement is supported by the majority of interviewees as they do not integrate business processes through IT and only use a basic level of IT to assist them in managing their customer data.

In conclusion, SMMEs do not consider creating a competitive advantage for their businesses through IT because IT is not considered as an important tool to create competitiveness for SMMEs. For this research it can be stated that the SMMEs involved are not aware of what IT systems can contribute to their businesses. The lack of interest in creating a competitive advantage may be as a result of the interviewees not knowing what potential the IT systems hold and can contribute to their businesses.

5.2.1.7 Attitude towards competitive advantage

The nature of competition is changing and organisations need to understand the impact of IT and how it can create a sustainable competitive advantage (Drucker, 2001; Hemmatfar, Salehi & Bayat, 2010). According to Zafar *et al.* (2014), competitive advantage can be gained through the adoption of technological change.

There is resistance to change in organisational culture in Turkish SMMEs. Some of the interviewees stated that they are at a disadvantage when competing against large enterprises because of their lack in capacity to compete. It is therefore ironic that the SMMEs are complaining about "big business" on the one hand, but on the other hand they do not want to, or are resistant to change in order to adopt technology available to them to create a competitive advantage so that they can compete against the bigger companies.

There is some good news in that six of the interviewees' businesses are doing well and making a profit. As a result, these six interviewees are of the opinion that they do not need to consider creating a competitive advantage. With a changing environment and the overconfidence of such statements, the future for these SMMEs might change overnight.

> **Research sub-question 1.2:** *How do Turkish SMMEs manage the adoption of information technology/innovation in their businesses?*

5.2.1.8 Contribution/impact of IT adoption

IT is pointed out as one of the most critical and important factors for an organisation to increase its efficiency (Henderson & Venkatraman, 1993), competitiveness (Kalkan *et al.*, 2011; Peppard, 2010), and innovation (Kalkan *et al.*, 2011; Luftman, 2003). According to Antonelli *et al.* (2014) and Olumoye (2013), the objective of IT usage in an organisation is to provide information for more effective planning, forecasting, monitoring, and controlling for managers and stakeholders.

Dulkadir and Akkoyun (2013) state that IT impacts the performance of SMMEs in the following ways:

- Increases the efficiency of an enterprise's activity measurements
- Decreases the cost of procedures
- Allows information collection and processing at the right time, which assists the decision-making process
- Decreases the cost of communication channels
- Assists enterprises in providing a quality product and service to its customers
- Increases the power of competitiveness

According to the findings of this research, even though IT can provide effective operations and communication between staff and increase the data processing speed and capacity, SMMEs are not capitalising on the benefits technology offers them. One possible reason could be that the SMMEs are not aware of the contribution IT systems can make towards their businesses.

Organisations consist of systems which have different functions and processes. It is important to manage the organisations effectively by integrating these functions and processes with IT for managers and stakeholders to make efficient strategic decisions (Behan & Holmes, 1990; Cebi, 1997; Celik *et al.*, 2014). Unfortunately the findings indicate that Turkish SMMEs are not integrating business processes through IT.

Usage and complexity of IT increase when organisations manage their functions and processes through IT. Therefore difficulties may arise when collecting, processing and deploying information when IT is not managed effectively (Popky, 1986; Cebi, 1997). The role of IT is to store large numbers of complex data and process the data into useful information for users at every level of the organisation (Olumoye, 2013). This statement is supported by some of the interviewees who attempted to adopt advanced level IT systems in their businesses, but could not manage the deployed systems. The level of complexity introduced to the business created an unstable environment for the SMMEs and as a result they stopped using the systems.

5.2.1.9 IT adoption

Technology adoption is a process that begins with the decision-making unit's awareness of new technology during the first stage. The unit seeks or receives information to shape its beliefs and perceptions regarding the new technology (Yu & Tao, 2009). SMMEs have a lack of knowledge as far as technology is concerned. Owners do not view IT as important and as a result, they do not consider investing in the adoption of technology. Any information on new technology is passed on to the owners or decision-makers, but because of the attitude towards new technology, this information is rejected. The results of this study support the findings of Rogers (1995), Knol and Stroken (2001) and Moghavvemi *et al.* (2012).

SMMEs in this research do not view innovation as important. This is not surprising as the SMMEs lack knowledge on the advantages of new technology, they do not understand how to implement technology to create a competitive advantage, and they have a negative attitude towards new technologies.

In the cases where IT adoption is considered, there is a culture of resistance to the adoption of new technology within SMMEs. Most of the owners and managers are ignorant of IT and in many cases the decision to adopt technology is met with a narrow-mindedness that does not allow for progressive strategies.

5.2.1.10 Innovation resources

There are some institutions that pay subsidies to SMMEs to assist them in the adoption of innovation, but SMME owners in Turkey are unaware of the possibilities of obtaining loans from various public financial institutions that target SMMEs. In cases where SMMEs are aware of financial support, the barriers to gain access to the funding are very high. As a result, the SMMEs believe they do not have the capability to obtain funds.

The results show a general lack of knowledge within SMMEs on finance and benefits that new technology and innovation offer. Managerial ignorance of IT and risk aversion are also hindering the adoption process within SMMEs.

5.2.2 Research Question 2

What are the challenges Turkish SMMEs have to face that influence their adoption or non-adoption of new technology innovations?

> *Research sub-question 2.1: What are the factors influencing the adoption of new technology in Turkish SMMEs?*

5.2.2.1 Difficulties of IT adoption

SMMEs face numerous barriers and obstacles that complicate IT adoption. These barriers and obstacles are based on both internal and external factors (MacGregor *et al.*, 2002; Sarosa & Zowghi, 2003; Modimogale, 2009; Ghobakhloo *et al.*, 2012). The internal factors consist of the knowledge, attitude and support of managers/owners, employees' knowledge and attitudes, and the availability of resources. The external factors consist of competitors, government and its institutions, and IT consultants and vendors (Ghobakhloo *et al.*, 2012). The results of this research support these authors. Throughout the research, the following barriers were identified: a) Owner's knowledge and attitude; b) Employee's knowledge and attitude; c) Vendors and consultants; d) Lack of resources and information; and e) Innovation barriers to the adoption of technology.

a) Owner's knowledge and attitude

One characteristic that most SMMEs have in common is that they are owner managed. Owners and managers of SMMEs play a vital role in the IT adoption processes (Sarosa & Zowghi, 2003; Woerndl & Powell, 2013). Therefore, IT adoption in SMMEs is highly dependent on owners' and managers' perceptions of past investments, while specific characteristics such as its size and status of SMMEs are less important (Corrocher & Fontana, 2008; Ismail *et al.,* 2011). Some of the respondents agreed that owners' attitude towards IT adoption is important and makes or breaks the successful adoption of technology into the business.

Organisational culture is created by the motivations, values, attitudes and abilities of owners and managers. For this reason they need to be aware of IT that shapes the future of SMMEs and have the courage to create changes in organisational culture that require the support of IT functions (Fink, 1998; Culkin & Smith, 2000; Kutlu & Ozturan, 2008).

Sixty eight (68) per cent of interviewees are the owners of a business, meaning that they are at the centre of the business and make the decisions. The owner's attitude towards technology has an impact on the adoption of IT in SMMEs. Most of the managers stated that the owners do not have the capability or knowledge to effectively use and select IT for their business. This then creates a negative environment for the adoption of technology within the SMMEs. A culture of resistance to the adoption of new technology is propagated within SMMEs, and managerial ignorance of IT and narrow-mindedness of owners in SMMEs hinder the adoption of technology in the business.

b) Employee's knowledge and attitude

IT tools and implementation costs are high and many SMMEs are unable to afford costs such as hiring expert professionals or qualified staff for the business (Ghobakhloo *et al.,* 2011). According to Caldeira and Ward (2003), internal expertise consists of staff, supervisors and team members who are powerful determinants of effective IT adoption. The lack of IT knowledge among these determinants can be seen as a barrier to IT adoption, while IT knowledge is another key resource influencing IT adoption within SMMEs (Caldeira & Ward, 2003; Ghobakhloo *et al.*, 2011).

As interviewee 18 mentioned:

> …we adopted an IT system that can integrate our business processes together. It was efficient in terms of integration, but the cost of the maintenance was very high and more importantly, the staff had to have training but they did not perform well with the training because the IT system is complex and our staff have [a] lack of technical knowledge. We made [the] decision to change back to our old system using MO Excel (see Annexure 1.18).

SMMEs do not have the expertise or knowledge to evaluate IT systems, therefore IT systems can seem to be too difficult and complex for staff to use. Most importantly, SMMEs have to employ qualified resources with the specific skills set needed for each role (Modimogale, 2009). Even though employees have training sessions on the system, they still make mistakes with data capturing and general management, as supported by Interviewee 20:

> …the IT system that we adopted was not user friendly and staff do not have IT knowledge. Although we had training sessions for our staff, they still made a lot of mistakes with the data. Instead of spending more money on staff and the IT system, we made a decision to use our old system, which is MO Excel (see Annexure 1.20).

c) Vendors and consultants

According to Ghobakhloo *et al.* (2012), external IT vendors or consultants are one of the important aspects in IT adoption in SMMEs. Although their professionalism could have a

positive impact on IT adoption, most of the SMMEs suffer from a lack of qualified external vendors and consultants for their businesses.

Even though IT adoption is slow within Turkish SMMEs, they agree that if they consider implementing new technology and innovations, consulting companies are the channels which they will use.

d) Lack of financial resources

SMMEs have limited access to particular resources when compared to large enterprises (Igbaria & Tan, 1997; Nieto & Fernandez, 2005; Ghobakhloo *et al.*, 2012). According to Ghobakhloo *et al.* (2012), SMMEs suffer from insufficient financial resources and owners usually invest their own personal assets into the business. Furthermore, Ghobakhloo *et al.* (2012) argue that IT implementation requires long term investment and only SMMEs with adequate financial resources would consider adopting IT due to the high cost of IT infrastructure.

In conclusion, within Turkish SMMEs there is a lack of appropriate resources to obtain information.

e) Lack of information

Seventy six (76) per cent of the respondents do not know where to search for and obtain information. The available information is general, insufficient, and includes externally produced sector reports. SMMEs are not able to distinguish between high quality and low quality information; they focus on secondary data and make no or little attempt to create or identify unique information from its own database to create a competitive advantage for the SMMEs.

Many of the SMMEs are slow to adopt technological changes taking place around them. One of the reasons for the slow responsiveness is the lack of financial resources since new technologies are expensive and may not be appropriate for small production, as mentioned by many of the interviewees.

5.2.2.2 Innovation barriers

Most of the SMMEs in this study rejected the adoption of new technologies and innovation. Barriers creating this environment include the current economic climate, the high cost of new technology and processes, and the owner's profile of leadership and risk taking. Adding to these barriers is the ignorant approach of SMME owners that the technology they have, is

"good enough". The adoption of technology and innovation seems hampered by low education levels, the low desire to perform better, and the lack of understanding the socio-economic and technical environment the SMMEs operate in. This approach of the SMMEs is indicative of the business environment and could be one of the reasons for the low contribution to the Turkish economy by SMMEs.

5.3 Research findings with conceptual framework

In particular, the underpinning conceptual framework (See Section 2.6) adopted by this research is used to validate some of the findings, while similar models were adopted to accommodate the findings. The model indicated in Figure 2.5, together with the underpinning adopted framework, was used to consolidate the findings from the research—the integrated framework of IT adoption and competitive advantage, as proposed by Moghavvemi *et al.* (2012). The model (Figure 5.2) is based on Rogers' DOI framework. Moghavvemi *et al.* (2012) focus on effect of attitude and self-efficacy on the IT adoption process for gaining competitive advantage.
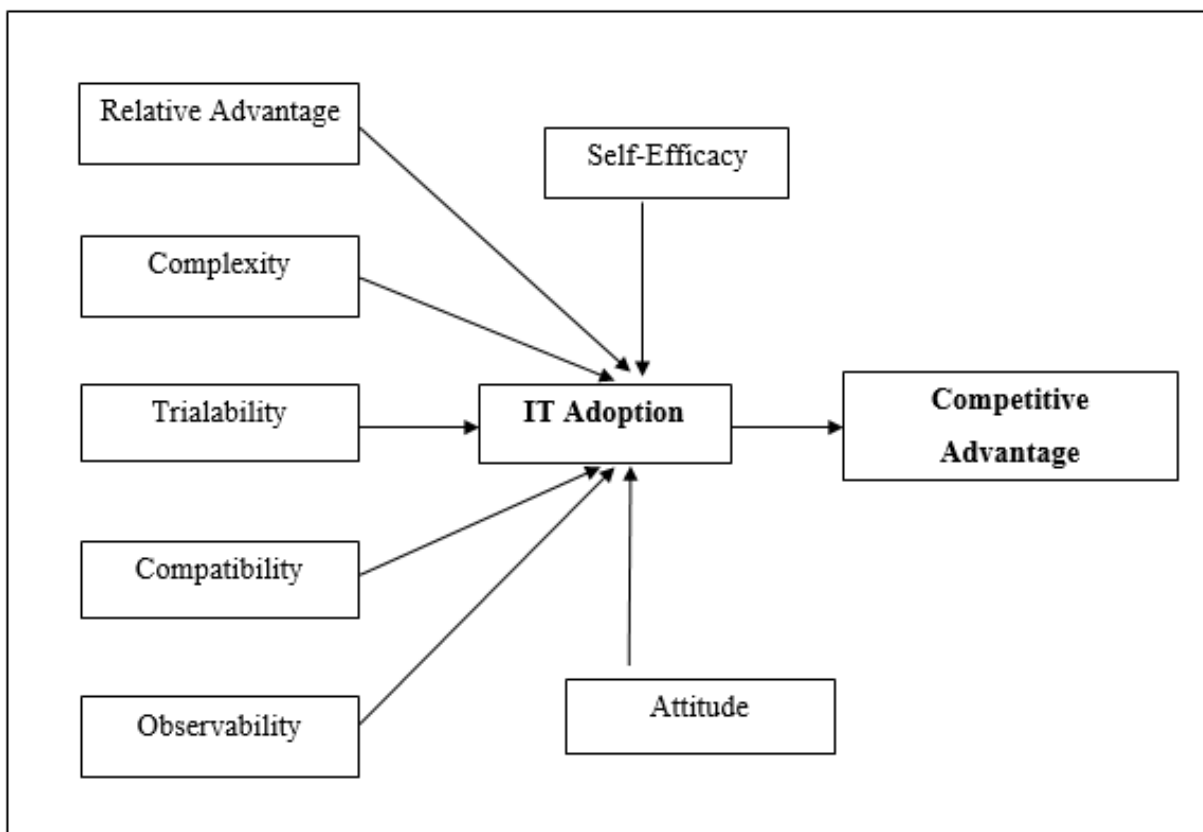
Figure 5.2: Integrated framework of IT adoption and competitive advantage
(Source: Moghavvemi et al., 2012:31)

The adoption of IT is the decision to make full use of a technology by going through stages before accepting or rejecting the new technology adoption (Rogers, 1983; Knol & Stroken,

2001; Moghavvemi *et al.,* 2012). DOI takes different approaches to most of the other theories of change. For example, instead of focusing on individual change, change is seen as being primarily about the development of products and behaviours (Robinson, 2012). There are five general attributes of new technology, namely:

- Relative advantage
- Complexity
- Trialability
- Observability
- Compatibility (Rogers, 1995)

5.3.1 Implication of findings on adopted conceptual framework

The Innovation of Diffusion Theory (IDT) was adopted for this research to extend and develop a model to measure individual and technological dimensions towards technology adoption. The proposed theoretical model is developed to provide a comprehensive understanding of the determinants that affect the adoption of IT by SMME owners and employees in Turkey.

