

THE FACTORS THAT AFFECT THE COMPANY'S B2B OVERALL
USE THROUGHOUT THE B2B PORTAL TRANSACTIONS
AND
A SURVEY IN TURKEY

FAZLI YILDIRIM

IŞIK UNIVERSITY

2007

THE FACTORS THAT AFFECT THE COMPANY'S B2B OVERALL
USE THROUGHOUT THE B2B PORTAL TRANSACTIONS
AND
A SURVEY IN TURKEY

FAZLI YILDIRIM

Submitted to the Graduate School of Social Sciences
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy
in
Management

IŞIK UNIVERSITY

2007

**THE FACTORS THAT AFFECT THE COMPANY'S B2B OVERALL USE
THROUGHOUT THE B2B PORTAL TRANSACTIONS
AND
A SURVEY IN TURKEY**

Abstract

This study concentrates on B2B (Business to Business) electronic commerce which is used by many companies in Turkey for purchasing and selling goods over the internet by connecting B2B portals. It is known that during the integration period of B2B e-commerce companies face difficulties and trade-offs that will discourage their adoption.

This research's main aim is to look at the factors which affect B2B overall use and measure the drivers that affect the B2B adoption process for companies in Turkey. Throughout the research, it is found out that there are varieties of factors and models related to B2B e-commerce and every model is trying to focus on B2B with different aspects. This means that, there is no unique research model which covers all factors' effectiveness that is related to B2B overall use. While shaping the research model, the study has benefited from the surveys (mentioned in literature review) which are proved hypotheses that are associated with the dependent variable. The research method is based on quantitative analysis which generally searches information about the factors' effectiveness related to the company's B2B overall use in Turkey. During the empirical analysis, factors are categorized and measured according to their effectiveness for companies in Turkey and then questionnaire study has examined the factors' effectiveness related to the adoption success of B2B commerce by using statistical analysis methods.

Research results show that perceived benefits of B2B and companies' managerial factors influence the companies' B2B overall use positively. Addition to prior researches, B2B portal factors also affect the companies' B2B overall use positively. The information about the factors that is effective for B2B overall use provides considerable educational framework for company managers, B2B integration consultant companies and B2B portals for increasing the level of B2B integration.

**İŞLETMELER ARASI TİCARETTE B2B PORTAL KULLANIMINI
ETKİLEYEN FAKTÖRLER
VE
TÜRKİYE'DE BİR ARAŞTIRMA**

Özet

Bu çalışma, Türkiye'de bulunan birçok firmanın internet üzerinden portallara bağlanarak mal alımını ve satımını gerçekleştirdiği şirketler arası elektronik ticaret üzerine odaklanmaktadır. Bilindiği üzere, şirketler arası elektronik ticaret entegrasyonu sürecinde şirketler, adaptasyonu zorlaştırıcı zorluklar ve takaslar ile karşılaşmaktadır.

Araştırmanın esas amacını şirketler arası elektronik ticaret kullanımına etki eden faktörleri bulma ve Türkiye'deki şirketlerin uyum sürecine etki eden faktörleri ölçmektir. Araştırma sürecinde şirketler arası elektronik ticaretle ilgili çeşitli faktörler ve modeller olduğu bulunmuş, her bir modelin şirketler arası elektronik ticarete farklı açıdan odaklandığı tespit edilmiştir. Özetle, şirketler arası elektronik ticaret ile ilgili olarak bütün faktörleri kapsayan özgün bir araştırma modeli bulunmamaktadır. Araştırma modelini oluştururken, bağımlı değişkenimiz olan şirketler arası elektronik ticaret kullanımı ile alakalı, ispatlanmış varsayımlara dayalı çalışmalardan (kaynak taramasında bahsedilen) yararlanılmıştır. Araştırma yöntemi olarak kantitatif analiz yöntemi kullanarak, genelde Türkiye'de bulunan firmaların şirketler arası elektronik ticaret kullanımına etki eden faktörlerin etkinliğini hakkında araştırma yapmaya dayanmaktadır. Ampirik analiz sırasında etkenler kategorize edilmiş daha sonra anket çalışmasıyla istatistiksel analiz metodlarını kullanarak faktörlerin etkenliğini Türkiye'de bulunan firmalar için ölçülüp, şirketler arası elektronik ticarete başarılı bir uyum süreci için ele alınmıştır.

Araştırma sonuçları şirketler arası elektronik ticaretin algısal faydalarının ve yönetsel etkenlerinin, firmaların şirketler arası elektronik ticaretin kullanımını yüksek oranda etkilediğini göstermiştir. Bu alandaki önceki çalışmalara ek olarak, şirketler arası elektronik ticaret portallarının da şirketler arası elektronik ticaretin

kullanımına olumlu olarak etki yaptığı ortaya konulmuştur. Şirketlerarası elektronik ticaret kullanım oranını etkileyen faktörler hakkındaki bilgiler, şirket yöneticilerine, elektronik ticaret entegrasyonu danışman firmalarına ve portallara adaptasyon seviyesinin artırılmasında kayda değer eğitimsel bir altyapı sağlamaktadır.

To my parents

Acknowledgements

There are many people who helped making my years in the graduate school most valuable. First, I thank Prof. Dr. Metin akıcı, my major professor and dissertation supervisor. Having the opportunity to work with him over the years was intellectually rewarding. He has made valuable contributions throughout the doctoral qualifying exam and the development of my dissertation thesis.

Many thanks to Social Science Institution staff of Işık University, who patiently helped me during my graduate. Also, I want to thank Yeditepe University who supported me during my education. My special thanks to Dr. Engin Baran for his insightful suggestions and expertise.

The last words of thanks go to my family. I thank my father (rest in peace) and my mother for their patience, encouragement, and endless support throughout this long journey.

Table of Contents

Abstract	ii
Özet	iii
Dedication	v
Acknowledgements	vi
Table of Contents	vii
List of Figures	ix
List of Tables	xi
List of Appendices	xiii
List of Abbreviations	xiv
1 Introduction	1
1.1 Evolution of the B2B E-Commerce.....	3
1.1.1 EDI.....	4
1.1.2 One to One Marketing.....	4
1.1.3 Many to Many Marketing.....	5
1.2 Supply Chain Management.....	5
1.3 Existing Empirical Evidence on the B2B E-commerce and the Factors that Affect B2B Overall Use in Turkey.....	6
1.4 Research Objectives.....	10
1.5 Outline of the Study.....	11
2 Literature Review	12
3 Conceptual Framework	34
3.1 Research Model.....	34
3.1.1 Variable Groups.....	34
3.1.1.1 Perceived Benefits.....	35
3.1.1.2 Managerial Factors.....	35
3.1.1.3 Organizational Factors.....	35

3.1.1.4	B2B Portal Factors.....	35
3.1.1.5	External Factors.....	36
3.2	Hypotheses.....	40
3.2.1	Sub Hypotheses of the Perceived Benefits.....	40
3.2.2	Sub Hypotheses of the Managerial Factors.....	41
3.2.3	Sub Hypotheses of the Organizational Factors.....	41
3.2.4	Sub Hypotheses of the B2B Portal Factors.....	42
3.2.5	Sub Hypotheses of the External Factors.....	42
4	Method	43
4.1	Reliability Analysis.....	44
4.2	Multiple Regression and Correlation Analysis.....	44
4.3	Analysis of Variance (ANOVA)	46
4.4	Sampling.....	47
5	Empirical Results	50
5.1	Descriptive Statistics.....	50
5.1.1	Descriptive Statistics for the Dependent Variable.....	50
5.1.2	Company Characteristics.....	51
5.1.3	Descriptive Statistics for the Independent Variable.....	53
5.2	Statistical Analysis.....	55
5.2.1	Reliability Analysis.....	55
5.2.2	Multiple Regression and Correlation Analysis.....	58
5.2.3	Analysis of Variance (ANOVA)	63
6	Conclusions	65
6.1	Limitations and Implications for Further Research.....	70
	References	72
	Appendices	75
	Vita	104

List of Figures

Figure 1.1 Evolution of the B2B E-Commerce.....	4
Figure 2.1 E-Business Applications	13
Figure 2.2 Model of the Drivers of Internet Purchasing.....	14
Figure 2.3 Model of the Level of B2B E-Commerce	15
Figure 2.4 Model of the Drivers of Commitment.....	23
Figure 2.5 Model of the B2B Critical Success Factors.....	24
Figure 2.6 The Factors Influencing the Implementation of E-Commerce	26
Figure 2.7 Model of the Application and Implementation of E-Commerce.....	29
Figure 2.8 Model of the E-Business Adoption	32
Figure 3.1 Proposed Model of the Research	37
Figure 3.2 Proposed Model of the Research and Hypotheses	39
Figure 5.1 Revised Research Model	57
Figure 5.2 Final Research Model.....	62
Figure F.1 Pie Chart of the Research Question 1 in Percentages.....	89
Figure F.2 Pie Chart of the Research Question 2 in Percentages.....	89
Figure F.3 Pie Chart of the Research Question 3 in Percentages.....	90
Figure F.4 Pie Chart of the Research Question 4 in Percentages.....	90
Figure F.5 Pie Chart of the Research Question 5 in Percentages.....	91
Figure F.6 Pie Chart of the Research Question 6 in Percentages.....	91
Figure F.7 Pie Chart of the Research Question 7 in Percentages.....	92
Figure F.8 Pie Chart of the Research Question 8 in Percentages.....	92
Figure F.9 Pie Chart of the Research Question 9 in Percentages.....	93
Figure F.10 Pie Chart of the Research Question 10 in Percentages.....	93
Figure F.11 Pie Chart of the Research Question 11 in Percentages.....	94
Figure F.12 Pie Chart of the Research Question 12 in Percentages.....	94
Figure F.13 Pie Chart of the Research Question 13 in Percentages.....	95