5.3.1.1 Relative advantage

If the SMME owners believe that IT is useful and would improve their business performance, they could have a higher interest to adopt and use IT innovation in Turkish SMMEs.

5.3.1.2 Complexity

If IT innovation is easy to use, SMME owners and employees would probably have a higher intention to adopt and use IT innovation in Turkish SMMEs.

5.3.1.3 Trialability

If SMME owners are able to first do a trial run with using IT innovation, the probability to adopt and use new technologies would be higher.

5.3.1.4 Compatibility

If the new technology is consistent with the existing technology and business processes, SMME owners would have a higher intention to adopt and use such technology.

5.3.1.5 Observability

SMME owners might have a higher intention to adopt and use IT innovation if IT is visible to users in the working environment.

5.3.1.6 Attitude

Attitude is an important factor that affects the intention to adopt or reject IT. If SMME owners' and employees' attitude towards IT adoption and usage is positive, they would have stronger intention to adopt and use IT in their businesses.

5.3.1.7 Self-efficacy

Skills and ability to use IT affect the intention to adopt or reject IT. Therefore, if SMME owners and employees have the qualified skills and ability to use IT, they would have a higher intention to adopt and use IT.

When applying the IDT framework, it is clear that the SMMEs in this study do not comply with any of the factors that are important when considering IT adoption. The outcome is simple—no competitive advantage can be created and the SMMEs will not perform as expected in order to contribute to the economy.

5.4 Proposed guidelines for IT adoption to gain a competitive advantage

Towards a better understanding of an appropriate way to IT adoption, SMMEs should realise their need for IT and the advantages of IT for their businesses. IT adoption encompasses measurement factors such as effectiveness, cost, quality of functionality, benefits accruable and associated risk, among others. SMMEs must establish compelling and relevant evidence pointing to the appropriateness of IT adoption and its effective utilisation as a clear advantage over their competitors.

The guidelines presented below are developed for Turkish SMMEs to assist in the adoption of IT to gain a competitive advantage in their business.

5.4.1 Top Level Management Guidelines (for SMME owners)

i) SMMEs need to consider what predictable impact could be imposed by adopting IT in their business situations and competitive position.

ii) SMMEs need to establish the opportunities or needs for improvement as well as areas of business functionality in need of an intervention.

iii) SMMEs need to understand that IT has the capability to act as a strategic tool to assist in competing with their larger counterparts in the globalised market.

iv) SMMEs need to secure managerial support and a positive attitude of employees towards the new technology.

v) SMMEs need to determine the current level of employee expertise, technical ability and knowledge of new technology.

vi) SMMEs need to assess the operational functions, deliverables and cost associated with current technology.

5.4.2 Guidelines for using available resources

i) SMMEs should find existing obtainable external resources and government business support programmes, technology initiatives and grants on new technology acquisition.

ii) SMMEs need to research new available technologies with potential application to the business by using the Internet to determine the use in other parts of the world and country.

iii) SMMEs need to consult professional technology firms on expertise, technical matters, and the latest advancements in industry.

iv) SMMEs need to establish industry demand, the type of technology in use by other competitors, and trading partners.

v) SMMEs need to identify potential vendors or available outsourcing options to adopt IT.

5.4.3 Technology—Organisation—Environment Guidelines

i) SMMEs need to assess the operational processes, output and cost associated with their current technology.

ii) SMMEs need to ensure that the adopted technology improves the effectiveness in management and operations.

iii) SMMEs need to establish the industry demand to be aware of the types of technologies in use by other competitors.

iv) SMMEs need to determine the cost of information access, evaluation of new technology and operational skills.

v) SMMEs need to establish the potential value added benefits to the effectiveness of business services.

vi) SMMEs need to determine the availability of technological infrastructure needed to support the new technology operation.

vii) SMMEs need to determine the scalability of new technology.

It is important for SMMEs to create an adoption culture and develop processes as part of the business to gain a competitive advantage. The adoption steps of the new technology are dependent on the choice made by the owners of SMMEs in this case. The basic adoption steps might include configuring to match the business process, testing of functionality, training users, and conversion of data files to match the format required by the new system. The adoption guidelines will potentially lead to SMME owners and managers making an effective choice and decision on new technology adoption.

5.5 Summary

Research question 1: How do Turkish SMMEs manage their information technology to gain a competitive advantage?

The competitive advantage depends on the value the organisation is able to create. Not all organisations have the relevant resources to sustain their competitive advantage, but those with the resources can contribute to an effective performance if the potential of IT is realised. When IT systems are used effectively and optimally, IT can contribute towards efficiency by providing effective operations, effective communication, and fast information flow.

Turkish SMMEs use IT software products at a low level and do not create any competitive advantage for their business.

There are a few considerations when investing in IT. SMMEs are not aware of the cost/risk/benefit ratio of IT and the contribution of IT to their businesses. Therefore, SMMEs do not consider IT as a tool that contributes towards a competitive advantage and believe that they are too small and their capacity too low to be competitive in their industry. As a result, there is a resistance to change and to adopt new technologies within Turkish SMMEs. The results show a general lack of knowledge within SMMEs on finance and benefits that new technology and innovation offer. Managerial ignorance of IT and risk aversion also hinder the adoption process within SMMEs.

Although IT systems have the potential to be used by businesses to create a competitive advantage, most SMMEs interviewed (76 per cent) are not interested in gaining a competitive advantage. The lack of interest in creating a competitive advantage may be as a result of the interviewees not knowing what potential the IT systems hold and could contribute to their businesses.

Research Question 2: What are the challenges Turkish SMMEs have to face that influence their adoption or non-adoption of new technology innovations?

If a new technology is properly evaluated and its suitability to the business determined, the benefits accruable usually outweigh the cost of investment over time. SMMEs could be more successful if IT is implemented according to the critical success factors such as owners' motivation, experience and management skills, expertise to manage growth, access to resources, innovation and competitive advantage, effective customer service, and a focus on profit rather than sales. In order to achieve these critical factors, SMMEs need to have an effective and efficient IT strategy and ensure that the IT strategy aligns with the business strategy by supporting the business goals (Modimogale, 2009).

According to the findings, there is a resistance to the change that innovation brings to SMMEs. The fear or resistance to change results in SMMEs not considering adopting new technologies or/and innovation. The perceived changes that innovation and technology bring to SMMEs are not the only reasons for interviewees to resist adoption of IT. The lack of knowledge as well as the high costs of innovation and technology should also be considered before acquiring new technologies. SMMEs stated that they are too small and their capacity too low to be competitive in their industry. They furthermore stated that it is not necessary to spend more money from their budget while they cannot be competitive enough.

Given the responses, this may be the result of a lack of knowledge and resources because most of the interviewees stated that they cannot find any resources and information about opportunities of IT and innovation.

In conclusion, new technology results in change and creates uncertainty. Owners of SMMEs are of the opinion that the adoption of new technology and innovation is time consuming, a waste of time and too costly to implement. They do not believe IT can improve their business nor can IT add a competitive advantage to Turkish SMMEs.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS
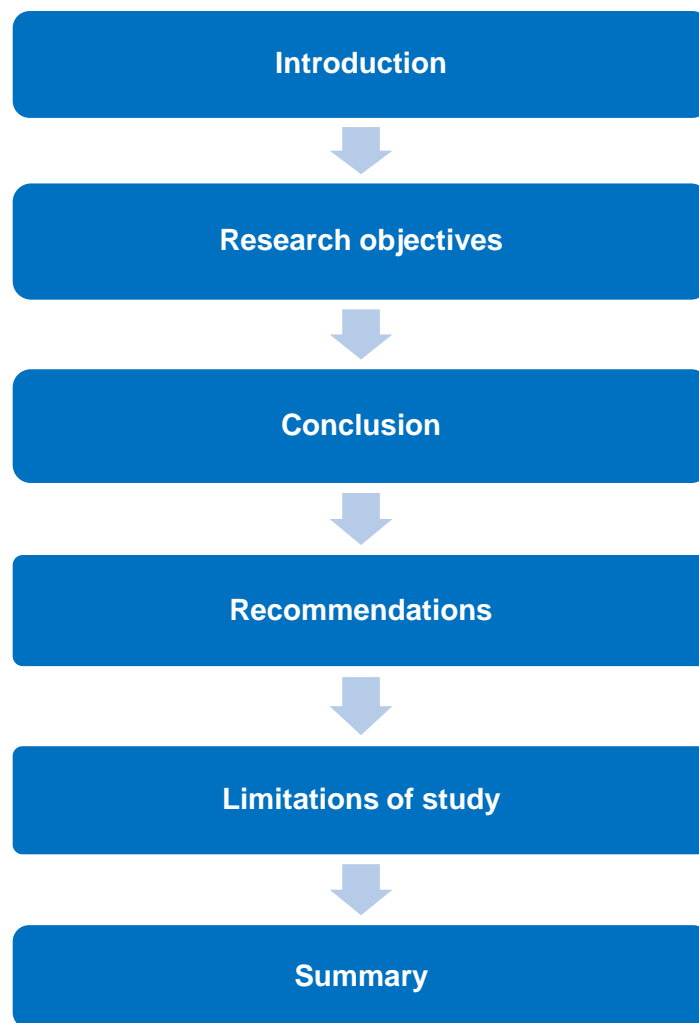
Figure 6.1: Chapter Six layout

6.1 Introduction

For decades, numerous studies have been conducted to obtain more knowledge on the phenomenon of the adoption of IT to gain a competitive advantage. IT is critical for the growth of SMMEs and can increase the competitive strength of businesses through cost reduction, efficiency and effectiveness. SMMEs in Turkey need to be competitive due to a rapidly growing environment. SMMEs operate in a complex and dynamic environment, therefore they are faced with weaknesses and constraints in the development stage of the enterprise:

> …poor usage of technology, innovation, research and development; low bank credit usage; insufficient access to finance, inadequate usage of marketing techniques, low educational level, lack of capital for IT investments, lack of institutionalisation, low level of cooperation, lack of reaching global standards and lack of management capacity (*Tektaş et al.,* 2012:65).

The importance of a competitive advantage through the adoption of IT in Turkish SMMEs has not been focused enough on in previous studies. The ability to gain a competitive advantage is based on relevant, available technologies. The potential value of IT is essential for the businesses' continued survival and sustainability.

This chapter provides the conclusion and recommendations. Research objectives are discussed. The limitations and reflection on the research are underlined. The study addresses the issue of gaining a competitive advantage through IT adoption in SMMEs, with the aim of developing a set of guidelines from the knowledge gained from the owners and managers of SMMEs and the exploratory study to address the problems in relation to IT adoption and competitive advantages within SMMEs. Recommendations are provided to guide SMMEs and promote further research.

6.2 Research objectives

This research aims are to explore and broaden the researcher's understanding of a competitive advantage through the adoption of IT in SMMEs. The objectives of the study were formulated in the early stages of the research. The study discussed factors affecting competitive advantage and adoption of IT by SMMEs, how SMMEs gain a competitive advantage and obtain information, and knowledge of available IT for their businesses.

The objectives of the research can be summarised as following:

- **To determine the evaluation process of information technology and its role in creating a competitive advantage in Turkish SMMEs**

 The process of IT adoption involves different processes and it begins with the decision-making units' awareness of IT. To conduct an adoption, the SMME needs to research and seek for information from relevant sources and consult experts in technology and business. IT is an extremely effective tool when it supports the business' strategies towards gaining or sustaining a competitive advantage against their competitors. Some sources of competitive advantage which can be gained from IT adoption and implementation include having an effective product on the market, delivering efficient customer service, and achieving lower cost than competitors. These competitive advantages can be gained and sustained by SMMEs if IT is used effectively.

- **To determine the management of information technology in SMMEs when new information technology is adopted**

IT is important to the continued survival of SMMEs. Consequently, the lack of adoption is a problem within SMMEs because decisions are taken on little or no information. Most of the owners have managerial ignorance of IT and some narrow-mindedness is found. SMMEs do not have the expertise or knowledge to evaluate IT systems and they do not have evaluation tools available to them when considering adopting new technology. Also, they do not understand the cost/risk/benefits ratio of adopting IT, because risks are not identified and evaluated when acquiring IT systems. Although some of the SMMEs state that when they consider the adoption of new technology and innovation, they prefer to obtain relevant information from consulting companies; however, there is still a lack of appropriate resources in this regard.

- **To determine what factors will influence SMMEs for and against the adoption of new technologies and to ascertain the challenges for SMMEs when adopting technology**

If a new technology is properly evaluated and its suitability to the business determined, the benefits accruable usually outweigh the cost of investment over time. SMMEs could be more successful if IT is implemented according to the critical success factors such as owner's motivation, experience and management skills; expertise to manage growth; access to resources; innovation and competitive advantage; effective customer service; and a focus on profit rather than sales. In order to achieve these critical factors, SMMEs need to have an effective and efficient IT strategy and ensure that the strategy aligns with the business strategy by supporting business goals.

There is a low level of IT software product usage by SMMEs because IT is not seen as an important tool by SMMEs to create a competitive advantage. Although IT can offer integration for business processes when it is used effectively, most SMMEs do not use IT effectively.

The most common barrier for SMMEs wanting to use IT in their businesses is the high cost of IT adoption. There are free IT software products available for SMMEs as well as government and other institutions providing funds, but SMMEs are not aware of the free products or/and funding. SMMEs also believe that the IT systems can be difficult and too complex to use by staff.

- **To determine the technologies needed for Turkish SMMEs**

This study determined that MO Excel is widely used in Turkish SMMEs. However, there is strong need for advanced IT adoption, and dissatisfaction with adopting advanced

technology in SMMEs. Although there is an opportunity to adopt free IT software products to integrate business processes, most of the SMMEs are not aware of these free products. There is advanced IT software available for SMMEs, but only a few use this software to create a competitive advantage.

Thus, Turkish SMMEs need advanced technologies to manage their business processes effectively and gain a competitive advantage. In order to manage these technologies, SMME owners/managers and employees need to change their attitude towards IT and seek knowledge on new technologies.

6.3 Conclusion

To answer the problem statement that SMMEs in Turkey do not effectively leverage their IT to create a competitive advantage, two main questions are stated:

Research Question 1: How do Turkish SMMEs manage their information technology to gain a competitive advantage?

Turkish SMMEs do not manage their information in an effective and efficient way. They lack knowledge as well as ICT infrastructure to manage their information. From the findings, it seems that SMMEs are not concerned with creating a competitive advantage. This may be as a result of ignorance, lack of knowledge, the fear for new technology, or simply the perceived high cost of ICT.

Research Question 2: What are the challenges Turkish SMMEs have to face that influence their adoption or non-adoption of new technology innovations?

There are many challenges as shown in the findings. There are a few considerations when investing in IT. SMMEs are not aware of the cost/risk/benefit ratio of IT and the contribution of IT to their businesses. Therefore, SMMEs do not consider IT as a tool that contributes towards a competitive advantage and they believe that they are too small and their capacity too low to be competitive in their industry. As a result, there is resistance to change and adoption of new technologies within Turkish SMMEs. The results of this study indicate a general lack of knowledge within SMMEs on finance and benefits that new technology and innovation offer. Managerial ignorance of IT and risk aversion are also hindering the adoption process within SMMEs.

There is a resistance to the change that innovation brings to SMMEs. The fear or resistance to change results in SMMEs not considering the adoption of new technologies or/and innovations. The perceived changes that innovation and technology bring to SMMEs are not

the only reasons for interviewees resisting IT adoption. The lack of knowledge as well as the high cost of innovation and technology is considered before acquiring new technologies. SMMEs also state that they are too small and their capacity too low to be competitive in their industry. They furthermore state that it is not necessary to spend more money from their budget while they cannot be competitive enough. According to the responses, this may be the result of a lack of knowledge and resources, because most of the interviewees stated that they cannot find any resources and information on opportunities of IT and innovation.

6.4 Recommendations

To improve the competitiveness of SMMEs through the adoption of IT, a number of issues and considerations must be addressed. A SWOT analysis by the SMME owners/managers needs to be conducted to analyse the internal and external environment. Grounded on this analysis, SMMEs can determine whether their business should be sustained to continue. For the SMMEs that do decide to continue, it is important to generate a business plan for strategic management and to gain a competitive advantage. Knowledge and information are critical factors that change the competition environment of business from time to time, and it has been recognised as two of the most important success factors for an organisation in many key aspects.

The majority of SMMEs do not advance to a stage where IT is seen as important tool. Only 24 per cent of the SMMEs use advanced IT products. Some of the interviewees stated that employees are not able to use the advanced IT products properly. Employees need thorough training that integrates both technical and managerial aspects.

One of the reasons for the slow responsiveness is the lack of financial resources since new technologies are expensive and may not be appropriate for small production as mentioned by many of the interviewees. There are some institutions that pay subsidies to SMMEs to assist them in adopting innovation, but SMME owners in Turkey are unaware of the possibilities of obtaining loans from various public financial institutions that target SMMEs. SMMEs need to attain the best benefits from government policy and subsidies because the value of the SMMEs depends on the conversion of competitive dynamics into sustainable cash flows.

Although innovation is a critical resource for SMMEs to prosper in a competitive environment, they do not consider innovation as important tool for their businesses. SMMEs need to be more innovative and improve their research and development (R&D) abilities to keep up to date with technological innovations.

6.5 Future studies

This research study can be extended to accommodate further exploration and investigation into the dynamics of competitive advantage through adoption of IT.

The study focused only on the insurance sector and included only small enterprises, therefore it provided only a partial view of the competitive environment and IT adoption issues by SMMEs in Turkey. Further studies adopting an extensive quantitative method to ensure generalisability of the results in other regions, sectors and sizes, are recommended.

Government policies on SMME support and initiatives, accessibility and integration of information, and educational levels should be revisited and addressed. The ineffectual levels of existing policies are of serious concern to SMMEs as it affects their development and survival ability in the market. Government should review policies concerning the development of SMMEs to create an enabling business environment for SMMEs and empower them to play in the same field as larger enterprises.

The conceptual framework of this research should be engaged in other similar studies to determine if it applies to other regions. The proposed set of guidelines should be tested by applying it to different enterprises in different contexts and sectors to determine its suitability for other enterprises.

6.6 Limitation of study

The research study has been limited to 25 SMMEs operating in city of Antalya, Southern Turkey, and generalisation is limited to the field of the research. The themes were developed based on 25 SMMEs operating in the insurance sector, thereby excluding all other sectors.

The SMMEs in this research have been found to be resistant to change in terms of technology. It was difficult to engage with these SMMEs because of their unwillingness to participate due to their lack of perception and knowledge of IT. The major data collection challenge was to reach the owner/managers of SMMEs due to their limited availability. Although the administering of face-to-face interviews is an appropriate method of exploring attitudes towards IT adoption, a few interviewees were reluctant to answer some of the questions fully and openly.

6.7 Summary

Problem Statement:

SMMEs do not give sufficient consideration to IT as a long-term tool to be utilised in business processes. Failure to understand the potential and implications of IT in the business processes could result in low potential growth, low product development and insufficient service quality as well as losing competitiveness. SMMEs in Turkey do not effectively leverage their IT to create a competitive advantage. This leads to low productivity among SMMEs and a low contribution by the SMMEs to the Turkish economy.

Various studies show that IT adoption and usage can reduce cost, improve the quality and efficiency of business processes, and reduce the time span to market. To find the determinants of IT adoption among the owners and managers of SMMEs, DOI is adopted as a base model to explore competitive advantage in Turkish SMMEs through IT adoption. Attitude and self-efficacy are added to the DOI model because these factors have a significant effect on IT adoption behaviour.

Turkish SMME owners need to understand the potential of IT to gain a competitive advantage and ensure survival and growth in the market. The culture and practice of IT adoption will enable SMMEs to seek information and knowledge in order to gain a competitive advantage. The proposed set of guidelines could assist SMMEs in the IT adoption process to identify internal and external factors relating to new technologies for the business.

Aim

The aim of the research is to explore the challenges of adopting IT within Turkish SMMEs, and how these SMMEs can gain a competitive advantage through the use of innovative IT. The output is a proposed set of guidelines to assist SMMEs in Turkey in utilising information technology to create a competitive advantage in order to increase SMME contributions to the national economy.

The research aim was achieved by using a multiple case study design, with interviews, surveys and a literature review forming the sources of the data collection. Findings were conceptualised to extend an existing theory from the literature, and also used as the basis of proposing a set of guidelines to assist SMMEs in creating a competitive advantage through IT adoption.

6.8 Reflection

This research established that the adoption of IT by SMMEs is one of the most important aspects of gaining a competitive advantage in the insurance sector. The research commenced with the aim to explore the reasons behind the low adoption and usage of IT within SMMEs. The purpose of the research was to explore the challenges of adopting IT within Turkish SMMEs and how these SMMEs could gain a competitive advantage through the use of IT.

Data was collected to determine the factors causing the low adoption rate and usage of IT in Turkish SMMEs. Most of the interviewees did not display a satisfactory knowledge of IT and it was established that the disinterest of SMME owners and managers significantly contribute to slow IT adoption in SMMEs.

A set of guidelines is proposed for Turkish SMMEs to assist in the adoption of IT to gain a competitive advantage in their business.

REFERENCE LIST

Ada, E., Ventura, K., Aracioglu, B. & Savasci, I. 2008. Kobi'lerin Rekabet Gucu ve E-Ticarete Gecis Sureci: Bir Model Onerisi. *Ege Academic Review,* 1(8):53-68.

Ahuja, V., Yang, J. & Shankar, R. 2009. Study of ICT adoption for building project management in the Indian construction industry. *Journal: Automation in Construction,* 2(18):415-423.

Ajzen, I. 1985*. From intentions to actions: a theory of planned behaviour.* Berlin: Springer. pp. 11-39.

Alalawi, A.I. & Alali, F.M. 2015. Factors affecting E-commerce adoption in SMEs in GCC: an empirical study of Kuwait. *Research Journal of Information Technology,* 7(1):1-21.

Alpkan, L. & Kaya, S. 2012. Problems and solution proposals for SMEs in Turkey. *Emerging Markets Journal,* 2(1):30-45.

Anderson, L. 2006. Analytic autoethnography. *Journal of Contemporary Ethnography,* 35(4):373-395.

Andersson, A., Skoog, S. & Svensson, J. 2014. *Commuter shopping: a study in understanding commuting in the context of shopping.* [Online]. Available at: http://www.diva portal.org/smash/get/diva2:719166/FULLTEXT01.pdf. [Accessed: 28 October 2014].

Andrade, A.D. 2009. Interpretive research aiming at theory building: adopting and adapting the case study design. *The Qualitative Report,* 14(1):42-60.

Antonelli, R.A., Almeida, L., Colauto, R.D. & Longhi, F.L. 2014. Accounting professionals' perceptions concerning the influence of information technology in decision-making process. *African Journal of Business Management,* 8(1):1-13.

Aspers, P. 2004. *Empirical phenomenology: approach for qualitative research.* 1st ed. London: Methodology Institute at the London School of Economics and Political Science.

Atici, G.B. 2006. *Küçük ve orta ölçekli işletmelerin ekonomik gelişime etkileri, finansman kaynakları ve KOBİ'lerin büyümesini sağlayan faktörlere ilişkin bir karşılaştırma,* Istanbul: Istanbul Universitesi.

Audretsch, D.B. 2002. The dynamic role of small firms: evidence from the U.S. *Small Business Economics,* 1(18):13-40.

Awwad, A.S., Khattab, A. & Anchor, J.R. 2013. Competitive priorities and competitive advantage in Jordanian manufacturing. *Journal of Service Science and Management,* 6(6):69-79.

Aydin, I. 2012. Bilisim Sektoru ve Turkiye'nin Sektordeki Potansiyeli. *International Journal of New Trends in Arts, Sports & Science Education,* 1(1):180-200.

Babbie, E. 1998. *The practice of Social Research.* 1st ed. California, USA: Wadsworth.

Bagale, G.S. 2014. Determinants of E-commerce in Indian MSME sector: a conceptual research model based on TOE framework. *Universal Journal of Management,* (2):105-115.

Bahari, S.F. 2010. Qualitative versus quantitative research strategies: contrasting epistemological and ontological assumptions. *Jurnal Teknologi,* (52):17-28.

Baker, J. 2011. The Technology-Organization-Environment framework. *Springer New York,* 1:231-246.

Baliamoune, L.M. 2003. An analysis of the determinants and effects of ICT diffusion in developing countries. *Information Technology for Development IOS Press,* 10(2003):151-169.

Barney, J. 1991. Firm resources and sustained competitive advantage. *Journal of Management,* 17(1):99-120.

Barney, J.B. & Clark, D.N. 2007. *Resource-based theory: creating and sustaining competitive advantage.* 1st ed. New York: Oxford University Press.

Bayulken, Y. & Kutukoglu, C. 2012. *Kucuk ve orta olcekli sanayi isletmeleri (KOBI'ler).* Ankara: TMMOB.

Behan, K. & Holmes, D. 1990. *Understanding information technology: text, readings, and cases.* 2nd ed. Australia: Pearson Education.

Benbasat, I., Goldstein, D.K. & Mead, M. 1987. The case research strategy in studies of information systems. *MIS Quarterly,* 11(3):369-386.

Bernauer, J.A., Lichtman, M., Jacobs, C. & Robertson, S. 2013. Blending the old and the new: qualitative data analysis as critical thinking and using NVivo with a generic approach. *The Qualitative Report,* 18(2):1-10.

Binu, S.V., Mayya, S.S. & Dhar, M. 2014. Some basic aspects of statistical methods and sample size determination in health science research. *An International Quarterly Journal of Research in Ayurveda,* 35(2):119-123.

Bolderston, A. 2012. Conducting a research interview. *Journal of Medical Imaging and Radiation Sciences,* 43(1):66-76.

Botha, N. & Atkins, K. 2005. An assessment of five different theoretical frameworks to study the uptake of innovations. *Proceedings.* New Zealand Agricultural and Resource Economics Society Conference, Nelson, 26-27 August.

Breznik, L. 2012. Can information technology be a source of competitive advantage? *Economic and Business Review,* 14(3):251-269.

Bryman, A. 2004. *Social research methods.* 2nd ed. Oxford University Press.

Bryman, B. & Bell, E. 2011. *Business research methods.* 3rd ed. Oxford University Press.

Bunker, D., Kautz, K.H. & Nguyen, A.L. 2007. Role of value compatibility in IT adoption. *Journal of Information Technology,* 22(1):69-78.

Caldeira, M. & Ward, J.M. 2003. Using resource-based theory to interpret the successful adoption and use of information systems and technology in manufacturing small and medium-sized enterprises. *European Journal of Information Systems,* 12:127-141.

Cardeal, N. & António, N. 2012. Valuable, rare, inimitable resources and organization (VRIO) resources or valuable, rare, inimitable resources (VRI) capabilities: what leads to competitive advantage? *African Journal of Business Management,* 6(37):10159-10170.

Carr, N. 2003. It does not matter. *Harvard Business Review,* 1:5-12. May.

Cebi, F. 1997. *Bilisim teknolojılerinin rekabet ustunlugune yonelik etkileri ve Turk isletmelerinde bir arastirma.* Istanbul: Istanbul Universitesi.

Celik, A.K., Talas, E. & Akbaba, A.İ. 2013. A sectoral hierarchical clustering of SMEs in Turkey with respect to general support programs. *Review of European Studies,* 5(5):84-96.

Celik, I., Sahin, I. & Aydin, M. 2014. Reliability and validity study of the Mobile Learning Adoption Scale developed based on the Diffusion of Innovations Theory. *International Journal of Education in Mathematics, Science and Technology,* 2(4):300-316.