Figure F.14 Pie Chart of the Research Question 14 in Percentages.....	95
Figure F.15 Pie Chart of the Research Question 15 in Percentages.....	96
Figure F.16 Pie Chart of the Research Question 16 in Percentages.....	96
Figure F.17 Pie Chart of the Research Question 17 in Percentages.....	97
Figure F.18 Pie Chart of the Research Question 18 in Percentages.....	97
Figure F.19 Pie Chart of the Research Question 19 in Percentages.....	98
Figure F.20 Pie Chart of the Research Question 20 in Percentages.....	98
Figure F.21 Pie Chart of the Research Question 21 in Percentages.....	99
Figure F.22 Pie Chart of the Research Question 22 in Percentages.....	99
Figure F.23 Pie Chart of the Research Question 23 in Percentages.....	100
Figure F.24 Pie Chart of the Research Question 24 in Percentages.....	100
Figure F.25 Pie Chart of the Research Question 25 in Percentages.....	101
Figure F.26 Pie Chart of the Research Question 26 in Percentages.....	101
Figure F.27 Pie Chart of the Research Question 27 in Percentages.....	102
Figure F.28 Pie Chart of the Research Question 28 in Percentages.....	102
Figure F.29 Pie Chart of the Research Question 29 in Percentages.....	103

List of Tables

Table 1.1 Literature Review of the B2B E-commerce Studies in Turkey.....	9
Table 2.1 Hypotheses of the Level of B2B E-Commerce.....	16
Table 2.2 Empirical Results of the Barriers to the Adoption of E-Auctions.....	21
Table 2.3 Regression Analysis Results for the E-Commerce Implementation.....	27
Table 2.4 Critical Barriers and Success Factors for the E-Commerce Implementation	30
Table 2.5 Results of the Perceived Benefits of the Internet for E-Commerce.....	31
Table 2.6 Results of the Perceived Barriers of the Internet for E-Commerce.	31
Table 3.1 Literature Review Related with the Research Model	38
Table 4.1 Sample Company Information Related to the Research....	47
Table 5.1 Results of the Descriptive Statistics for Dependent Variable.....	50
Table 5.2 Companies' Sector Names.....	51
Table 5.3 Results of the Descriptive Statistics for Company Characteristics.....	52
Table 5.4 Results of the Descriptive Statistics for Company Sizes.....	52
Table 5.5 Results of the Descriptive Statistics for Independent Variables.....	53
Table 5.6 Results of the Reliability Analysis.....	55
Table 5.7 Results of the Reliability Analysis.....	56
Table 5.8 Results of the Linearity Analysis of Revised Research Model.....	58
Table 5.9 Results of the Significance of Regression Model.....	59
Table 5.10 Results of Testing the Significance of F Value	59
Table 5.11 Results of Testing the Significance of T Value	60
Table 5.12 Results of the Significance of Revised Regression Model.....	60
Table 5.13 Results of Testing the Significance of F Value.....	61
Table 5.14 Results of Testing the Significance of T Value for Final Research Model.....	61
Table 5.15 Frequency Distributions for the Company Sizes	63

Table 5.16 Results of the Levene Statistics	63
Table 5.17 Results of Testing the Significance of F Value	63
Table 5.18 Frequency Distributions for the Companies' Sector Names.....	64
Table 5.19 Results of the Levene Statistics	64
Table 5.20 Results of Testing the Significance of F Value	64
Table C.1 Test Results for “ <i>E-commerce in Hong Kong an empirical perspective and analysis</i> ” Titled Research.....	80
Table D.1 Questionnaire of the Research	81
Table E.1 Sample Data.....	85

List of Appendices

Appendix A	Example Questionnaire of Purchasing Company Factor.....	76
Appendix B	Seven Propositions for “Qualitative investigation of smaller firm e-business development” titled research.....	79
Appendix C	Test Results for “E-commerce in Hong Kong an empirical perspective and analysis” titled research.....	80
Appendix D	Questionnaire of the Research.....	81
Appendix E	Sample Data.....	85
Appendix F	Pie Charts of the Sample Data in Percentages.....	89

List of Abbreviations

B2B	Business to Business
B2C	Business to Customers
EDI	Electronic Data Interchange
XML	Extensible Markup Language
ANOVA	Analysis of Variance

CHAPTER 1

INTRODUCTION

Today's business environment forces companies to increase their efficiencies and makes them search for the new ways of accessing wide range of customers. These efforts are also caused by competitive environment and effects of globalization. Product life cycle is getting shorter, new rivals are arising and customer retention is getting more difficult. Therefore; companies need to find new ways of overcoming these difficulties. Establishing effective supply chains and creating strategic relationships between suppliers will be a solution to compensate today's business environment. However, traditional business methods and tools are insufficient for speed and accuracy needs for companies. Internet is a new way of doing business and allows companies to make transaction with their suppliers and customers. Electronic commerce, which is known as buying and selling of goods and services over the internet, is arising.

Electronic commerce activities can be classified into two main groups which are called as Business to Business (B2B) and Business to Customers (B2C). These two electronic commerce activities are simply defined by Noyce as;

(1) Business-to-consumer (B2C): the sale of goods, services and content to individuals.

(2) Business-to-business (B2B): the buying and selling of goods, services and content among enterprises (Noyce, 2002).

There are comparisons between B2B and B2C according to their market sizes. Gartner Group's comparison is the most impressive one which mentions that B2B market size is 10 times larger than the well-known B2C market (Drucker, 2000). Companies can increase their profits and communicate with each other quickly and efficiently by using B2B e-commerce.

The three main tools of online B2B are as follows; electronic mail, electronic data interchange (EDI) and extensible markup language (XML). B2B portals and online exchanges employ these tools to maximize the value of B2B based relationships and transactions.

Today's customers want to learn more information about the company which they are going to make transactions such as; company history, production capacity and diversity of products. Moreover, they want to track every step of the process which begins with establishing the connection between the companies and ends with the transaction. B2B e-commerce gives chance to customers, suppliers and partners for interacting online to companies' information systems with automated e-mails, self-service web sites and B2B information portals. Also, e-auction is a widely used B2B tool which can reduce purchase prices, save time and enable suppliers from everywhere in the world to compete for the buyers' business.

B2B e-commerce allows companies to build networks over the internet which supports outsourcing, manufacturing and other functions with creating opportunity for companies to focus on their own business. Consequently, companies should adopt B2B and build automation for their business processes to harvest the benefits of B2B integration.

Companies should integrate with all the layers of their businesses and their related business applications to gain more output from B2B during the integration period. As a result, B2B application integration concept is being more important for understanding the integration stage of B2B.

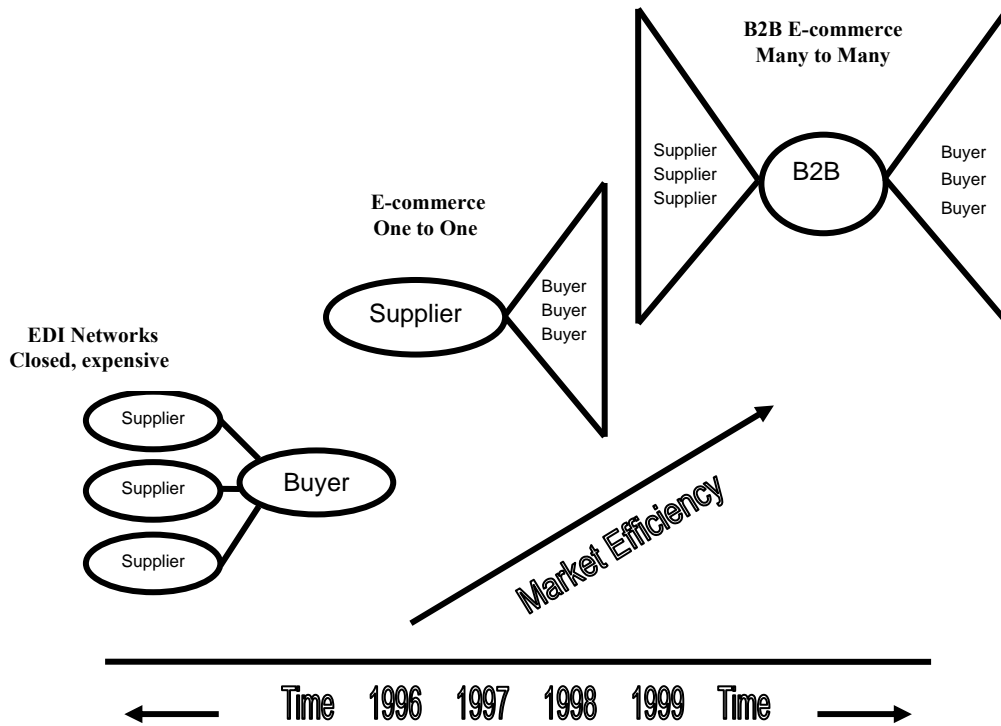
B2B application integration is defined as “B2B application integration is the controlled sharing of data and business processes among any connected applications and data sources, intra or inter-company. The challenge of B2B application integration is to be able to share data and processes without requiring sweeping changes to the applications or data structures” by David Linthicum (Linthicum, 2000).

Evolution of the e-commerce and supply chain management concepts gain importance while understanding the companies’ B2B integration process which are going to be analyzed at the following section.