Choi, H.J. 2009. Technology transfer issues and a new technology transfer model. *The Journal of Technology Studies,* 35(1). [Online]. http://scholar.lib.vt.edu/ejournals/JOTS/v35/v35n1/choi.html. [Accessed: 20 September 2014].

Chowdhury, M.F. 2014. Interpretivism in aiding our understanding of the contemporary social world. *Open Journal of Philosophy*:432-438.

Christiansen, B., Yildiz, S. & Yildiz, E. 2014. *Handbook of research on effective marketing in contemporary globalism.* 1st ed. USA: IGI Global.

Cleff, T. & Rennings, K. 2011. Are there any first-mover advantages for pioneering firms? Lead market orientated business strategies for environmental innovation. *European Journal of Innovation Management,* 15(4):491-513.

Coplin, L.C. 2002. *Competitive Advantages and SMEs.* Barcelona: University of Barcelona.

Cordeiro, A. & Vieira, F. 2012. Barriers to innovation amongst small and medium-sized enterprises (SMEs) in Portugal Iberoamerican. *Journal of Industrial Engineering,* 4(8):146-162.

Corrocher, N. & Fontana, R. 2008. Expectations, network effects and timing of technology adoption: some empirical evidence from a sample of SMEs in Italy. *Small Business Economics,* 31(4):425-441.

Creswell, J.W. 1998. *Qualitative inquiry and research design: choosing among five traditions.* 1st ed. London: Sage.

Creswell, J.W. 2012. *Qualitative inquiry and research design: choosing among five traditions.* 3rd ed. California: Sage.

Culkin, N. & Smith, D. 2000. An emotional business: a guide to understanding the motivations of small business decision takers. *An International Journal,* 3(3):145-157.

Dahnil, M.I., Marzuki, K.M., Langgat, J. & Fabeil, N.F. 2014. Factors influencing SMEs adoption of social media marketing. *Procedia - Social and Behavioral Sciences,* 148(2014):119-126.

Dai, W. 2009. The impact of emerging technologies on small and medium enterprises (SMEs). *Journal of Business Systems, Governance and Ethics,* 4(4):53-60.

Daneshvar, P. & Ramesh, H.N. 2010. Review of information technology effect on competitive advantage - strategic perspective. *International Journal of Engineering Science and Technology,* 2(11):6248-6256.

Dangal, M.R. 2012. Zooming on the qualitative paradigm in management and development research. *Administrative and management review,* 24(2):1-23.

Dauda, Y.A. & Akingbade, W.A. 2011. Technologıcal change and employee performance in selected manufacturıng industry in Lagos state of Nigeria. *Australian Journal of Business and Management Research,* 1(5):32-43.

Delkhosh, A. 2012. *Lean Automation: combining Lean with industrial robotics in real examples.* Sweeden: Malardalen University.

Dieronitou, I. 2014. The ontological and epistemological foundations of qualitative and quantitative approaches to research. *International Journal of Economics,* 2(10):1-17.

Dilshad, R.M. & Latif, M.I. 2013. Focus group interview as a tool for qualitative research: an analysis. *Pakistan Journal of Social Sciences (PJSS),* 33(1):191-198.

Drucker, P. 2001. The next society. *Economist.* 361(8246):3-5.

Dulkadir, B. & Akkoyun, B. 2013. Bilisim teknolojilerinin isletme performansi uzerine etkileri ve Gaziantep ilinde tekstil sektorunde bir arastirma. *Gümüşhane Üniversitesi Sosyal Bilimler Elektronik Dergisi,* 1(7):72-90.

Easterby, M.S., Thorpe, R. & Jackson, P.R. 2012. *Management research.* 4th ed. London: Sage.

Elibol, H. 2003. *Bilisim teknolojileri kullaniminin isletmelerin organizasyon yapilari uzerine etkileri,* Kirikkale: University of Kirikkale.

Fink, A. 1998. *Conducting research literature reviews: from paper to the Internet.* 2nd ed. London: Thousand Oaks, Sage.

Ghobakhloo, M., Benitez, A.J. & Arias, A.D. 2011. Reasons for information technology adoption and sophistication within manufacturing SMEs. *Proceedings.* POMS 22nd Annual Conference: Operations management, Nevada.

Ghobakhloo, M., Hong, T.S., Sabouri, M.S. & Zulkifli, N. 2012. Strategies for successful information technology adoption in small and medium-sized enterprises. *Information 2012,* 3:36-67.

Gillham, B. 2005. *Research interviewing: the range of techniques.* 1st ed. UK: McGraw-Hill Education.

Githiora, L.W. 2013. Assignment: With good examples distinguish between qualitative research and quantitative analysis methods. Masters in Project Planning and Management. University of Nairobi, Kenya.

Godoe, P. & Johansen, T.S. 2012. Understanding adoption of new technologies: technology readiness and technology acceptance as an integrated concept. *Journal of European Psychology Students,* 3:38-52.

Goldkuhl, G. 2012. Pragmatism vs interpretivism in qualitative information systems research. *European Journal of Information Systems,* 2012(21):135-146.

Gray, D.E. 2014. *Doing research in the real world.* 3rd ed. London: Sage.

Green, K., Miozzo, M. & Dewick, P. 2005. *Technology, knowledge and the firm.* 1st ed. Cheltenham: Edward Elgar.

Gules, H.K., Tekin, M. & Ogut, A. 2003. *Degisim caginda teknolojik yonetim.* 2nd ed. Ankara: Nobel Yayinlari.

Guzman, G.M., Gutierrez, J.S., Cortes, J.G. & Ramirez, R.G. 2012. Measuring the competitiveness level in furniture SMEs of Spain. *International Journal of Economics and Management Science,* 1(11):9-19.

Halim, H.A., Ahmad, N.H., Ramayah, T. & Hanifah, H. 2014. The growth of innovative performance among SMEs: leveraging an organizational culture and innovative human capital. *Journal of Small Business and Entrepreneurship Development,* 2(1):107-125.

Hameed, M.A. & Counsell, S. 2012. Assessing the influence of environmental and CEO characteristics for adoption of information technology in organizations. *Journal of Technology Management & Innovation,* 7(1):64-84.

Hemmatfar, M., Salehi, M. & Bayat, M. 2010. Competitive advantages and strategic information systems. *International Journal of Business Management,* 5(7):158-169.

Henderson, J.C. & Venkatraman, N. 1993. Strategic alignment: leveraging information technology for transforming organization. *IBM System Journal ,* 32(1):472-484.

Hitchcock, G. & Hughes, D. 1989. *Research and the teacher.* 1st ed. London: Routledge.

Hitt, M.A., Ireland, D. & Hoskisson, R.E. 2010. *Strategic management: competitiveness and gobalization.* 9th ed. Mason: South Western.

Hoepfl, M.C. 1997. Choosing qualitative research: a primer for technology education researchers. *Journal of Technology Education,* 9(1):47-63.

Holden, M.T. & Lynch, P. 2004. Choosing the appropriate methodology: understanding research philosophy. *The Marketing Review,* 4(4):397-409.

Hussin, H. & Suhaimi, M.A. 2011. *Information technology and business alignment in Malaysia SMEs.* 1st ed. Selangor, Malaysia: IIUM.

Igbaria, M. & Tan, M. 1997. The consequences of information technology acceptance on subsequent individual performance. *Information Management,* 32(1):113-121.

Ion, P. & Andreea, Z. 2008. Use of ICT In SMEs management within the sector of services. *The Journal of the Faculty of Economics,* 4(1):481-487.

Ishak, N.M. & Bakar, A.Y.A. 2014. Developing sampling frame for case ctudy: challenges and conditions. *World Journal of Education,* 4(3):29-35.

Ismail, R., Jeffery, R. & Van Belle, J.P. 2011. Using ICT as a value adding tool in South African SMEs. *Journal of African Research in Business & Technology,* 2011(2011):1-12.

Jin, N. 2007. A Study of information technology adoption for small and medium sized enterprises strategic competitiveness. *IEEE Journal,* 1:4244-1312.

Kadadevaramath, R.S., Chen, J.C.H., Sangli, M., Raj, R.K. & Vardhan, H. 2014. A study on implementation of IT tools in SME's in India. *Industry Engineering Management,* 3(4):1-6.

Kafle, N.P. 2011. Hermeneutic phenomenological research method simplified. *Bodhi: An Interdisciplinary Journal,* (5):181-200.

Kalkan, A., Erdil, O. & Çetinkaya, O. 2011. The relationships between firm size, prospector strategy, architecture of information technology and firm performance. *Procedia - Social and Behavioral Sciences,* (24):854-869.

Karahasan, F. 2013. *Internet sitelerimizin durumu kotu.*Istanbul: Milliyet.

Kavcioglu, S. 2009. *The Turkish experience in SME finance and non-financial services streamlining.* Istanbul, Globalized World Conference.

Keskin, H. & Senturk, C. 2010. The importance of small and medium-sized enterprises (SMEs) in economies: swot analysis of the SME sector in Turkey and Albania. *Nigde University İİBF Journal,* 3(1):116-132.

Kilicer, K. & Odabasi, H.F. 2013. Exploring the perceived barriers to innovativeness: views of Turkish pre-service teachers as technology leaders. *Hacettepe University Journal of Education,* 28(2):246-265.

Klein, H.K. & Myers, M.D.1999. A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS quarterly,* 23(1):67-93.

Knol, W.H.C. & Stroken, J.H.M. 2001. The diffusion and adoption of information technology in small and medium-sized enterprises through IT scenarios. *Technology Analysis Strategic Management,* 13(2):227-246.

KOSGEB. 2012. *Enhancing the competitiveness of SMEs in Turkey.* Ankara: COMCEC.

Kumar, P. & Kaur, P. 2014. An analysis of theories of diffusion. *American International Journal of Research in Humanities, Arts and Social Sciences*, 6(2):178-185.

Kushwaha, G.S. 2011. Competitive advantage through information and communication technology (ICT) enabled supply chain management practices. *International Journal of Enterprise Computing and Business Systems,* 1(2):1-13.

Kutlu, B. & Ozturan, M. 2008. The usage and adoption of IT among SMEs in Turkey: an exploratory and longitudinal study. *Journal of Information Technology Management,* 19(1):12-24.

Lara, F., Marques, D. & Devece, C.A. 2012. How to improve organisational results through knowledge management in knowledge-intensive business services. *Service Industries Journal,* 32(11):1853-1863.

Lavrakas, P. 2008. *Encyclopedia of Survey Research Methods.* 2nd ed. Ohio: Sage.

Leicester, U. 2007. *Guidance on research ethics for research involving human participants.* s.l.: East Midlands.

Lewisbeck, M.S., Bryman, A. & Liao, T.F. 2004. *The Sage Encyclopedia of Social Science Research Methods.* 1st ed. s.l.:Thousand Oaks.

Luftman, J. 2003. Assessing IT/business alignment. *Information Systems Management,* 20(4):9-15.

MacGregor, R., Vrazalic, L., Carlsson, S., Bunker, D. & Magnusson, M. 2002. The impact of business size and business type on small business investment in electronic commerce: a study of Swedish small businesses. *Australian Journal of Information Systems,* 9(2):31-39.

Marchewka, J.T., Liu, C. & Kostiwa, K. 2007. An application of the UTAUT model for understanding student perceptions using course management software. *Communications of the IIMA,* 7(2):93-104.

Marshall, B., Cardon, P., Poddar, A. & Fontenot, R. 2013. Does sample size matter in qualitative research? A review of qualitative interviews in research. *Journal of Computer Information Systems,* 54(1):11-22.

Martin, L.M. & Matlay, H. 2001. Blanket approaches to small firm ICT adoption: lessons from the UK DTI adoption ladder. *Internet Research: Electronic Networking Applications and Policy,* 11(5):399-416.

Martin, N. 2012. *SAVCA Online.* [Online]. Available at: http://www.savca.co.za/news/item.aspx?id=206. [Accessed: 11 June 2013].

Marx, W. 1993. Building the broadband society. *Harvard Business Review School Pres*s, 59-380.

McGaughey, R. & Gunasekaran, A. 2002. Information technology / information systems in 21st century manufacturing. *International Journal of Production Economics,* 75:1-6.

Medlin, B.D. 2001. *The factors that may influence a faculty member's decision to adopt electronic technologies in instruction.* Doctoral dissertation. Virginia Polytechnic Institute and State University.

Melville, N., Kraemer, K. & Gurbaxani, V. 2004. Review: information technology and organizational performance: an integrative model of IT business value. *MIS Quarterly,* 28(2):283-322.

Mercan, M. 2013. The Relationship between education expenditure and economic growth in Turkey: bounds testing approach. *European Academic Research,* 1(6):1155-1172.

Merriam, S.B. 2009. *Qualitative research: a guide to design and implementation.* 1st ed. San Francisco: Jossey-Bass.

Meyer, S.N. 2014. Not designed with us in mind: exploring the experiences and needs of adult learners at a public research university. *University of Nebraska.* pp. 1-109.

Modimogale, L. 2009. Using ICTs to become a competitive SME in South Africa. *Knowledge Management and Innovation in Advancing Economies: Analyses & Solutions*: 504-513.

Moghavvemi, S., Hakimian, F. & Feissal, T. 2012. Competitive advantages through IT innovation adoption by SMEs. *Social Technologies,* 2(1):24-39.

Mole, K.F., Ghobadian, A., O'Regan, N. & Liu, J. 2004. The use and deployment of soft process technologies within UK manufacturing SMEs: an empirical assessment using logit models. *Journal of Small Business Management,* 2(42):303-324.

Morgan, G. & Smircich, L. 1980. The case of qualitative research. *Academy of Management Review,* 5:491-500.

Moriarty, J. 2011. Qualitative methods overview. *London School of Economics and Political Science,* 1:1-43.

Morse, J.M. 1994. *Designing funded qualitative research.* 2nd ed. Thousand Oaks, CA: Sage.

Muftuoglu, T. 1998. *Turkiye'de kucuk ve orta olcekli isletmer.* 1st ed. Ankara: Turhan Kitabevi.

Mullick, J., Deppeler, J.M. & Sharma, U. 2012. Leadership practice structures in regular primary schools involved in inclusive education reform in Bangladesh. *The International Journal of Learning,* 18(11):67-82.

MUSIAD. 2014. *Buyumenin sistematigi: Bilgi teknolojilerin rolu.* Istanbul: Mavi Ofset.

Mutchnick, R. & Berg, B. 1996. *Research methods for the Social Sciences: practice and applications.* 2nd ed. USA: A Simon & Chuster Company.

Mutsaers, E.J., Zee, D.H.V. & Gierts, H. 1998. The evolution of information technology. *Information Management and Computer Security,* 6(3):115-126.