1.1 Evolution of the B2B E-Commerce

Electronic commerce can be defined as an inter-organizational information system which provides business to business electronic communication, information exchange and transaction support through a web of either public or private access, value added networks (Min & Galle, 1999). According to Electronic Commerce Association, e-commerce can be supported with variety of technological tools such as; streamlining processes, interconnectivity, internet, EDI, electronic funds transfer, e-mail, security, electronic document management, workflow processing, middleware, bar-coding, image processing, smart cards, voice responses and networking (Hsieh & Lin, 1998).

Evolution of the B2B commerce can be examined in three phases which starts with EDI networks between many suppliers and one buyer, then continues with B2C e-commerce between one supplier and many buyers, finally many suppliers and many buyers come together at the third phase called B2B e-commerce. The market efficiency is low at the first phase, but throughout the evolution of B2B e-commerce market efficiency has reached to the maximum level.



Source: Meeker, 2000

Figure 1.1 Evolution of the B2B E-Commerce

1.1.1 EDI

EDI is defined as "a form of electronic communication that allows businesses to exchange transaction data and documents in structured formats that can be processed by computer applications software" by Lankford (Lankford & Johnson, 2000). Also, EDI messages are structured for communication between computers without any human intervention because they have a compressed non-human-readable format. An EDI network has begun to be used by major manufacturers with their suppliers back in the early 1970s. But there are some limitations of EDI networks, for instances EDI networks are closed systems and require complex technological infrastructures with huge setup costs.

1.1.2 One to One Marketing

The second phase is also called one to one marketing which employs Internet as a prior tool to communicate and transact online between supplier and buyers.

According to internetworldstats.com, there are over one billion internet accessed computers across the world which allow companies to reach wide range of customers. Besides, Internet provides a platform for buyers and sellers to search, meet, compare prices, negotiate and in this manner helps for reducing transaction costs (Berthon, Ewing, Pitt, & Naude, 2003). During the second phase, companies adopt e-commerce for sharing their product information and for attending business transaction with their customers.

1.1.3 Many to Many Marketing

Finally, B2B e-commerce gives chance to many suppliers and many buyers to come together with the help of B2B portals. Companies publish their business information over the B2B portals such as; their products, business history, company size, production capacity, and transport capabilities. When the other companies discover the new trading partners which take place in the same B2B portal, the negotiation stage begins among the companies, and then the transaction will occur according to their agreements.

Since, the internet has become the platform of e-commerce; new tools have been added to the cycle. Extensible Markup Language (XML) is one of them that enable the exchange of information among different computer systems with a simple, very flexible human-readable text format. XML has several advantages against EDI. XML based information systems use the internet backbone to establish connection among the companies and require low initial investments, simple programming and tools that can be easily downloaded from web with no charge.

1.2 Supply Chain Management

Every company wants to have an effective supply chain management which accelerates the B2B integration. Initially, supply chain management concept should be examined in order to understand the relationship between supply chain management and B2B e-commerce. A supply chain is defined as; “a network

consists of product, material, information and fund flows across the phases of quotation, order processing and fulfillment along both directions among suppliers, manufacturers and customers.” by Casati (Casati, 2001).

By establishing effective supply chain management, companies can control materials sourcing, production, order fulfillment and have chance to increase the overall value which companies can serve to their customers (Cho & Kulvatunyo, September 2004).

Companies can improve their relationships between their suppliers, partners and customers by using supply chain management (Al-Mashari & Zairi, 2000). Companies can connect to their customers and their suppliers more effectively with using state of art technology and internet based applications throughout the transactions (Angeles, 2000).

E-market places improve supply chain efficiency by automating business processes such as procurement, order management, and fulfillment. Dynamic pricing, real-time information about demand, required lead time, or remaining capacity or inventory levels can be done by automating business processes (Grey & Shi, 2005). Effective supply chain management employs automation and internet based data exchange during transactions, hence B2B e-commerce seems to be the only choice for realization of these efforts.

1.3 Existing Empirical Evidence on the B2B E-commerce and the Factors that Affect the B2B Overall Use in Turkey

There are not sufficient numbers of empirical evidences related to the factors that affect B2B overall use for the companies in Turkey. There are 4 existing academic surveys related to B2B e-commerce. Çakmaklı study (2005) is a doctoral thesis and rests of the studies are master theses. Entire studies include benefits and barriers of e-commerce adoption, critical success factors for B2B integration, e-marketplaces and e-business models for companies in Turkey.

The Arıkan (2002) study focuses on benefits and barriers for companies in Turkey during B2B integration. Objective of the study is to eliminate the barriers and to get information about companies' business models in Turkey during B2B integration. 19 samples are used from the members of Istanbul Chamber of Industry which have employee numbers between 500 and 1000. Primary data is collected by e-mails with the help of the questionnaire which includes 12 questions. Reliability and Kolmogorov- Smirnov frequency distribution analysis are applied during statistical analysis of research data. Research identifies the following B2B processes; raw material information search, inventory management, online purchasing and supply chain management. According to Arıkan's research, supply chain and inventory management are the most used B2B process among the companies in Turkey. Barriers of B2B integration are grouped as; lack of management support and infrastructure, security, and setup costs. Benefits of B2B usage are grouped as; increased speeds, low inventory cost, elimination of paper work, and access to wider range of market. Moreover, survey has pointed out that companies in Turkey frequently use e-shops, e-market places, e-portals as a new business models. Although, the barriers and benefits of B2B integration are well identified, the sample size of the research and used statistical analysis are not sufficient for framing the B2B usage and B2B integration process in Turkey.

The Bayoğlu (2005) study evaluates the effectiveness of B2B e-marketplaces for the companies in Turkey. 30 samples are collected by using questionnaire that covers 12 questions. During the statistical analysis of the research factor, reliability, multiple regression and correlation, ANOVA, chi-square analysis are used. Economical effects, positive renovations and effects of joining B2B e-marketplaces are the three main factors which effect researches' core concept called use of e-marketplaces. Although, research model adjusted R square (0,171) and sample size are very low, the researches' findings by using frequency distribution analysis underline the positive effects of B2B market places for the companies in Turkey which help for visualizing the benefits of B2B integration.

The Söylemez (2006) study investigates the reasons for using B2B and B2B usage ratio among the companies, critical success factors of B2B, supplier relations, expected and supplied benefits of B2B use for the companies in Turkey. Primary

data is collected by using questionnaire that has 29 questions which are collected by e-mail and fax from the companies in Turkey that are the members of Istanbul Chamber of Industry with the 111 sample size. Chi square is used for statistical analysis of the research. Research findings show that 23% of the companies use B2B during their transactions and high amount of the companies (66%) willing to integrate their companies to B2B. Empirical analysis shows that companies, which do not use B2B channels, perceive barriers of the B2B use are as follows; supplier effects, security, setup costs, lack of trained employees, low infrastructural equipment and lack of manager support. Companies prefer purchasing rather than selling goods by using B2B channels. Also, manager support and supplier recommendations let companies to use B2B channels. According to research findings, before B2B integration companies expect decrease in communication costs, inventory costs and transaction time while accessing to new customers and having more administrative facilities. After B2B integration, companies mainly gain low communication costs, improved operational tracking, low inventory and transaction costs and access to new customers. Simultaneously, critical success factors of B2B use are listed as; internet use, management support, technological infrastructure, training, supplier effects, security, web page design, multilanguage support of web page and trust. Finally, empirical evidences show that there are sufficient numbers of companies which have information about the B2B and companies can gain benefits from B2B with using high amount of XML infrastructure.

Çakmaklı (2005) study explores e-marketplaces, e-commerce adoption process, e-business models, small and medium sized enterprises' perceptions and expectations related to websites. Research sample size is 3719 and the data is collected by using questionnaire that covers 12 questions which mainly has investigated the small medium sized enterprises' e-commerce adoption process. E-mail and fax are used during the questionnaire data collection period. Chi square, t test and ANOVA analysis are used during the statistical analysis of the research. Empirical findings show that 80% of the companies have website and just 15% of the companies are the members of e-marketplaces while 94% of them use e-marketplaces as a seller. Furthermore, 81% of the companies prefer web sites as an e-business model and firm size is associated with web presence of the company. Factor analysis proves that important reasons for e-marketplace participation are; accessing to new markets,

gaining competitive advantage and cost reduction. Problems for e-marketplace participation are security, trust, price differences compared to traditional channels and difficulties in usage. In addition, web site adoption reasons can be summarized as; cost reduction, new customers, and speed.

Table 1.1 Literature Review of the B2B E-commerce Studies in Turkey

Literature Review of the Business to Business E-commerce Studies in Turkey				
	Year	Purpose	Data Collection Method	Analysis Method
Arıkan	2002	Discover the barriers and benefits for the companies in Turkey during B2B integration period.	Mail survey (12 questions related to B2B)	Reliability, Kolmogorov - Smirnov frequency distribution
Çakmaklı	2005	Discover enterprises' perceptions and expectations related to websites, e-marketplaces, e-commerce adoption and e-business models.	Fax and mail survey (12 questions related to B2B e-commerce)	Chi square, t test and ANOVA
Bayoğlu	2005	Evaluating the effectiveness of B2B marketplaces for the companies in Turkey	Mail survey (12 questions related to effectiveness of B2B marketplaces for the companies in Turkey)	Factor, reliability, multiple regression and correlation, ANOVA, chi square
Söylemez	2006	Exploring the critical success factors of B2B, reasons for using B2B and B2B usage ratio among the companies, supplier relations, expected and supplied benefits of B2B use for the companies in Turkey.	Mail and Fax survey (29 questions related to the subject)	Chi square

1.4 Research Objectives

This study concentrates on B2B (Business to Business) electronic commerce which is used by many companies in Turkey for purchasing, supplying and selling goods over the internet by connecting B2B portals. The development of B2B e-commerce allows the companies to answer the demand for low price, low inventory cost, low transaction cost, short lead time, and increased administration facilities.