Myers, M. 1999. Investigating information systems with ethnographic research. *Communications of the AIS,* 2(23):1-20.

Myers, M. 2008. *Qualitative research in business and management.* 1st ed. Los Angeles, CA: Sage.

Ndekwa, A.G. 2014. Drivers of electronic commerce (e-commerce) among small and medium tourist enterprises (SMTEs) in Tanzania. *International Journal of Science and Research (IJSR),* 4(1):2512-2517.

Neale, B. 2013. Adding time into the mix: stakeholder ethics in qualitative longitudinal research. *Methodological Innovations Online,* 8(2):6-20.

Nguyen, T. 2009. Information technology adoption in SMEs: an integrated framework. *International Journal of Entrepreneurial Behaviour & Research,* 1(15):162-186.

Nieto, M.J. & Fernandez, Z. 2005. The role of information technology in corporate strategy of small and medium enterprises. *Journal of International Enterprises,* 3(1):251-262.

Nurrachmi, R., Abdsamad, K. & Foughali, I. 2012. The development of SMEs in Turkey. *MPRA Paper,* (46817):1-23.

O'Brien, J. 1990. *Management information systems.* 1st ed. Boston: Irwin Inc.

Ogbonna, E. & Harris, L.C. 2005. The adoption and use of information technology: a longitudinal study of a mature family firm. *New Technology, Work and Employment,* 20(1):2-18.

Olckers, C. 2011. *A multi-dimensional measure of psychological ownership for South African organisations.* University of Pretoria.

Oliveira, T. & Martins, M.F. 2011. Literature review of information technology adoption models at firm level. *The Electronic Journal Information Systems Evaluation,* 14(1):110-121.

Ololube, N.P. & Kpolovie, P.J. 2012. Approaches to conducting scientific research in education, arts and the social sciences. *Online Journal of Education Research,* 1(3):44-56.

Olumoye, M. 2013. Impact of information systems on management decision-making in the Nigerian insurance sector. *International Journal of Scientific & Technology Research,* 2(2):123-128.

Omur, G.A., Tunc, A.O. & Duren, Z. 2012. Patterns of mergers and acquisitions in Turkey in the era of new normal. *International Strategic Management Conference,* 58(8):1611-1617.

Onn, C.W. & Sorooshian, S. 2013. Mini literature analysis on information technology definition. *Information and Knowledge Management,* 3(2):139-141.

Oppong, S.H. 2013. The problem of sampling in qualitative research. *Asian Journal of Management Sciences and Education*, 2(2):202-210.

Orlikowski, W.J. & Baroudi, J.J. 1991. Studying information technology in organizations: research approaches and assumptions. *Information Systems Research,* 2(1):1-28.

Orlikowski, W.J. & Gash, D.C. 1992. *Changing frames: understanding technological change in organizations.* Sloan School of Management, Center for Information Systems Research.

Oystein, D. & Haanaes, K. 2001. Strategy tradeoffs in the knowledge and network economy. *Business Strategy Review,* 12(1):1-10.

Ozbek, Z. 2008. Kobi'lerin Turk Eknomisine Etkileri. *Uluslararasi Ekonomik Sorunlar,* 1(30):49-57.

Ozmen, T. 2012. *Turkish Newspaper.* [Online]. Available at: http://www.turkiyegazetesi.com.tr/haber/528752/40yil.aspx. [Accessed: 20 March 2013].

Ozok, A.F. 1994. *KOBI'lerde Rekabet Gucu Acisindan Verimli Calisma. In: Sanayi Kongresi Bildirileri Kitabi,* Ankara: Makina Muhendisleri Odasi.

Palvalin, M., Lonnqvist, A. & Vuolle, M. 2013. Analysing the impacts of ICT on knowledge work productivity. *Journal of Knowledge Management,* 17(4):545-557.

Patton, M.Q. 2002. *Qualitative research and evaluation methods.* 3rd ed. Thousand Oaks, CA: Sage.

Pellissier, R. & Nenzhelele, T.E. 2013. The impact of work experience of small and medium-sized enterprises owners or managers on their competitive intelligence awareness and practices. *SA Journal of Information Management,* 15(1):1-6.

Peppard, J. 2010. Unlocking the performance of the Chief Information Officer (CIO). *California Management Review,* 52(4):73-94.

Pillay, M. 2013. Ethics of empirical qualitative research in construction health and safety. *American Journal of Sociological Research,* 3(2):7-16.

Popa, I., Dobrin, C., Popescu, D. & Draghici, M. 2011. Competitive advantage in public sector. *Theoretical and Empirical Researches in Urban Management,* 6(4):60-66.

Popky, M. 1986. *Word processing and information systems.* 2nd ed. Bershire: McGraw-Hill.

Porter, C.E. & Donthu, N. 2006. Using the Technology Acceptance Model to explain how attitudes determine Internet usage: the role of perceived access barriers and demographics. *Journal of Business Research,* 59(9):999-1007.

Porter, M. 1985. *Competitive advantage,* London: The Free Press.

Premkumar, G. 2003. A meta-analysis of research on information technology implementation in small business. *Journal of Organizational Computing and Electronic Commerce,* 1(13):91-121.

Rabieai, M. & Shoaaee, H. 2014. The effects of information technology (IT) on changes in structural dimension of Maskan Bank in Tehran according to centralization and formalization. *Indian Journal of Science Research,* 1(7):223-226.

Ramsey, E., Ibbotson, P., Bell, J. & Gray, D. 2003. E-opportunities of service sector SMEs: an Irish cross-border study. *Journal of Small Business and Enterprise Development,* 10(3):250-264.

Robinson, L. 2012. *Changeology: how to enable groups, communities and societies to do things they've never done before.* 1st ed. Cambridge.

Robson, C. 2002. *Real world research: a resource for social scientists and practitioner-researchers.* 2nd ed. s.l.:Wiley.

Rogers, E.M. 1983. *The diffusion of innovations.* 3rd ed. New York: Free Press.

Rogers, E.M. 1995. *The diffusion of innovations.* 4th ed. New York: Free Press.

Rogers, E.M. 2003. *Diffusion of innovations.* 5th ed. New York: Free Press.

Ruijten, R.O. 2013. *Turkey 2013 Progress Report.* Brussel: European Commission.

Rule, P. & John, V. 2011. *Your guide to case study research.* 1st ed. Pretoria: Van Schaik.

Ryssel, R., Ritter, T. & Gemunden, H.G. 2004. The impact of information technology deployment on trust, commitment and value creation in business relationships. *Journal of Business and Industrial Marketing,* 19(3):197-207.

Sahin, I. 2006. Detailed review of Rogers' diffusion of innovation theory and educational technology-related studies based on Rogers' theory. *The Turkish Online Journal of Educational Technology,* 5(2):14-23.

Sarosa, S. & Zowghi, D. 2003. Strategy for adopting information technology for SMEs: experience in adopting email within an Indonesian furniture company. *Electronic Journal of Information Systems Evaluation,* 6(2):165-176.

Saunders, M., Lewis, P. & Thornhill, A. 2009. *Research methods for business students.* 5th ed. Harlow: Prentice Hall.

Schwandt, T.A. 1998. Constructivist, interpretivist approaches to human inquiry. London: Sage. pp. 221-259.

Scotland, J. 2012. Exploring the philosophical underpinnings of research: relating ontology and epistemology to the methodology and methods of the scientific, interpretive, and critical research paradigms. *Canadian Center of Science and Education,* 5(9):9-16.

Sein, K. & Harindranath, G. 2004. Conceptualizing the ICT artifact: toward understanding the role of ICT in national development. *The Information Society,* 20:15-24.

Sendogdu, A. & Ozturk, Y.E. 2013. Kobi'lerde inovasyon yapma egilimi ile inovasyon performans basari derecesi arasindaki iliskinin arastirilmasi. *Niğde Üniversitesi İİBF Dergisi,* 6(2):104-116.

Sentosa, I. & Kamariah, N.M. 2012. Examining a theory of planned behavior (TPB) and technology acceptance model (TAM) in Internet purchasing using structural equation modelling. *International Refereed Research Journal,* 3(2):62-77.

Simin, M.T. & Jankovic, D. 2014. Applicability of diffusion of innovation theory in organic agriculture. *Economics of Agriculture,* 61(2):517-532.

Sinha, A. 2003. *Experience of SMEs in South and South-east Asia.* Bangladesh: SouthAsia Enterprise Development Facility.

European Union. 2013. *Small Business Act (SBA) Fact Sheet: Turkey*. [Online]. Available at: http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/files/countries-sheets/2013/turkey_en.pdf [Accessed: 20 September 2013].

Sobhani, A. 2008. *Impact of information technology on productivity,* Lulea: Tarbiat Modares University.

Soini, H., Kronqvist, E.L. & Günter, H. 2011. *Epistemologies for qualitative research.* 1st ed. Tubingen: Die Deutsche Bibliothek.

Sophonthummapharn, K. 2008. *A comprehensive framework for the adoption of techno-relationship innovations.* 1st ed. Sweden: Umea University.

Stump, R.L. & Sriram, V. 1997. Employing information technology in purchasing: buyer supplier relationships and size of the supplier base. *Industrial Marketing Management,* 26(2):127-136.

Subrahmanya, B.M.H., Mathirajan, M. & Krishnaswamy, K.N. 2010. *Importance of technological innovation for SME growth.* [Online]. Available at: http://www.wider.unu.edu/publications/working-papers/2010/en_GB/wp2010-03/. [Accessed: 15 March 2014].

Szolnoki, G. & Hoffmann, D. 2013. Online, face-to-face and telephone surveys. *Proceedings.* The 7th International Conference of the Academy of Wine Business Research, St. Catharines.

Talaja, A. 2012. Testing VRIN framework: resource value and rareness as sources of competitive advantage and above average performance. *Management,* 17(2):51-64.

Tan, K., Chong, S., Lin, B. & Eze, U.C. 2009. Internet-based ICT adoption: evidence from Malaysian SMEs. *Industrial Management & Data Systems,* (109):224-244.

Tan, T.C.H. 2010. A perception-based model for technological innovation in small and medium enterprises. *Proceedings.* 18th EuropeanConference on Information Systems, Pretoria. Paper 33.

Tanwar, R. 2013. Porter's generic competitive strategies. *IOSR Journal of Business and Management,* 15(1):11-17.

Tektaş, A., Günay, N.O., Karataş, A. & Kuyucu, A.D. 2012. *KOBİ'lerde rekabet aracı olarak inovasyon: farkındalık, yatkınlık, kullanım düzeyi araştırması ve politika onerileri.* Istanbul: Bogazici Universitesi.

Thomas, D.R. 2006. A general inductive approach for analyzing qualitative evaluation data. *American Journal of Evaluation,* 27(2):237-246.

TISD (Turkish Industrial Strategy Document) 2011. *Towards EU Membership,* Ankara: Turkish Government.

Tornatzky, L. & Fleischer, M. 1990. *The process of technology innovation.* 1st ed. Massachusetts: Lexington Books.

Turkish Gazette. 2005. *National Small Business Amendment Act,* Ankara: Turkish Government.

USA Goverment. 2001. *Interpretive Guidance for the Information Technology Management Series.* United States: U.S Government.

USA Government. 2008. Clinger-Cohen Act of 1996, United States: OMB Circular.

Wahyuni, D. 2012. The research design maze: understanding paradigms, cases, methods and methodologies. *Jamar,* 10(1):69-80.

Winston, E.R. & Dologite, D. 2002. How does attribute impact IT implementation: a study of small business owners. *Journal of End User Computing,* 14(2):16-29.

Woerndl, M. & Powell, P. 2013. Exploring small firm IS adoption behaviour: from buddy to technology? *International Journal of Management Practice,* 6(1):40-57.

Wright, S., Bisson, C. & Duffy, A. 2013. Competitive intelligence and information technology adoption of SMEs in Turkey: diagnosing current performance and identifying barriers. *Journal of Intelligence Studies in Business,* 1(2):5-29.

Yang, J., Wang, L. & Sharma, G. 2012. E-Marketing strategies for SMEs in Huludao China. *International Conference on Technology and Management,* 21:99-102.

Yildirim, S. & Yuksel, P. 2015. Theoretical frameworks, methods, and procedures for conducting phenomenological studies in educational settings. *Turkish Online Journal of Qualitative Inquiry,* 6(1):1-20.

Yin, R.K. 1994. *Case study research: design and methods.* 2nd ed. Newbury Park: Sage.

Yin, R.K. 2003. *Case study research: design and methods.* 3rd ed. Thousand Oaks, CA: Sage.

Yin, R,K. 2014. *Case study research: design and methods.* 5th ed. London: Sage.

Yu, C. & Tao, Y. 2009. Understanding business-level innovation technology adoption. *Technovation,* 1(29):92-109.

Zafar, F., Ishaque, R. & Javaid, M. 2014. Use of ICT and e-commerce towards achieving competitive advantages. *European Journal of Research and Reflection in Management Sciences,* 2(1):1-10.

Zetaboards. 2015. *A map of Turkey regions.* [Online]. Available at: http://zetaboards.com. [Accessed: 26 July 2014].

Zikmund, W.G., Babin, B., Carr, J.C. & Griffin, M. 2010. *Business research methods.* 8th ed. South-Western: Cengage.

ANNEXURE 1: INTERVIEW TRANSCRIPTION

Annexure 1.1: Interviewee 1

CODE	QUESTIONS	RES 1
Q1	Name	Emel Ozbay
Q2	Company	Ak Sigorta
Q3	Job title	Manager
Q4	How long have you been working in this enterprise?	8 years
Q5	What is your educational level?	Bachelor's Degree
Q6	How much is the annual profit of your enterprise?	R25 - R50 million
Q7	How many employees does your enterprise have?	12
IQ1	Which IT systems are you using in your enterprise?	We have adopted [the] SAT Request System in our business to contact the main office immediately. The system helps us to collect, store and process our customer data and manage the finance[s] as well as our marketing strategies are more effective with this system.
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Advance level - technology is an important tool for our business. Our advanced level system provides effectiveness in the business process therefore we offer better service to our customers.
IQ3	What are the implementation areas of the chosen IT systems?	We use our IT system for all our business processes. The IT system integrates our sales, finance, data management and HR.
IQ4	How did you evaluate the IT system before you adopted it?	Competitive advantage is our main concern. We chose (our) IT system to gain a competitive advantage by providing [the] best service for our customers. We are aware that IT can be expensive but it provides effectiveness and efficiency to our business.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	Our IT system provides strong communication between staff, which increases the data processing and capacity because the information flows quickly between staff.
IQ6	How do you manage your competitiveness against your competitors?	Our IT system provides a competitive advantage among our competitiveness by integrating our processes. It also helps us to give our customers a better service. We have more time and more money to invest in our business, which allows us to focus our customer service.