During the integration period of B2B e-commerce, companies face difficulties and tradeoffs that will discourage their adoption as follows; price transparency, uncertainty of supply, sharing internal information about their products, misleading perceptions for B2B integration, preference for long term relations with few partners instead of using auctions or e-procurement systems, trust factor related to B2B e-commerce portals and high ERP costs for internal e-business integration.

Literature survey contains the researches about B2B and the models explain the factors that are related to the B2B overall use of companies. Although researches consist of the various numbers of factors which are related to the model, every model is trying to focus on B2B with different aspects. This means that, there is no unique research model which covers all factors' effectiveness that is related to B2B overall use. Also, there is no considerable research about the B2B overall use for the Turkish companies.

The problem that will be examined in this study can be defined as; the knowledge about the factors and their effectiveness which are associated with companies' B2B overall use is insufficient in Turkey.

This study aims to do research on establishing a framework for B2B integration and measuring the drivers which affect the adoption process for companies using B2B e-commerce and use B2B portals for information exchange in Turkey. During the exploratory empirical analysis, questionnaire study will examine the factors' effectiveness related to the adoption success of B2B commerce by using statistical analysis.

Consequently, this research discusses the position of Turkish companies during B2B integration stage, examination of the factors which cause difficulties for B2B adopters and the future of B2B integration. The ultimate goal of the research is to help both potential adopters of B2B e-commerce who use that technology as a selling and a purchasing tool in Turkey.

1.5 Outline of the Study

First chapter of the research covers the introduction part that gives information about the B2B e-commerce, the evolution of the B2B, supply chain management and existing empirical evidence on the B2B e-commerce in Turkey.

The second chapter of the dissertation includes the literature review section which examines theoretical and empirical studies conducted on the B2B e-commerce and the related factors that affect the B2B overall use.

Third chapter provides information about the conceptual framework of the research that consists of the hypotheses and the research model, subsequently the fourth chapter contains the method of the research to inform about the sampling, data collection method and the statistical analyses procedures of the research such as; reliability, multiple regression and correlation analysis, and analysis of variance.

The fifth chapter covers the empirical results of the survey which include the descriptive analysis based on the frequency tables and the related statistical analyses.

The final chapter of the research contains conclusions, limitations and further research sections.

CHAPTER 2

LITERATURE REVIEW

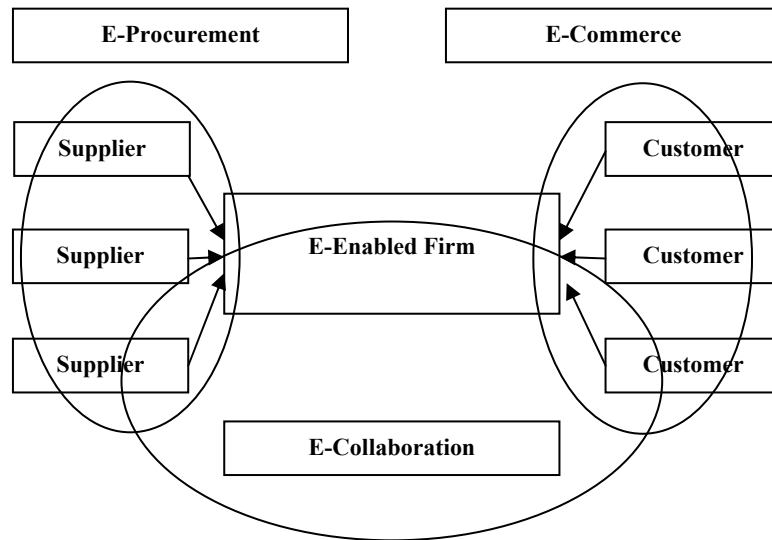
Throughout the literature review, it is examined that the B2B e-commerce integration studies are as follows; the drivers that affect the online transactions, benefits of the B2B, online supply chain activities, difficulties of the B2B integration and strategies, impacts of the supply chain for the long term relationships, and finally technological infrastructure integration of the companies. Research model which represents the drivers of B2B integration will be formed with the help of the information contained in the literature review section.

There is a descriptive framework of Lee and Whang (Lee & Whang, 2002) that analyses e-business applications into three categories; e-commerce, e-procurement and e-collaboration.

Electronic commerce helps network of supply chain partners to identify and respond quickly to changing customer demand captured over the Internet.

Electronic procurement allows companies to use the internet for procuring direct or indirect materials, as well as handling value-added services like transportation, warehousing, customs clearing, payment, quality validation, and documentation.

E-Collaboration facilitates coordination of various decisions and activities beyond the transactions among the supply chain partners, both suppliers and customers over the Internet. Although, e-procurement is the mirror image of e-commerce, they have different aspects. For instance, e-commerce often faces a large number of individual customers, while e-procurement involves dealings with companies.

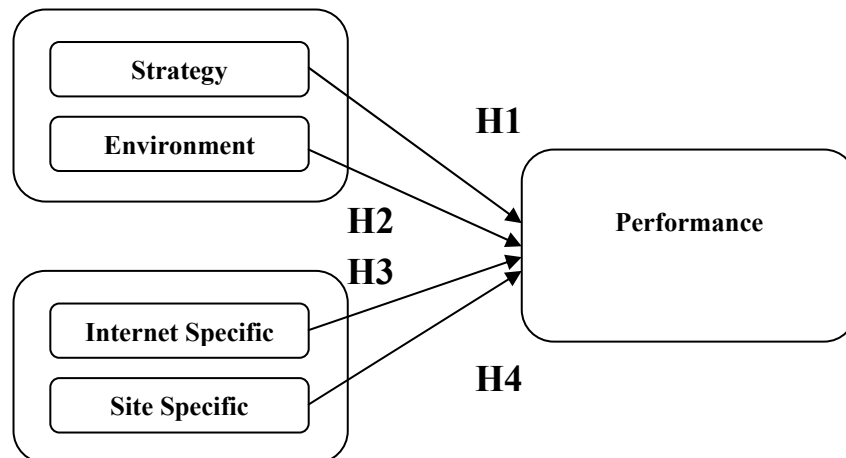


Source: Lee & Whang, 2002

Figure 2.1 E-Business Applications

There is a survey which examines the drivers of internet purchasing success by Boyer and Olson (Boyer & Olson, 2002) that covers 416 e-procurement users of office supplies thus reveals important relationship between web site design, employee work environments, internet strategy, and purchasing process. The empirical analysis contains a questionnaire, which can be reviewed in the appendix part of the research.

The data comes from the questionnaire results and its step-wise regression analysis supports that buyer companies realize performance benefits from e-procurement, and they identify the drivers of success. The drivers of performance success are categorized into characteristics of the purchasing company factors (strategy; cost, convenience and deliver speed - environment; comfort, adopt level, tech support) and internet factors (internet related and site specific).



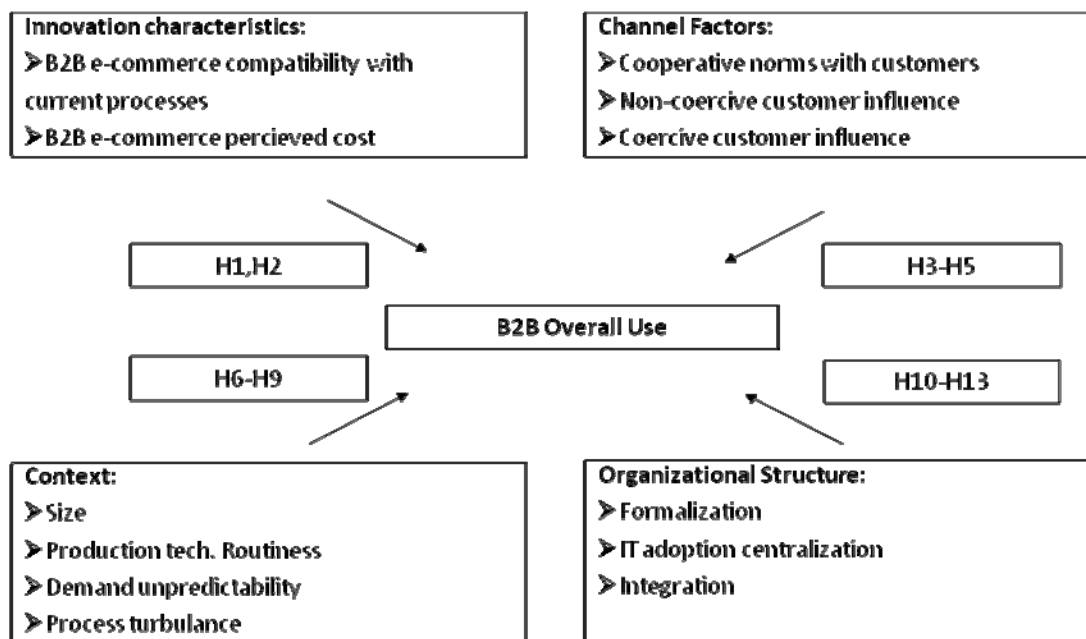
Source: Boyer & Olson, 2002

Figure 2.2 Model of the Drivers of Internet Purchasing

Statistical results show that most of independent variables (including strategy, environmental, site specific and internet-specific factors) are significantly correlated with performance measures. For obtaining the strongest predictors of performance while accounting for collinearity effects, researcher employs stepwise regression. The stepwise regression is computed by entering all 15 independent variables into the SPSS software. With the help of statistical analysis, it is examined that internet-specific factors, (particularly perc-use; perceived usefulness is defined as a potential user's subjective views of the new technology as offering benefits relative to alternative methods of performing the same task. Attitude measures more general feelings regarding the technology) and environmental factor (computer hours per week) have a large impact for the cost performance, while accounting performance (time spent on computer and the cost of training new personnel) affects the accounting performance. In summary, results show that performance improvements are associated with internet purchasing. And the research underlines that internet reduces costs, improves accuracy and delivery. Also, web site is important factor for companies and they should provide opportunities for their workers to develop their skills.

Besides, identifying the level of B2B e-commerce for the industrial organizations is an important subject for examining the B2B adoption. The research with “Predicting the level of B2B e-commerce in industrial organizations” title investigates several models with B2B e-commerce overall use and takes “B2B overall use variable” as the dependent variable while innovation characteristics, context, channel factors, and organizational structure are the predictor variables (Cindy, Karthik, & Richard, 2003).

The research focuses on B2B commerce as a supply chain innovation that generates process integration and forms a model listed below which shows the relation between dependent and independent variables.



Source: Cindy, Karthik, & Richard, 2003

Figure 2.3 Model of the Level of B2B E-Commerce

Related empirical research contains 13 hypotheses and these are listed with the following table;

Table 2.1 Hypotheses of the Level of B2B E-Commerce

H1: The greater the compatibility of B2B e-commerce with current systems, the greater the B2B e-commerce overall use.	(β =.619; p <.01)
H2: The greater the perceived cost of B2B e-commerce, the less the B2B e-commerce overall use.	(β =.17; p >.05)
H3: The greater the cooperative norms with customers, the greater the B2B e-commerce overall use.	(β =.290; p <.01)
H4: The greater the non-coercive customer influence directed to a target firm to adopt B2B e-commerce, the greater the B2B e-commerce overall use.	(β =.432; p <.01)
H5: The greater the coercive customer influence directed to a target firm to adopt B2B e-commerce, the greater the B2B e-commerce overall use.	(β =.046; p >.05)
H6: The greater the firm size, the greater the B2B ecommerce overall use.	(β =.205; p <.01)
H7: The greater the production technology routineness, the greater the B2B e-commerce overall use.	(β =-.001; p >.05)
H8: The greater the demand unpredictability, the less the B2B e-commerce overall use.	(β =-.117; p >.05)
H9: The greater the process turbulence, the greater the B2B e-commerce overall use.	(β =.391; p <.01)
H10: The greater the formalization, the greater the B2B ecommerce overall use.	(β =.110; p >.05)
H11: The greater the IT adoption centralization, the less the B2B e-commerce overall use.	(β =-.161; p >.05)
H12: The greater the technocratic specialization, the greater the B2B e-commerce overall use.	(β =.328; p <.01)
H13: The greater the integration, the greater the B2B ecommerce overall use.	(β =.166; p <.05)

Source: Cindy, Karthik, & Richard, 2003

The β (standardized regression estimate value) value which is produced from the statistical analysis shows that H1, H2 (inversely), H3, H4, H9, H11, H12, H13 hypotheses are related to the B2B overall use as a dependent variable. But, channel factor and innovation characteristic factor have an adequate R square (explanatory power) value that can explain the model. The results demonstrate that compatibility with existing systems, cooperative norms with customers, lateral integration within a firm, technocratic specialization, and decentralization of information technology decisions facilitate B2B e-commerce overall use. In addition, large firms are more likely than small firms to have greater levels of B2B e-commerce and firms are more likely to use B2B e-commerce channels with their customers that are affected from recommendations rather than threats to encourage the e-commerce usage.

There are several articles about the B2B integration which points out the benefits of B2B. Article by William Atkinson (Atkinson, 2005) is a good instance which mentions the benefits of B2B effectively and summarizes the benefits of B2B as follows; capturing all procurement information for items purchased via e-procurement from the online catalogues, low cost solution to handling the huge numbers of repetitive low-dollar value transactions on the indirect side. In the article, Atkinson clarifies tips for the long term success of B2B integration as follows; selecting a good hosting partner for using their knowledge and experience, management support and having a full time person who is dedicated resource to B2B integration effort.

The supply chain management review magazine includes an article by Sunil Chopra, Darren Dougan, and Gareth Taylor that examines the benefits of B2B commerce which grouped the benefits in three distinct categories with the title of “B2B values”. These are;

- ✓ Reduced transaction charges
- ✓ Improved market efficiencies
- ✓ Enhanced supply chain benefits

Furthermore, the traditional channels of communication require high staffing levels on both buyers and the seller side which causes high costs for companies. Improved market efficiencies can be provided with matching surplus capacity in its supply chain with unmet demand. However, prices can be increased with the auctions. B2B e-commerce can create value for the supply chain activities by preventing “bullwhip effect” which is known as a situation that small demand can be perceived as a huge demand for the reason of collecting the information locally without sharing the demand real-time at the different levels of supply chain and also B2B gives opportunity to supply chain by decreasing costs that improves customer service. The research mentions that, although the virtual project workplaces can be possible with real time collaboration, price reduction may hurt long-term collaboration.

Moreover, there are articles about the B2B integration which are pointing the difficulties faced by e-marketplaces by discussing the potential sources of value that will encourage their adoption by preserving and complementing long-term relationships. Survey by Grey, Olanson, and Shi's can be a good example which represents these efforts and forms a good framework for these studies. In the survey, the drivers which affect positively the B2B integration are examined and these drivers are; reductions in transaction, agency and inventory costs, improved information sharing for production coordination, auctions, reverse auctions, dynamic pricing. Simultaneously, there are drivers which slow down the marketplace adoptions these are:

Risk Management; while using the B2B mechanism prices adjust rapidly to equilibrate supply and demand, assuming the market is competitive and fair. But this condition also exposes market participants to price the risk-uncertainty about transaction prices. Furthermore, there can be demand uncertainty in B2B marketplaces.

Resistance for price transparency; major supply chain players may be reluctant to participate in a marketplace because they do not want to share much information with a single third-party market-maker. The important factors behind this reason are perceptions of the companies that information about their procurement costs and practices are known as a source of competitive advantage (Grey, Olanson, & Shi, 2005).

Misleading perceptions for B2B commerce; quality, service levels and purchasing volumes are the main misleading perceptions. In relationship based supply chains, supply and demand are often balanced by non-price mechanisms because, in the case of undersupply, companies may face with low output, service level and increased lead times to strategic customers. This situation will cause problems such as losing their customers. Throughout the B2B marketplace auctions, companies want to secure the raw materials quality and their lead times.

In Business Europe magazine, there is an article about B2B integration and article mentions that some companies learned painful lessons and article gives examples for

these lessons for instance; companies underestimate the financial cost and strategic downside of participation in customer-built B2B exchanges, most B2B operations are unaware of cost of preparing, managing and updating online catalogue contents such as; specifications, prices and availability of products. Suppliers fear for the B2B participation which will give competitors an open window onto their pricing structures and operational capabilities. In addition, price can be seen as a primary factor. But in reality, business relationships based on quality assurance, security and trust especially in highly regulated, non-commodity industries like defense (Business, November 27 2002).

The factors which carry the company to success in the article can be summarized with the following methods; adding value for suppliers participants will be an effective method, subscription method will be a better way than taking a commission for the transactions units, “off the shelf” method which is used by companies and finally new techniques such as alerting the supplier with mobile phone especially when new supply opportunities exist can also be more useful method.

It is known that USA and European companies widely use e-auction method. With the help of the e-auctions suppliers compete dynamically, bid down the price of the items to be purchased. The rate of use is increasing day by day (Chew, Temkin, & Hudson, 2003) and, e-auctions have successfully been used to source indirect materials, production materials, and support services (Gabbard, 2003). Also, e-auction method can reduce purchase prices, save time, streamline the bidding process and enable suppliers from anywhere in the world to compete for a buyer's business (Carter, Kaufmann, Beall, Carter, Hendrick, & Petersen, 2004)). Simultaneously, e-auction method has some risks, for instance e-auctions can damage supplier relationships such as; switching to suppliers who are not capable, underestimating the total costs associated with using suppliers with lower purchase prices, and negatively impacting the supply market in the long run by driving out qualified suppliers ((Emiliani & Stec, Aerospace parts supplier's reaction to online reverse auctions, 2004), (Emiliani, Sourcing in the global aerospace supply chain using online reverse auctions, 2004a), (Jap, Online reverse auctions: issues, themes, and prospects for the future, 2002), (Jap, An exploratory study of the introduction of online reverse auctions, 2003), (Smeltzer & Carr, 2002), (Van Tulder & Mol, 2002)).