CODE	QUESTIONS	RES 1
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	Not at the moment, because our system is very effective and efficient for our business.
IQ9	When you consider adopting technology/innovation, where do you get your information?	R&D companies, universities, national and international consulting companies, and licence agreement[s] are helpful when we consider innovation.
IQ10	What difficulties did you face when you considered adopting a new IT system?	Staff members had to have training for a month to use the system. Also the IT system we are using is very user-friendly so it helped a lot for us to use the system effectively.
IQ11	What do you think about innovation?	Adopting innovative approaches can be very costly if the manager/owner has limited knowledge.
IQ12	Does your enterprise have an active website?	Yes, we use our website for giving information to our customers.
IQ13	If you do not have a website, how do you manage your marketing?	We market our service through our website and social media. We believe that social media is the most effective tool nowadays.

Annexure 1.2: Interviewee 2

CODE	QUESTIONS	RES 2
Q1	Name	Didem Aydin
Q2	Company	Avivasa Emeklilik ve Hayat
Q3	Job title	Branch Manager
Q4	How long have you been working in this enterprise?	10 years
Q5	What is your educational level?	Master Degree
Q6	How much is the annual profit of your enterprise?	More than R50 million
Q7	How many employees does your enterprise have?	200
IQ1	Which IT systems are you using in your enterprise?	We use Cream software where we can collect, store and analyse our customer data nationally and manage our finance effectively.
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Medium level - we use Cream software where we can collect, store and analyse our customer data nationally and manage our finance effectively.
IQ3	What are the implementation areas of the chosen IT systems?	Our system is used for not only customer data but also for accounting and finance; we use one IT system for all our business processes.
IQ4	How did you evaluate the IT system before you adopted it?	We looked at the integration while we evaluated IT. We needed effective and efficient integration within our business processes. That was our main point.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	This IT system helps us to operate more effectively, which we believe it makes us competitive.
IQ6	How do you manage your competitiveness against your competitors?	We are a well-known company. We believe our strong points are effective operation and good customer service. As mentioned before, [the] IT system that we use helps us to spend more time to customer service and also provides us the effective operations within the company.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	We might upgrade our system in later stage, but not at the moment.

CODE	QUESTIONS	RES 2
IQ9	When you consider adopting technology/innovation, where do you get your information?	We use [a] national consulting company for our innovation purposes. They have more knowledge about Turkey than international companies. It is very important for us to know [the] local market so we can act accordingly.
IQ10	What difficulties did you face when you considered adopting a new IT system?	Cost of adoption and maintenance was a bit [of a] hassle but we were aware of what the system contributes to our business. That is why we did not have any doubt to adopt IT. The staff members also did not have any issues as they trained for [a] few weeks with the experts.
IQ11	What do you think about innovation?	Innovation is important for the business to grow, but can be costly. We always follow up with new innovation adoption option according to our budget.
IQ12	Does your enterprise have an active website?	We have been using our website actively for [a] few years. Our website provides quick communication between us and our customers by providing them a live chat with one of our consultants.
IQ13	If you do not have a website, how do you manage your marketing?	We advertise through social media and our website.

Annexure 1.3: Interviewee 3

CODE	QUESTIONS	RES 3
Q1	Name	Tarik Yildirim
Q2	Company	Dikar Sigorta
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	4 years
Q5	What is your educational level?	High school
Q6	How much is the annual profit of your enterprise?	R5 - R25 million
Q7	How many employees does your enterprise have?	5
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level - we use MO Excel software which provides us data management.
IQ3	What are the implementation areas of the chosen IT systems?	We manage our customer data with MO Excel and use old fashioned bookkeeping for managing our finance.
IQ4	How did you evaluate the IT system before you adopted it?	MO Excel is [a] well-known and cheap option.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	It provides customer data management which is enough for the business at the moment. But we are thinking to adopt [a] broader system which I believe will help us to grow and be competitive.
IQ6	How do you manage your competitiveness against your competitors?	At the moment we have no capacity to compete. We have enough customers but we are thinking to grow.
IQ7	Would you consider adopting new technology/innovation?	Yes, we are looking for cost effective software that combines our data collection, storage and process[es] with an accounting system.
IQ8	Why are you not considering the adoption of new technology/ innovation?	N/A
IQ9	When you consider adopting technology/innovation, where do you get your information?	We are in contact with universities at the moment.

CODE	QUESTIONS	RES 3
IQ10	What difficulties did you face when you considered adopting a new IT system?	Cost is the main issue to adopt IT. I never heard of any institutes that provide subsidies for innovation and technology. So we adopted MO Excel because it is cost effective.
IQ11	What do you think about innovation?	We are in the process of searching [for] information about IT system adoption. We think that will help us to grow steadily.
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	We use SMS bundles for our marketing purposes.

Annexure 1.4: Interviewee 4

CODE	QUESTIONS	RES 4
Q1	Name	Nihal Akkas
Q2	Company	Konyaalti Sigorta Aracilik Hiz. Ltd. Sti
Q3	Job title	Manager
Q4	How long have you been working in this enterprise?	7 years
Q5	What is your educational level?	Undergraduate
Q6	How much is the annual profit of your enterprise?	R2.5 - R5 million
Q7	How many employees does your enterprise have?	3
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level - We have been using MO Excel since we started our business. Although MO Excel is very limited in terms of competitiveness, it is convenient and easy to use so we are not planning to use any other IT systems.
IQ3	What are the implementation areas of the chosen IT systems?	We use MO Excel for our customer data management.
IQ4	How did you evaluate the IT system before you adopted it?	Cheaper and work well for our business.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	MO Excel does not really affect the business in term of competitive advantage, but it helps the business to run. I guess only that matters at the moment.
IQ6	How do you manage your competitiveness against your competitors?	Well, we keep our customers happy by providing them a good customer service.
IQ7	Would you consider adopting new technology/innovation?	Although adoption cost is high, maybe at a later stage will we consider adopting [a] broader and efficient system which includes all the business processes. I believe it will provide an effective operation but the owner is very resistant to change.
IQ8	Why are you not considering the adoption of new technology/innovation?	Owner is not aware [of] the contribution of IT systems.
IQ9	When you consider adopting technology/innovation, where do you get your information?	Consulting companies are the best option as far as I [am] concern[ed].

CODE	QUESTIONS	RES 4
IQ10	What difficulties did you face when you considered adopting a new IT system?	The owner appreciates what he gets from the business. He has [a] lack of knowledge about technology, therefore he is not thinking broadly. He only thinks that we do not need new technologies because they cost fortunes.
IQ11	What do you think about innovation?	Technology/innovation is needed if the company wants to grow, in my opinion. It provides better operation in the company.
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	We use SMS bundles for our marketing. So we do not see any advantages of building website.

Annexure 1.5: Interviewee 5

CODE	QUESTIONS	RES 5
Q1	Name	Burak Onal
Q2	Company	Burak Onal Sigortacilik
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	12 years
Q5	What is your educational level?	High school
Q6	How much is the annual profit of your enterprise?	R2.5 - R5 million
Q7	How many employees does your enterprise have?	4
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level - for our customer data.
IQ3	What are the implementation areas of the chosen IT systems?	We use MO Excel in order to manage our customer data and charts help us to keep track of our finance. It shows us our cost and profit.
IQ4	How did you evaluate the IT system before you adopted it?	We evaluated our system according to cost; that is why we chose to use MO Excel to track our customer data which we found that it is the cheaper option.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	MO Excel helps our business and keeps our data clean. So we are not looking for more.
IQ6	How do you manage your competitiveness against your competitors?	We are [too] small to compete. Our capacity is already full.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	MO Excel is enough for our business.
IQ9	When you consider adopting technology/innovation, where do you get your information?	I can only think of consulting companies.

CODE	QUESTIONS	RES 5
IQ10	What difficulties did you face when you considered adopting a new IT system?	We do not need advanced level technology because we are a small company and we do not have many business processes to work with. That is why we work with MO Excel and it is enough to manage our data and it does not cost us. Also we do not have enough knowledge of technology and consulting companies charge a lot of money.
IQ11	What do you think about innovation?	According to our size, innovation is not necessary.
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	We do not really need to advertise, word of mouth works for us effectively.

Annexure 1.6: Interviewee 6

CODE	QUESTIONS	RES 6
Q1	Name	Mehmet Yilmaz
Q2	Company	Mehmet Yilmaz Sig. Aracilik Hiz.
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	2 years
Q5	What is your educational level?	High school
Q6	How much is the annual profit of your enterprise?	Less than R1.25 million
Q7	How many employees does your enterprise have?	3
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level - for our customer data.
IQ3	What are the implementation areas of the chosen IT systems?	MO Excel stores our customer data and I keep track of the finance as an owner with old fashioned bookkeeping.
IQ4	How did you evaluate the IT system before you adopted it?	We chose MO Excel because it is cheap.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	At the moment, we are not really worried about gaining a competitive advantage.
IQ6	How do you manage your competitiveness against your competitors?	Our only focus is to keep our costs lowest as possible. Gaining a competitive advantage is our next stage.
IQ7	Would you consider adopting new technology/innovation?	We are looking for effective software that stores our customer data as well as helps our marketing processes. We found few [sic] software for that purpose but they are expensive so we extend our adoption time for a later stage.
IQ8	Why are you not considering the adoption of new technology/ innovation?	N/A
IQ9	When you consider adopting technology/innovation, where do you get your information?	Licence agreements and universities.

CODE	QUESTIONS	RES 6
IQ10	What difficulties did you face when you considered adopting a new IT system?	As mentioned, cost is important for us at the moment and I did not know that government provides subsidies for SMMEs to adopt IT. My friend told me about it, but he also mentioned that it is difficult to get this subsidies. So I never tried to apply. Maybe we would consider this as well.
IQ11	What do you think about innovation?	No doubt that technology and innovation plays role in competitiveness, but the cost is high and that forces SMMEs to think 10 times more to adopt.
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	Social media is a very popular tool for marketing, and it takes a lot of time plus effort. We decided to not use social media because there is no immediate response. We use SMS bundles or phone calls for our marketing purposes.

Annexure 1.7: Interviewee 7

CODE	QUESTIONS	RES 7
Q1	Name	Huseyin Cemal Kolpak
Q2	Company	Basak-Ekin Sig. Ara. Hiz
Q3	Job title	Manager
Q4	How long have you been working in this enterprise?	5 years
Q5	What is your educational level?	Undergraduate
Q6	How much is the annual profit of your enterprise?	R2.5 - R5 million
Q7	How many employees does your enterprise have?	4
IQ1	Which IT systems are you using in your enterprise?	SFS software, it is fast and user friendly which we use for our finance and customer data.
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Advance level, the system is integrated with our different business processes such as data management, finance and HR.
IQ3	What are the implementation areas of the chosen IT systems?	We control our finance situation and customer data with this system.
IQ4	How did you evaluate the IT system before you adopted it?	The system is easy to use and provides efficiency to our business even though it is expensive.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	There is an effective and immediate communication between staff because of the IT system that we work with. We do not wait for the information we need; the IT system provides quick data flow as well as up to date data which gives us a chance to give our customers better and immediate service.
IQ6	How do you manage your competitiveness against your competitors?	Matter of the fact that I believe competitive advantage provides significant value to our customers, because it forces our business to keep up in the sector by adding value to our services.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	Because we already have [an] effective IT system.
IQ9	When you consider adopting technology/innovation, where do you get your information?	We used R&D companies and also licence agreements are important.

CODE	QUESTIONS	RES 7
IQ10	What difficulties did you face when you considered adopting a new IT system?	I would say that the training of users was very important, because IT systems can be complex at the beginning.
IQ11	What do you think about innovation?	Technology/innovation is a must for the company who wants to be competitive and grow.
IQ12	Does your enterprise have an active website?	Yes, we have an active website for 5 years to reach our customers and update information.
IQ13	If you do not have a website, how do you manage your marketing?	We use social media and our website.

Annexure 1.8: Interviewee 8

CODE	QUESTIONS	RES 8
Q1	Name	Yakup Eksi
Q2	Company	Yakup Eksi Sigortacilik
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	4 years
Q5	What is your educational level?	High school
Q6	How much is the annual profit of your enterprise?	Less than R1.25 million
Q7	How many employees does your enterprise have?	5
IQ1	Which IT systems are you using in your enterprise?	We use free insurance data software (Polixir) that helps to store our customer data.
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Medium level - we use free insurance data software that helps to store our customer data.
IQ3	What are the implementation areas of the chosen IT systems?	We use [an] IT system to store customer data and for our finance process we have an accountant to sort our financial status
IQ4	How did you evaluate the IT system before you adopted it?	The IT system was evaluated according to its ease usage and its cost.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	The IT system we are using provides us effective operation within the business and accordingly we provide efficient service to our customers.
IQ6	How do you manage your competitiveness against your competitors?	As mentioned above, we provide efficient customer service and we believe that it is our strong point at the moment.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	Our IT system is enough for our business. It works well and helps us to gain competitive advantage.
IQ9	When you consider adopting technology/innovation, where do you get your information?	Consulting companies.
IQ10	What difficulties did you face when you considered adopting a new IT system?	Because we are using free software, it is not as broad as advanced software but it works well for our business.

CODE	QUESTIONS	RES 8
IQ11	What do you think about innovation?	If you have the budget then innovation/technology is important for the business and also it depends on the capacity of the company.
IQ12	Does your enterprise have an active website?	Yes, we have an active website to reach our customers for marketing purposes.
IQ13	If you do not have a website, how do you manage your marketing?	Our marketing strategy is to get customers from our website and engage them through social media platforms.

Annexure 1.9: Interviewee 9

CODE	QUESTIONS	RES 9
Q1	Name	Arif Tasci
Q2	Company	A.H.T Sigorta
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	12 years
Q5	What is your educational level?	High school
Q6	How much is the annual profit of your enterprise?	R5 - R25 million
Q7	How many employees does your enterprise have?	4
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level - to keep track of our customer data.
IQ3	What are the implementation areas of the chosen IT systems?	We chose MO Excel because it provides us data management.
IQ4	How did you evaluate the IT system before you adopted it?	MO Excel is affordable and easy to use for our staff members.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	N/A
IQ6	How do you manage your competitiveness against your competitors?	It is not necessary to compete with stronger competitors as we have already fulfilled our business capacity. Our IT system is enough for our business environment.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	Adoption is expensive for us.
IQ9	When you consider adopting technology/innovation, where do you get your information?	If we consider innovation, we would choose international and national companies where we can compare the technologies.
IQ10	What difficulties did you face when you considered adopting a new IT system?	IT adoption costs too much and we do not know where to look for information about any financial loans. We only know that the banks provide loans with high interest rates.

CODE	QUESTIONS	RES 9
IQ11	What do you think about innovation?	I must admit that I do not have knowledge about innovation; I only heard that it does cost a lot of money, time and it is not suitable for small businesses. So I never paid attention to innovation.
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	We tried to use [a] few social media channels but it was not necessarily effective for our marketing and takes so much effort to operate it. So we decided to use only SMS bundles that we get monthly.

Annexure 1.10: Interviewee 10

CODE	QUESTIONS	RES 10
Q1	Name	Yesim Durak
Q2	Company	Yesim Durak Sigorta
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	9 years
Q5	What is your educational level?	Undergraduate
Q6	How much is the annual profit of your enterprise?	R2.5 - R5 million
Q7	How many employees does your enterprise have?	4
IQ1	Which IT systems are you using in your enterprise?	SAYSIS management system
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Advanced level - we consider technology as an effective tool to manage our business. As we are using advanced level software for our different business processes, we have an effective management system that helps us to provide better and quick service than our competitors.
IQ3	What are the implementation areas of the chosen IT systems?	Our system integrates our different business process, for example, it generates financial statement[s] according to our sales and claims or a sales report, etc.
IQ4	How did you evaluate the IT system before you adopted it?	For us, competitive advantage is important. So we evaluated our system in order to its benefits to give us a competitive advantage. This system allows us to provide effective customer service. It also allows us to have efficient communication between staff.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	The IT system we are using provides us effective operation within the business and accordingly we provide efficient service to our customers
IQ6	How do you manage your competitiveness against your competitors?	Competitive advantage improves the dynamic structure of markets, hence eliminating poor and ineffective enterprises in the market.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	Our system is one of the best systems in the market now. We do not need more. But maybe in [a] few years we would think to upgrade.

CODE	QUESTIONS	RES 10
IQ9	When you consider adopting technology/innovation, where do you get your information?	We used national consulting companies as we believe they know the Turkish market.
IQ10	What difficulties did you face when you considered adopting a new IT system?	It was [a] long process to find the appropriate IT system for our business. But other than that we did not have difficulties.
IQ11	What do you think about innovation?	Innovation is [an] important tool for companies but most of the companies are not aware of the contribution of innovation/technology.
IQ12	Does your enterprise have an active website?	Yes, our website is integrated with our IT system. We directly get our data from our website.
IQ13	If you do not have a website, how do you manage your marketing?	We integrated our social media with our website so it is very interactive. We give online support to our customers too.

Annexure 1.11: Interviewee 11

CODE	QUESTIONS	RES 11
Q1	Name	Ali Aykol
Q2	Company	Ali Aykol Sigorta
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	2 years
Q5	What is your educational level?	High School
Q6	How much is the annual profit of your enterprise?	Less than R1.25 million
Q7	How many employees does your enterprise have?	2
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level - we have basic processes in our business such as managing customer data. We use IT systems only when we have new customers or when current customers claim insurance and we use MO Excel for these purposes.
IQ3	What are the implementation areas of the chosen IT systems?	We manage our customer data with MO Excel and use old fashioned bookkeeping for managing our finance.
IQ4	How did you evaluate the IT system before you adopted it?	MO Excel is cheap and enough for our business.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	N/A
IQ6	How do you manage your competitiveness against your competitors?	We are small company, it is not necessary to compete with strong competitors.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	Because we do not need new IT systems; MO Excel works for our business purposes.
IQ9	When you consider adopting technology/innovation, where do you get your information?	Consulting companies might be the best option I guess.

CODE	QUESTIONS	RES 11
IQ10	What difficulties did you face when you considered adopting a new IT system?	As an owner of the business, I do not have enough knowledge of finance and accounting so we have an accountant who manages our financial condition. I did search for [a] new IT system for my business. There are [a] few systems that I was interested to adopt but they cost a lot. So I do not think it is necessary for such a small business. Our cost is our major priority, so we have to keep it low.
IQ11	What do you think about innovation?	New technology or innovation costs a lot of money plus we do not have qualified staff to operate it. Therefore, we are not interested to spend money on technology and the staff.
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	We are such a small enterprise; we cannot afford to operate a website.

Annexure 1.12: Interviewee 12

CODE	QUESTIONS	RES 12
Q1	Name	Mumine Sekerci
Q2	Company	Hakan Altun Sigorta
Q3	Job title	Manager
Q4	How long have you been working in this enterprise?	1 year
Q5	What is your educational level?	Undergraduate
Q6	How much is the annual profit of your enterprise?	R1.25 - R2.5 million
Q7	How many employees does your enterprise have?	1
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level
IQ3	What are the implementation areas of the chosen IT systems?	We use MO Excel to handle our customer data only.
IQ4	How did you evaluate the IT system before you adopted it?	I'm not sure what [the] owner thought, but I guess because MO Excel is [a] cheap option and easy to use, he chose that.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	N/A
IQ6	How do you manage your competitiveness against your competitors?	According to the owner, our business is doing better than most of the others so we do not need to gain a competitive advantage.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	I am the only employee at the moment, and we are still new in the market. Only thing is important at the moment is to keep the costs at the lowest stage.
IQ9	When you consider adopting technology/innovation, where do you get your information?	I would go to consulting companies.
IQ10	What difficulties did you face when you considered adopting a new IT system?	Owners are not being able to distinguish between quality data and useless information. So it is difficult to convince them to adopt technology.

CODE	QUESTIONS	RES 12
IQ11	What do you think about innovation?	The owners do not consider taking risks by adopting innovation because they have [a] lack of knowledge and they think it is time consuming.
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	SMS bundles only.

Annexure 1.13: Interviewee 13

CODE	QUESTIONS	RES 13
Q1	Name	Hakan Akca
Q2	Company	Aker Sigorta
Q3	Job title	Manager
Q4	How long have you been working in this enterprise?	4 years
Q5	What is your educational level?	Undergraduate
Q6	How much is the annual profit of your enterprise?	R1.25 - R2.5 million
Q7	How many employees does your enterprise have?	3
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level
IQ3	What are the implementation areas of the chosen IT systems?	To store customers data and manage our finance[s].
IQ4	How did you evaluate the IT system before you adopted it?	MO Excel is [the] cheapest option that we could get.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	I am aware that MO Excel is not the best option to gain a competitive advantage, but risk free operation is important for our owner. IT is risky to adopt and maintain.
IQ6	How do you manage your competitiveness against your competitors?	Owner is happy with the business performance. We have enough customers and he believes there is no need to compete.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/innovation?	As I mentioned, IT/innovation adoption is risky and costs a lot.
IQ9	When you consider adopting technology/innovation, where do you get your information?	Consulting companies.
IQ10	What difficulties did you face when you considered adopting a new IT system?	Owner's motivation, attitude and ability dominate business' knowledge which means that if the owner does not build an IT acceptance culture in the business then it will be difficult for the staff to adopt IT systems

CODE	QUESTIONS	RES 13
IQ11	What do you think about innovation?	Adopting innovative approaches can be very costly if the manager/owner has limited knowledge
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	We advertise on Google Adwords and use SMS bundles.

Annexure 1.14: Interviewee 14

CODE	QUESTIONS	RES 14
Q1	Name	Hasan Altiner
Q2	Company	Altiner Sigorta
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	8 years
Q5	What is your educational level?	High school
Q6	How much is the annual profit of your enterprise?	R2.5 - R5 million
Q7	How many employees does your enterprise have?	2
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level
IQ3	What are the implementation areas of the chosen IT systems?	To store customer data.
IQ4	How did you evaluate the IT system before you adopted it?	MO Excel is cheap and manageable.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	N/A
IQ6	How do you manage your competitiveness against your competitors?	We do not see the point of competing with strong companies, because we have enough customers for our company.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	MO Excel works well for our business and it is cheap.
IQ9	When you consider adopting technology/innovation, where do you get your information?	Probably consulting companies are the best option if technology is concerned.
IQ10	What difficulties did you face when you considered adopting a new IT system?	I heard that there is subsidies [sic] available for SMMEs which is provided by KOSGEB. Therefore I did try to apply for few times but they said they already fulfilled their capacity. So I do not think it is possible to get money out of government and IT adoption is not cost effective.

CODE	QUESTIONS	RES 14
IQ11	What do you think about innovation?	It is expensive to adopt and maintenance.
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	We get phone call bundles (landline) from Turkish Telecommunication Offices every month. Bundles become very [sic] cheaper, so we have limitless minutes per month to interact with our customers. SMS bundles are used for attracting new customers as we advertise via SMS's. We can send hundreds [of] SMS's in a minute. If the customer responds to our SMS's, we [will] call them and explain how our services work. We made a decision to not use social media instead, because it needs a lot of updates and effort. Therefore, it is more expensive to operate it.

Annexure 1.15: Interviewee 15

CODE	QUESTIONS	RES 15
Q1	Name	Tahir Kara
Q2	Company	SBS Sigorta
Q3	Job title	Manager
Q4	How long have you been working in this enterprise?	3 years
Q5	What is your educational level?	Undergraduate
Q6	How much is the annual profit of your enterprise?	R1.25 - R2.5 million
Q7	How many employees does your enterprise have?	4
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level
IQ3	What are the implementation areas of the chosen IT systems?	Customer data management.
IQ4	How did you evaluate the IT system before you adopted it?	IT is expensive and to adopt [the] right IT system you need knowledge. MO Excel is the easy and affordable choice.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	N/A
IQ6	How do you manage your competitiveness against your competitors?	We are in [a] disadvantageous position amongst large enterprises in terms of competitiveness. We do not have enough budget and knowledge to create a competitive advantage.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	It is expensive and we do not have the budget for it.
IQ9	When you consider adopting technology/innovation, where do you get your information?	Probably consulting agencies.

CODE	QUESTIONS	RES 15
IQ10	What difficulties did you face when you considered adopting a new IT system?	The owner is convinced that technology is not needed for small businesses, because our business process is very simple and it only includes data management. Also the owner does not know if the collected data is quality data or useless information. Because the owner has [a] lack of knowledge about IT systems, that makes it difficult for them to make confident decisions about adoption.
IQ11	What do you think about innovation?	When innovation was concerned the owner stated that, "…to adopt innovation we need qualified staff, time, and more importantly, budget for it. As a small business we do not have these requirements." The decision was made, so he is not interested to adopt any innovation.
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	We are using emails and SMS bundles to reach our customers so we believe we don't need a website.

Annexure 1.16: Interviewee 16

CODE	QUESTIONS	RES 16
Q1	Name	Didem Sarikamis
Q2	Company	Pamfilya Sigorta
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	2 years
Q5	What is your educational level?	High school
Q6	How much is the annual profit of your enterprise?	R 1.25 - R 2.5 million
Q7	How many employees does your enterprise have?	3
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level - we are using very basic levels of IT systems, which is MO Excel. It helps us to manage our customer data. We believe that we, as a small business, do not need an advanced level IT system.
IQ3	What are the implementation areas of the chosen IT systems?	We use MO Excel to handle our customer data and we use charts for accounting purposes.
IQ4	How did you evaluate the IT system before you adopted it?	IT adoption can be very risky, so we did not want to take a risk and spend too much money on IT; that is why we chose MO Excel to work with. It is easy and cheap.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	N/A
IQ6	How do you manage your competitiveness against your competitors?	We are a small company with three employees. Basically we are very weak in comparison with larger companies. We have regular customers and they are keeping us busy so we do not really look for new customers or compete to get new customers. Our marketing strategy is by word of mouth, as long as we keep our regular customers happy, they bring more customers.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	We do not need to take risks and spend money. MO Excel is working for us and that is enough.

CODE	QUESTIONS	RES 16
IQ9	When you consider adopting technology/innovation, where do you get your information?	First thing I can think of is the consulting companies.
IQ10	What difficulties did you face when you considered adopting a new IT system?	IT systems just cost money in our business area because we do not need complex and fancy technologies to operate our business. Only need [a] simple database software product for our customer data.
IQ11	What do you think about innovation?	It is [an] effective tool but expensive to adopt and need to have qualified staff to use it.
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	We get SMS bundles and data every month, and use them for our marketing.

Annexure 1.17: Interviewee 17

CODE	QUESTIONS	RES 17
Q1	Name	Sadullah Topuz
Q2	Company	Sadullah Topuz Sigorta
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	10 years
Q5	What is your educational level?	High school
Q6	How much is the annual profit of your enterprise?	R5 - R25 million
Q7	How many employees does your enterprise have?	4
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level - to handle our customer data.
IQ3	What are the implementation areas of the chosen IT systems?	We use MO Excel to store customer data and for our finance process we have an accountant to sort our financial status.
IQ4	How did you evaluate the IT system before you adopted it?	IT adoption can be very risky, so we did not want to take a risk and spend too much money on IT; that is why we chose MO Excel to work with. It is easy and cheap.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	Our business is doing enough for us so there is no necessity to gain a competitive advantage
IQ6	How do you manage your competitiveness against your competitors?	We are in the market for [a] long time and kind of well-known.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	When I started with the business 8 years ago, I have planned to expand my business bigger than now, but it didn't happen. I started with one employee and still have one. So about competing with others, we are micro-sized enterprises and getting enough customers for our business to run. I do not see the point to change/expand the business while I get enough from it. Change is always risky.

CODE	QUESTIONS	RES 17
IQ9	When you consider adopting technology/innovation, where do you get your information?	National consultants. I think that will be cheaper than going to international consultants.
IQ10	What difficulties did you face when you considered adopting a new IT system?	MO Excel keeps our data management effectively. Due to our size, we do not think to adopt new technologies
IQ11	What do you think about innovation?	It depends on the company's capacity; we are small so for us [it] is unnecessary to adopt innovation/technology.
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	We used social media for few months but we could not handle the effort and time consuming [sic]. So we only use SMS bundles for our marketing.