Identifying the benefits and barriers of e-auction is an important issue for the adoption process of B2B, empirical research by J. Hartley and M. Lane with “exploring the barriers to the adoption of e-auctions for sourcing” title is a good example for the exploration of this concept (Hartley & Lane, 2006). Research’s purpose is to understand the differences in perceived barriers to e-auctions both in US buying organizations that have adopted e-auctions and those that have not. Feedbacks from the interviews show that low profit margins, concerns about sharing information, distrust, quality, cultural problems, being price focused, refusing to participate by suppliers can be perceived as a barrier for the eight companies and four propositions are developed after pilot testing with eight large sales over \$1 million US multinational US companies these are:

Buyer Organizational Barriers (Internal);

- 1- Lack of e-auction knowledge
- 2- Information security concerns

Supplier Related Barriers;

- 3- Importance of supplier relationships
- 4- Lack of supplier participation

The questionnaire is implemented to 163 US National Association of Purchasing Management members for investigating these 4 propositions. Seven point scales is used to evaluate the questionnaire. An exploratory factor analysis is implemented to identify the barrier constructs for underlying the survey items using the entire set of 163 usable returns with eliminating the items which have the rotated factor loadings of less than 0.6. Subsequently, the model is reshaped and the final model which has six one-dimensional factors is explained with %73 of the variance. Afterwards, multivariate analysis of variance is used to explore the differences among the adopters and non-adopters. And the results are listed in the followings table;

Table 2.2 Empirical Results of the Barriers to the Adoption of E-Auctions

Construct	Adopters Mean (n=45)	Non- Adopters Mean (n=11)	F-statistics	p-value
Lack of e-auction knowledge	3,38	3,92	4,89	0,029
Lack of Supplier participation	3,78	3,49	1,49	0,225
Information security concerns	3,34	4,26	11,09	0,001
Importance of supplier relationships	4,35	4,48	0,211	0,649

Source: Hartley & Lane, 2006

Results show that within the buyer's organization is perceived to be a greater barrier to e-auctions than supplier-related factors and it proves that internal barriers have great impact on e-integration, so the findings suggest that supply managers must address their employees' information security concerns to increase e-auction adoption. Training and use of private, self-service auctions with closed bidding may help supply managers who want to adopt e-auctions to reduce the barriers from information security concerns. In addition, results show that there is no significant difference between the adopters and non-adopters of e-auctions on the importance of the supplier relationship as a barrier and concerns over the buyer's lack of e-auction knowledge. Also, lack of supplier participation is not significantly different between e-auction adopters and non-adopters. Most of the companies prefer to supply raw material by using e-auction channel.

Strategies are known as a factor for B2B integration stage and there are different strategies through procurement. First is to establish long-term supply relationship with specific buyer, second one is to purchase online for a better prices (using B2B auctions) and the last one is to combine both (sign a long-term purchase contract with a supplier up to a certain level, but if necessary additional quantity may be purchased online). Lee and Hausman study compares three different procurement

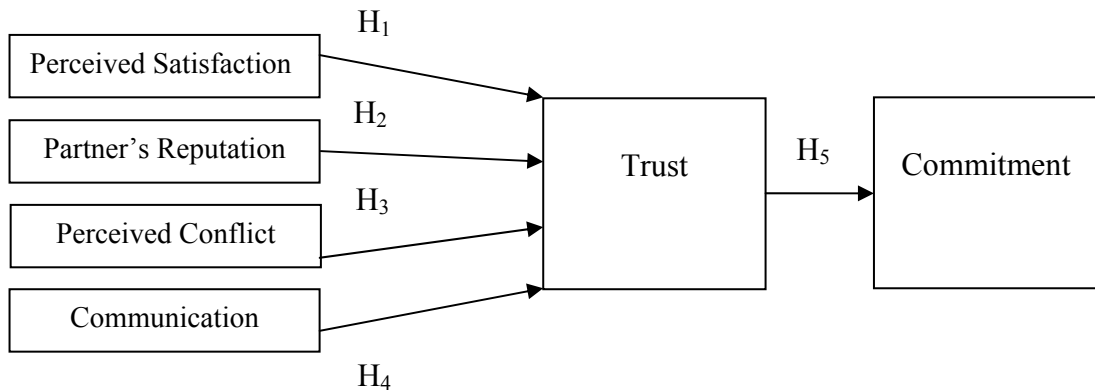
strategies and offers the conditions under which strategy are superior to others (Peleg, Lee, & Hausman, 2002).

Furthermore, the analysis underlines the fact that e-procurement opens up the possibility of the combined strategy and derives the optimal solution in the combined strategy. This type of strategy will be most desirable when a buyer wishes to procure a well-defined good, and the technology for its production exists among a group of suppliers. So, the company should trust the products quality and accuracy of information shared on the B2B portals.

Having an effective supply chain management is based on shared information and trust among partners. But information sharing sometimes needs to release some guarded information to partners that might have been or will be competitors. So, trust factor plays a key role in fostering commitment in supply chain relationships (Chu, 2006).

Suh's research findings indicate that the level of commitment strongly related to the level of trust. In this survey, Shu selects 1200 manufacturing industries as a sample from the Top 500 China Credit Information Service, Ltd and lists the drivers which can affect the trust during the commitments.

The results by using the model and statistical analysis show that perceived satisfaction, partners' reputation in the market and positive communication significantly affect the level of trust whereas perceived conflict negatively affect the level of trust. In addition, trust places significantly positive effect on the degree of commitment. These results not only manifest themselves as the effectiveness of the supplier's policies but also facilitate clear understanding of the development process of supply chain relationship.

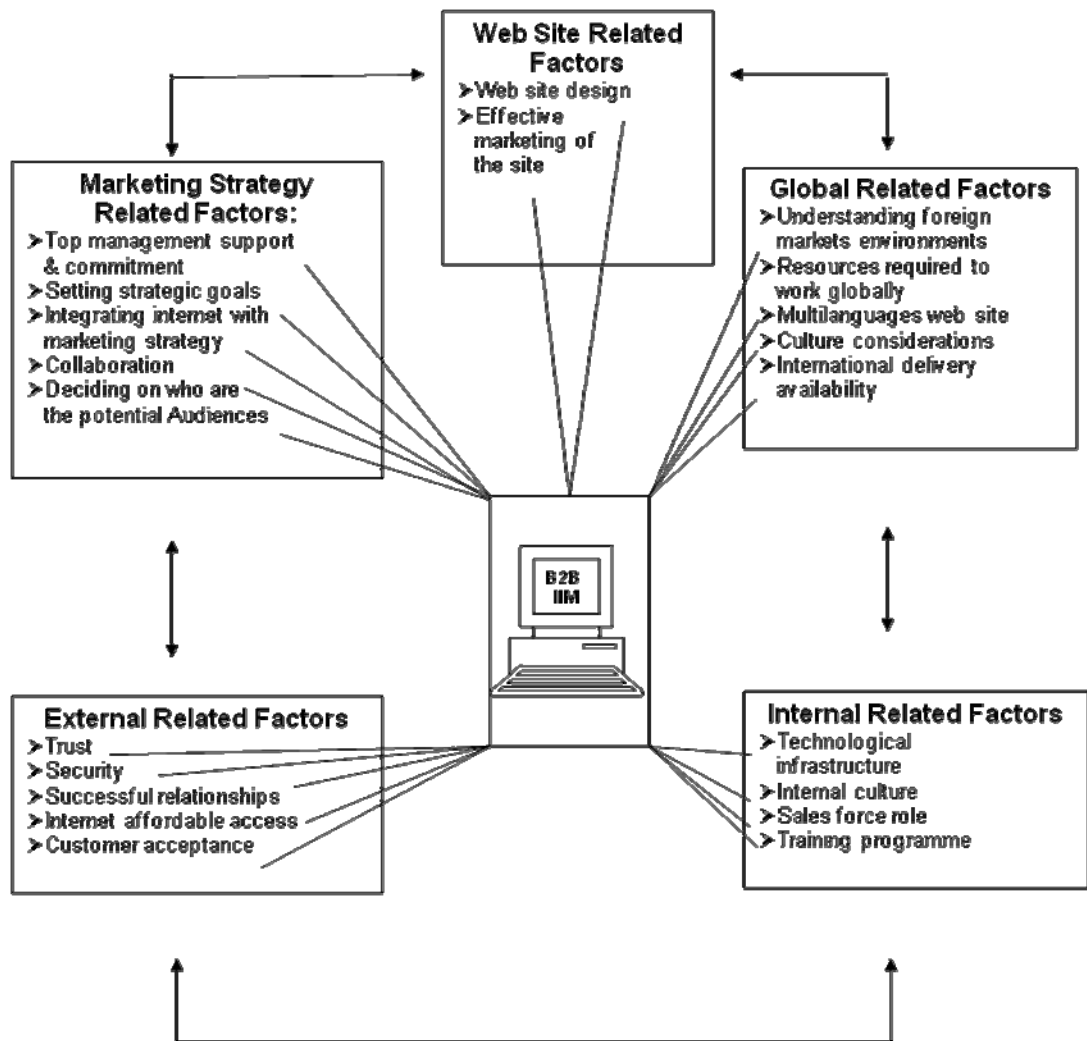


Source: Chu, 2006

Figure 2.4 Model of the Drivers of Commitment

There is a descriptive research about the B2B international internet marketing that mainly aims to identify the critical success factors for the companies at the stage of the global market entry with the title “A cross-industry review of B2B critical success factors” by Riyadh Eid, Myfanwy Trueman and Abdel Moneim Ahmed (Eid, Trueman, & Ahmed, 2002). Research includes various articles, empirical research, secondary case studies on B2B, international marketing, information technology and difficulties resulting from the these new trends.

In conclusion, research presents an extensive review in this area and identifies 21 factors that have a direct impact on successful implementation of the B2B international internet marketing, then these factors are grouped into five categories, which are; marketing strategies, web site, global dimension, external and internal related.