Annexure 1.18: Interviewee 18

CODE	QUESTIONS	RES 18
Q1	Name	Cilem Demirel
Q2	Company	Acar Sigorta
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	5 years
Q5	What is your educational level?	High school
Q6	How much is the annual profit of your enterprise?	R2.5 - R5 million
Q7	How many employees does your enterprise have?	2
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level - we tried to adopt [an] advanced level IT system in our business, but it did not work how we expected. It was very complex for the staff. Then we just continued to use MO Excel.
IQ3	What are the implementation areas of the chosen IT systems?	We store our customer data, and process them through MO Excel.
IQ4	How did you evaluate the IT system before you adopted it?	We adopted [a] broader IT system to manage our business process, but it was difficult to use and expensive to maintain that system. That is why we chose MO Excel; it is cheap and easy to use.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	I cannot say we are the best competitor in the market but we are [a] small business so even though we tried to adopt IT system, it is not for us to handle. We already have enough customers to handle.
IQ6	How do you manage your competitiveness against your competitors?	No need for competitiveness, we make enough profit to run the business.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	Not necessary at the moment, as we tried before. MO Excel is the best tool for us.
IQ9	When you consider adopting technology/innovation, where do you get your information?	The consulting companies are [the] best option when innovation is considered.

CODE	QUESTIONS	RES 18
IQ10	What difficulties did you face when you considered adopting a new IT system?	We adopted an IT system that can integrate our business processes together. It was efficient in terms of integration, but the cost of the maintenance was very high and more importantly, the staff had to have training but they did not perform well with the training because the IT system is complex and our staff have [a] lack of technical knowledge. We made [the] decision to change back to our old system using MO Excel.
IQ11	What do you think about innovation?	Innovation definitely needs qualified users and knowledge as well as budget.
IQ12	Does your enterprise have an active website?	We are planning to develop a website and use our website and social media channels to promote our services.
IQ13	If you do not have a website, how do you manage your marketing?	At the moment we use SMS bundles and phone calls.

Annexure 1.19: Interviewee 19

CODE	QUESTIONS	RES 19
Q1	Name	Elif Gungor
Q2	Company	Adalin Sigorta
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	7 years
Q5	What is your educational level?	High school
Q6	How much is the annual profit of your enterprise?	R2.5 - R5 million
Q7	How many employees does your enterprise have?	2
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level - handling our customer data with.
IQ3	What are the implementation areas of the chosen IT systems?	To store customers data.
IQ4	How did you evaluate the IT system before you adopted it?	We are not thinking to adopt any IT software.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	N/A
IQ6	How do you manage your competitiveness against your competitors?	We are happy with our fulfilled capacity. We are not competing with anyone.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	Lack of knowledge and budget.
IQ9	When you consider adopting technology/innovation, where do you get your information?	Consulting agencies.
IQ10	What difficulties did you face when you considered adopting a new IT system?	As an owner, I am not interested in technology, because I think that adopting technology is very costly. I do not attempt to give any consideration about it.

CODE	QUESTIONS	RES 19
IQ11	What do you think about innovation?	We are [a] small enterprise; we cannot afford to invest in innovation which we believe that it has high cost in operation and maintenance.
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	No, we are not keen to get a website because we are using SMS bundles which become cheaper.

Annexure 1.20: Interviewee 20

CODE	QUESTIONS	RES 20
Q1	Name	Kenan Yildiz
Q2	Company	Yildiz Sigorta
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	9 years
Q5	What is your educational level?	High School
Q6	How much is the annual profit of your enterprise?	R2.5 - R5 million
Q7	How many employees does your enterprise have?	5
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level – we adopted [a] medium level IT system before.
IQ3	What are the implementation areas of the chosen IT systems?	We use it to store and process for our customer data.
IQ4	How did you evaluate the IT system before you adopted it?	The IT system that we adopted was not user friendly and staff do not have IT knowledge. Although we had training sessions for our staff, they still made a lot of mistakes with the data. Instead of spending more money on staff and the IT system, we made a decision to use our old system which is MO Excel.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	MO Excel does not really provide a competitive advantage. Only advantage of using MO Excel, it is affordable and easy to use.
IQ6	How do you manage your competitiveness against your competitors?	We do not really compete with anyone. We have [a] limited budget and we are small. As mentioned, we tried to adopt IT but MO Excel works better for us even though it does not help to gain a competitive advantage, we still make good profit.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	We tried before.
IQ9	When you consider adopting technology/innovation, where do you get your information?	We used [a] national technology consultant.

CODE	QUESTIONS	RES 20
IQ10	What difficulties did you face when you considered adopting a new IT system?	Lack of knowledge and qualified staff. IT adoption and maintenance cost a lot.
IQ11	What do you think about innovation?	Innovation is too much hassle and very expensive to handle. Our budget is only enough for developing a website.
IQ12	Does your enterprise have an active website?	We are in development of our website and it will be integrated with social media as well.
IQ13	If you do not have a website, how do you manage your marketing?	If we have discounts or new rules, we put up that information to our website. At the moment we call our customers.

CODE	QUESTIONS	RES 21
Q1	Name	Ahmet Kara
Q2	Company	Ask Sigorta
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	11 years
Q5	What is your educational level?	High School
Q6	How much is the annual profit of your enterprise?	R2.5 - R5 million
Q7	How many employees does your enterprise have?	4
IQ1	Which IT systems are you using in your enterprise?	We use free software (Sigorta CRM) for our customer data and integrated accounting system which we found on [the] Internet for free.
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Medium level - we used MO Excel for five years. It was very basic and not enough for our business processes. So we adopted [a] more medium level IT system to manage our all business processes together to provide better service as well as to gain a competitive advantage.
IQ3	What are the implementation areas of the chosen IT systems?	We use the system to integrate our customer data management and finance as well as all the other business processes we have.
IQ4	How did you evaluate the IT system before you adopted it?	We evaluated our IT system according to its efficiency and also [to] the cost. It is very easy to use for our staff and it is manageable for our company.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	It gives us better communication between staff and provides effective data flow as well as financial predictions.
IQ6	How do you manage your competitiveness against your competitors?	We are not interested to compete with other businesses. We appreciate what we have.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	We have a good IT system which works very well for us at the moment.
IQ9	When you consider adopting technology/innovation, where do you get your information?	Consulting agencies.

CODE	QUESTIONS	RES 21
IQ10	What difficulties did you face when you considered adopting a new IT system?	Basically, the IT system we adopted is very user-friendly and free, so it has not given us any difficulties.
IQ11	What do you think about innovation?	After using MO Excel when we adopted Sigorta CRM, the difference was visible. We are more productive and making more profit because we operate more effectively.
IQ12	Does your enterprise have an active website?	Yes we have an active website to reach our customers.
IQ13	If you do not have a website, how do you manage your marketing?	We do our marketing through our website.

Annexure 1.22: Interviewee 22

CODE	QUESTIONS	RES 22
Q1	Name	Secil Gungoren
Q2	Company	Gungoren Sigorta
Q3	Job title	Manager
Q4	How long have you been working in this enterprise?	3 years
Q5	What is your educational level?	Undergraduate
Q6	How much is the annual profit of your enterprise?	R2.5 - R5 million
Q7	How many employees does your enterprise have?	7
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level - storing our customer data only.
IQ3	What are the implementation areas of the chosen IT systems?	We store our customer data with MO Excel and the owner uses old fashioned bookkeeping for managing our finance.
IQ4	How did you evaluate the IT system before you adopted it?	We adopted an IT system to manage our business effectively, but it was expensive for our company. We could not manage to use it efficiently as well, so we have started to use MO Excel again.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	We have a good number of clients; we believe that good customer care is our competitive advantage. So we do not need IT for it.
IQ6	How do you manage your competitiveness against your competitors?	As mentioned above.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	We have the system we need and adoption costs are high. We believe that there is no benefit for us to adopt new technology or innovation.
IQ9	When you consider adopting technology/innovation, where do you get your information?	Consultants.

CODE	QUESTIONS	RES 22
IQ10	What difficulties did you face when you considered adopting a new IT system?	Owner's capability and knowledge prevent effective IT usage and evaluation. We do not know where to look for information about IT adoption and cannot find relevant options of different IT systems that we can consider to adopt. The owners make the last decision, so if they do not have any knowledge of IT adoption then it is useless to expect IT adoption decisions from them.
IQ11	What do you think about innovation?	For me innovation is essential for business, but it needs long term plan[ning] and [a] budget.
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	We contact with our customers via phone calls if it is necessary and send them SMS if we do promotions. The social media and website operations are complex to use and costly to maintain. Bundles are more effective as we get immediate responses from our customers.

Annexure 1.23: Interviewee 23

CODE	QUESTIONS	RES 23
Q1	Name	Sedat Yurtseven
Q2	Company	Vatan Sigorta
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	7 years
Q5	What is your educational level?	Undergraduate
Q6	How much is the annual profit of your enterprise?	R2.5 - R5 million
Q7	How many employees does your enterprise have?	9
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level - to handle our customers and their data.
IQ3	What are the implementation areas of the chosen IT systems?	MO Excel to store our customer data and I use old fashioned bookkeeping for managing my finance.
IQ4	How did you evaluate the IT system before you adopted it?	IT is expensive for us to invest. The adoption maintenance cost is high as well.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	N/A
IQ6	How do you manage your competitiveness against your competitors?	For us, IT is not an important tool because we have [a] small working capacity.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/ innovation?	The change is risky while our current IT system (MO Excel) provides us everything we need. It is very expensive to adopt a new technology and employ qualified employees to use the complex IT systems.
IQ9	When you consider adopting technology/innovation, where do you get your information?	I would go to the national consulting companies.

CODE	QUESTIONS	RES 23
IQ10	What difficulties did you face when you considered adopting a new IT system?	We are [a] small enterprise with not many business processes and we do not have enough budget for IT investment. We believe that we do not need to have an advanced level [of] technology as we only use the IT system for managing our customer data.
IQ11	What do you think about innovation?	The Turkish economy is very unstable and it is risky to invest a big amount of money on innovative approaches.
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	No, we decided to get SMS bundles instead, because we believe they work better.

Annexure 1.24: Interviewee 24

CODE	QUESTIONS	RES 24
Q1	Name	Hulya Soylu
Q2	Company	Ferah Sigorta
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	10 years
Q5	What is your educational level?	High School
Q6	How much is the annual profit of your enterprise?	R2.5 - R5 million
Q7	How many employees does your enterprise have?	10
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level
IQ3	What are the implementation areas of the chosen IT systems?	Excel helps us to store our customer data and keep track of our finance the traditional accounting way.
IQ4	How did you evaluate the IT system before you adopted it?	Investing in IT development is risky for us, as a small business, and we do not want to take that risk to adopt advanced level IT systems. MO Excel is not the best software product but it helps our business to operate and it is risk free.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	As I mentioned, IT adoption is risky. Maybe MO Excel is not for competitiveness, as most of the other companies use it as well, but as a small business we do not need to gain a competitive advantage I believe.
IQ6	How do you manage your competitiveness against your competitors?	We have enough customers to run the business, we don't have the capacity for more.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/innovation?	We cannot afford new technology.
IQ9	When you consider adopting technology/innovation, where do you get your information?	National consulting company.

CODE	QUESTIONS	RES 24
IQ10	What difficulties did you face when you considered adopting a new IT system?	IT adoption costs a lot and we are very small enterprises so we do not believe we can apply for a subsidy according to adopt innovation. We also heard that it is very difficult to apply for this kind of loan. That is why we never think of considering applying.
IQ11	What do you think about innovation?	It is out of our capacity and budget.
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	We are not interested in developing [a] website. We are using SMS bundles and phone calls for our marketing and reaching our customer, therefore no website needed.

Annexure 1.25: Interviewee 25

CODE	QUESTIONS	RES 25
Q1	Name	Deniz Ozge Bertan
Q2	Company	Menekse Sigorta
Q3	Job title	Owner
Q4	How long have you been working in this enterprise?	5 years
Q5	What is your educational level?	High School
Q6	How much is the annual profit of your enterprise?	R1.25 - R2.5 million
Q7	How many employees does your enterprise have?	2
IQ1	Which IT systems are you using in your enterprise?	MO Excel
IQ2	What is the usage level of your IT systems that you use in your enterprise?	Low level
IQ3	What are the implementation areas of the chosen IT systems?	We store our customer data with MO Excel and use old fashioned bookkeeping for managing our finance.
IQ4	How did you evaluate the IT system before you adopted it?	We are a small company and MO Excel is enough for our business to keep our data. We chose the MO Excel because it is affordable for us.
IQ5	How does the chosen IT system affect the business in terms of competitive advantage?	We are not looking for competitiveness, we have a system that helps us to do our data management and we are happy with it.
IQ6	How do you manage your competitiveness against your competitors?	We have very small capacity and we are [sic] already fulfilled our capacity. No need for competition.
IQ7	Would you consider adopting new technology/innovation?	No
IQ8	Why are you not considering the adoption of new technology/innovation?	Our IT system (MO Excel) works perfectly fine for us, so why [do] we need to change it. Change is always risky and we do not bother to take risks as we have [a] smooth running business at the moment.
IQ9	When you consider adopting technology/innovation, where do you get your information?	I believe consulting companies would work well.

CODE	QUESTIONS	RES 25
IQ10	What difficulties did you face when you considered adopting a new IT system?	MO Excel keeps our data management effectively. Due to our size, we do not think to adopt new technologies.
IQ11	What do you think about innovation?	We cannot afford it.
IQ12	Does your enterprise have an active website?	No
IQ13	If you do not have a website, how do you manage your marketing?	We use SMS bundles for marketing purposes.

ANNEXURE 2: New technology adoption rates in the Global Competitiveness Report

9.02 Firm-level technology absorption

To what extent do businesses in your country absorb new technology? [1 = not at all; 7 = aggressively absorb] | 2011–12 weighted average

RANK	COUNTRY/ECONOMY	VALUE
1	Sweden	6.3
2	Iceland	6.3
3	Switzerland	6.2
4	Japan	6.2
5	Israel	6.2
6	Finland	6.1
7	Hong Kong SAR	6.0
8	Singapore	6.0
9	Qatar	6.0
10	Norway	6.0
11	Korea, Rep.	6.0
12	United Arab Emirates	6.0
13	Austria	5.9
14	United States	5.9
15	Australia	5.9
16	Germany	5.9
17	New Zealand	5.9
18	Denmark	5.8
19	Taiwan, China	5.8
20	Saudi Arabia	5.8
21	Bahrain	5.8
22	Netherlands	5.8
23	United Kingdom	5.7
24	Luxembourg	5.6
25	Panama	5.6
26	Puerto Rico	5.6
27	Portugal	5.6
28	Jordan	5.6
29	Malaysia	5.6
30	Canada	5.6
31	Belgium	5.6
32	Malta	5.5
33	Ireland	5.5
34	Estonia	5.5
35	France	5.5
36	Senegal	5.5
37	Barbados	5.4
38	South Africa	5.4
39	Turkey	5.3
40	India	5.2
41	Kuwait	5.2