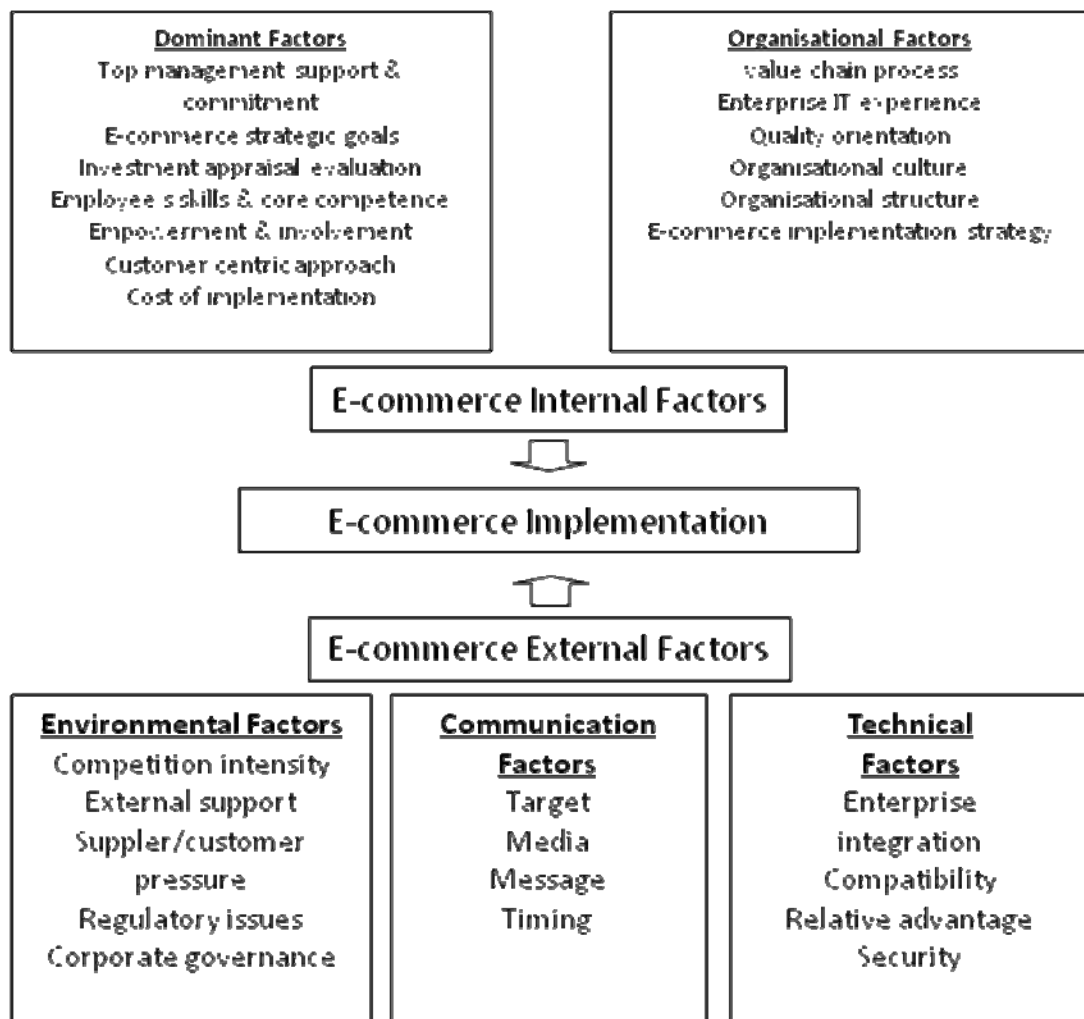
Source: Eid, Trueman, & Ahmed, 2002

Figure 2.5 Model of the B2B Critical Success Factors

During the literature survey of this research, researchers mention the benefits of internet and their tool which eliminate the prohibitive barriers for many companies to work globally. And the research explores a situation that %62 of the companies involved in the published case studies are USA based. After categorizing the five groups with 21 factors, the research does not evaluate the importance and effectiveness of success factors by applying empirical tests for the further researches.

It is known that e-procurement is the mirror image of e-commerce, examination of e-commerce implementation technologies will be needed for understanding the concept of B2B implementation process. There is an empirical research about the implementation of e-commerce with “Factors influencing the Implementation of e-commerce technologies by Financial Services in Saudi Arabia” title by Zairi and Alwabel (Zairi & Alwabel, 2005). This study aims to develop a model of e-commerce implementation and examines the factors which affect this implementation process.

In the research, there are five factors that influence the implementation of e-commerce. These are; dominant, organizational, environmental, communication and technological factors. Each of these five factors has its own sub-factors which are examined in the research. The data is collected by survey questionnaire from 294 Saudi financial service executive managers and participants are asked to show the level of their agreement or disagreement on a five-point likert type scale.



Source: Zairi & Alwabel, 2005

Figure 2.6 the Factors Influencing the Implementation of E-Commerce

There are 26 hypotheses in the study that are based on the purpose of finding the relation between independent variables and e-commerce implementation success as the dependent variable. Reliability, factor and multiple linear regression analysis are used for the research. Reliability analysis is used for constructing the validity of data and the reliability analysis shows that the data is reliable. Secondly, factor analysis is applied for underlying the dimensions of a questionnaire and results show that 62, 07% of the variance is explained by the five factors.

Finally, multiple linear regression analysis is used to test the hypothesis which shows the relation between dependent and independent variables. Results show that all the

predictor variables are significant and the table which presents the beta values that shows the strength of each predictor is listed below;

Table 2.3 Regression Analysis Results for the E-Commerce Implementation

	Coefficients		Coefficients	t	P-value
	β	Std. Error	Beta		
(Constant)	11.707	4.560		2.567	.011
Top management support and commitment	3.660	.621	.101	5.889	.000
E-commerce strategic goals	2.932	.661	.078	4.437	.000
Investment appraisal evaluation	2.078	.582	.060	3.570	.000
Employee's skills and core competence	3.566	.584	.100	6.104	.000
Empowerment and involvement	3.103	.511	.088	6.071	.000
Customer centric approach	2.949	.978	.068	3.015	.003
Affordable of resources	3.389	.629	.092	5.385	.000
Value chain process	3.010	.573	.079	5.254	.000
Enterprise IT experience	1.799	.608	.043	2.960	.003
Quality orientation	2.205	.723	.054	3.051	.003
Organisational culture	3.317	.626	.086	5.296	.000
Organisational structure	1.582	.639	.037	2.475	.014
E-commerce implementation strategy	2.523	.828	.074	3.048	.003
Competition intensity	2.903	.668	.071	4.350	.000
External support	2.714	.808	.065	3.361	.001
Supplier/customer pressure	1.737	.787	.047	2.206	.028
Regulatory issues	3.845	.668	.111	5.755	.000
Corporate governance	2.646	.733	.060	3.609	.000
Target	1.836	.857	.044	2.143	.033
Media	4.005	.696	.111	5.757	.000
Message	2.172	.750	.059	2.895	.004
Timing	3.742	.740	.096	5.055	.000
Enterprise integration	2.832	.626	.069	4.527	.000
Compatibility	4.198	.663	.113	6.330	.000
Relative advantage	3.336	.621	.083	5.374	.000
Security	2.914	.571	.068	5.107	.000

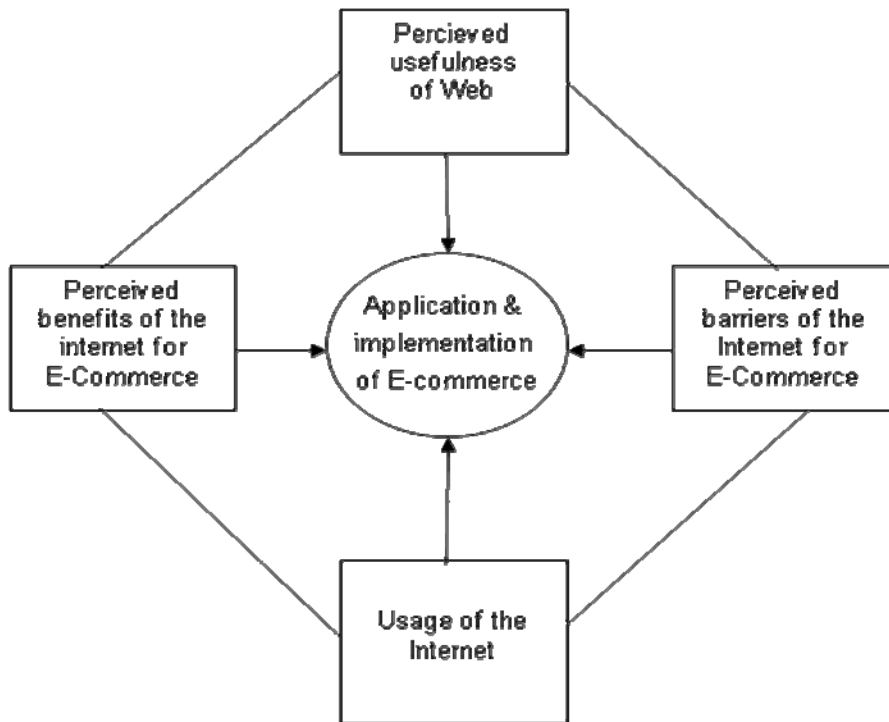
Source: Zairi & Alwabel, 2005

The beta weight demonstrates that compatibility is the strongest predictor followed by both regulatory issues and media, top management support and commitment, employee's skills and core competence, timing, affordable of resources, empowerment and involvement, organizational culture, relative advantage, value chain process, e-commerce strategic goals, e-commerce implementation strategy, competition intensity, enterprise integration, customer centric approach, security,

external support, corporate governance, investment appraisal evaluation, message, quality orientation, supplier/customer pressure, target and enterprise IT experience.

Consequently, it can be confirmed that there is a significant correlation between all independent variables and e-commerce implementation success. All independent variables are positively correlated with e-commerce implementation, which means that the positive perception of these variables let to higher e-commerce implementation success. In addition to this, compatibility level of e-commerce with the company's traditional operating procedures, the existing values and mentality of the people in the company will produce the companies' e-commerce adoption achievement.

An empirical analysis is used for Hong Kong's 108 small and middle sized companies by A. Gunesekaran and Nagai (Nagai & Gunesekaran, 2005) which investigates the concepts such as; barriers of internet, critical success factors and benefits of e-commerce. Research model covers 5 constructs as follows; perceived usefulness of web, perceived benefits of the internet for e-commerce, usage of the internet, perceived barriers of the internet, application and implementation of e-commerce.



Source: Nagai & Gunesekaran, 2005

Figure 2.7 Model of the Application and Implementation of E-Commerce

After shaping the related research model, researcher tests the results by employing the statistical analysis methods by using questionnaire. The main aims of these statistical analyses are to identify the major critical barriers and success factors for the implementation period of e-commerce.

Table 2.4 Critical Barriers and Success Factors for the E-Commerce Implementation

Building blocks for the adoption	Benefits	Barriers
Application of e-commerce and the internet in Hong Kong industries	Internet messaging, browsing, and downloading.	No connection, lack of knowledge of usefulness
Perceived benefits of the internet or e-commerce	Quick response to global information, improved customer service, low cost advertising, medium expansion into new global markets	Narrow perspectives of perceived usefulness of web pages for e-commerce, & web pages do not contribute to org. competitiveness
Perceived usefulness	Increase in international exposure, enhanced company image, and assistance to existing and potential customers	Lack of awareness of the major implications of e-commerce on organizational competitiveness, technical support, and some cultural influences
Perceived benefits of the Internet for e-commerce	Plan carefully, develop a sound system and standards, address security issues, educate the users and develop a tailor made e-commerce platform for HK customers	No legal framework, lack of security, difficulty in measuring the performance of e-commerce, justification of investment is problematic, lack of technical and development personnel, high set up costs and lack of qualified personnel to perform training and maintenance of Net facilities

Source: Nagai & Gunesekaran, 2005

Results are included in the appendix c section and show that more than 66% of respondents specifies their organization by using the internet several times a day to support company business activities and listing the factors which affect the e-commerce adoption.

After identification of the factors, researcher can make recommendations for the companies for improving the application and implementation of e-commerce in Hong Kong industries such as; companies should start with business objectives and then identify suitable information systems, increase the investment, establish e-commerce standards which can easily adopt for data collection and transmission.

Moreover, trust, pay security, payment mechanism, training, education, governmental support, establishing strategic alliances play a great role during the adoption of e-commerce.

Hong Kong e-commerce results include perceived benefits and barriers of the internet for e-commerce are shown below:

Table 2.5 Results of the Perceived Benefits of the Internet for E-Commerce

Perceived benefits of the internet for e-commerce (n =106)	Mean	Std. Dev.
Quick response and access to global information	4.245	0.741
Improved customer service	3.745	0.884
Low-cost advertising medium	3.519	0.907
Enhanced competitiveness (because competitors are already on the Net)	3.321	1.010
Low-cost entry to the Net for e-commerce	3.349	0.873
Expansion into new global markets	3.394	1.083

Source: Nagai & Gunesekaran, 2005

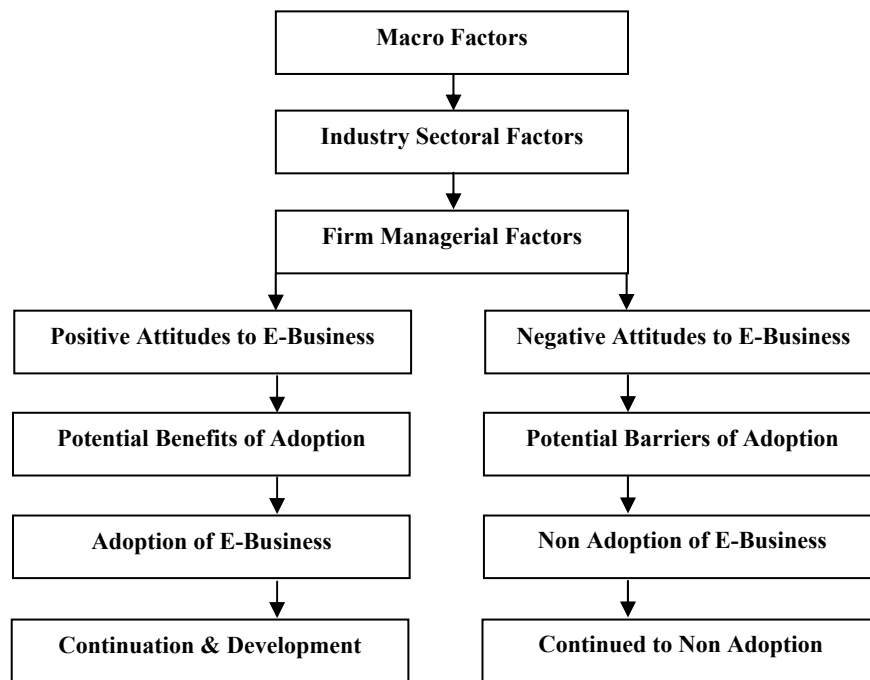
Table 2.6 Results of the Perceived Barriers of the Internet for E-Commerce

Perceived barriers of the internet for e-commerce (n =106)	Mean	Std. Dev.
No appropriate legal framework exists for conducting e-commerce on the Net	3.452	1.165
Lack of technical/development personnel	3.077	1.220
Lack of qualified personnel to perform training and maintenance of the Net facilities	3.000	1.199
Inadequate knowledge of using the Net for e-commerce	2.981	1.038
Lack of security that our company needs	3.423	1.103
Cost justification: justification for investment is problematic	3.133	1.144
E-commerce on the Net involves high set up cost	3.058	1.027
Hard to measure the investment return on e-commerce on the Net	3.204	0.994
Hard to measure how effective for conducting e-commerce on the Net	3.190	1.020

Source: Nagai & Gunesekaran, 2005

Understanding the tangible and intangible factors, before the quantitative testing of the model (which can impact upon the process of e-business development), is an important step. Macro factors such as; globalization, increased competition, EU/government policy and Industry/Sector factors can gain importance during the integration stage of e-business.

However, firm and managerial factors can play a positive or negative role to e-business development. Ian Fillis, Ulf Johansson, and Beverly Wagner form a model which reflects these factors in an effective way. In the model, firm/managerial factors cover the size of the firm, age of manager, gender of manager, education level, type of product, sets of business competencies. Firm/managerial factors are tied in to two parts such as; positive and negative attitudes to e-business (Fillis, Johansson, & Wagner, 2003). In conclusion, benefits of adoption are included to positive attitudes and implications of non-adoption are included to negative attitudes.



Source: Fillis, Johansson, & Wagner, 2003

Figure 2.8 Model of the E-Business Adoption

The overall aim of the paper is to analyze the factors which affect the companies' success in implementing and developing e-business activities and strategies. After construction of the model, researcher did not establish a quantitative test of the conceptual model, but the model is descriptive for identifying the steps of success for an effective e-business adoption.

For effective results, the model should be empirical tested which will allow for adjustments for more functional model. Some researchers whom form this model carry on that existing research to qualitative investigation and test the model with 18 small and medium sized companies by face to face with 7 research propositions which can be review at the appendix part. The interview results that come from the companies show that e-business development is affected by managerial factors, firm level, investment and training costs, internet connectivity, industry sectors, traditional business domination, business competencies and employees' technological adoption skills which have taken part in this research model.

CHAPTER 3

CONCEPTUAL FRAMEWORK

3.1 Research Model

All of the research models related to companies B2B overall use have been analyzed and it is found that there is no single research covers all of the factors that affect the B2B overall use. Research's main aim is to enlighten the knowledge about the factors and their effectiveness which are associated with the companies' B2B overall use in Turkey. The first step should be searching all of the drivers which are related to B2B overall use throughout the research model formation.

While shaping the research model, the study has benefited from the surveys (mentioned in literature review) which have proved hypothesis that are associated with the dependent variable. Research model has consisted of one dependent variable which is called B2B overall use and 28 independent variables.

3.1.1 Variable Groups

The independent variables are grouped into 5 groups according to their dependencies. Groups are as follows; managerial factors, organizational factors, perceived benefits of B2B, B2B portal based factors and external factors of B2B. Figure 3.1 provides the background information about the research model formation which is mentioned in the literature review section.

3.1.1.1 Perceived Benefits

Companies prefer to supply goods due to the benefits of B2B e-commerce methods which include decreased transaction costs, increased speed during transactions, decreased product price as result of using auctions and price competitions among the portal members of B2B user suppliers, improved operational control, and increased customer numbers.

3.1.1.2 Managerial Factors

Manager support to B2B e-commerce, budget for infrastructural investment in hardware equipment, recruiting employees according to their knowledge and competence, training budget for employees, manager recommendations to sales department, management trust to B2B portals, information concerns are independent factors which affect the dependent variable called B2B overall use as a managerial factor.

3.1.1.3 Organizational Factors

Companies' internet connection speed, technological compatibility of software, sector, size and purchasing raw material products rather than finished goods specifications are the organizational factors of companies which influence the B2B overall use according to recent researches in e-commerce field.

3.1.3.4 B2B Portal based Factors

While companies supplying and purchasing goods over the B2B portals, low commission rates, large number of B2B portal members, portals' improved design, multilanguage support of B2B portals, private auction support and collaboration

availability between portal members are the independent variables that form the portal based factors influence the B2B overall use.

3.1.3.5 External Factors

Generally, companies' B2B overall use influenced by the benefits of B2B overall use, managerial, organizational and portal based factors. Moreover, external based factors influence the B2B overall use according to recent studies and empirical analysis in this field. Especially, company suppliers' positive recommendations for B2B e-commerce, availability of goods supplied from portals, former long term contracts between supplier and company, sharing price and operational information through B2B portals are the independent variables mainly affect the dependent variable.

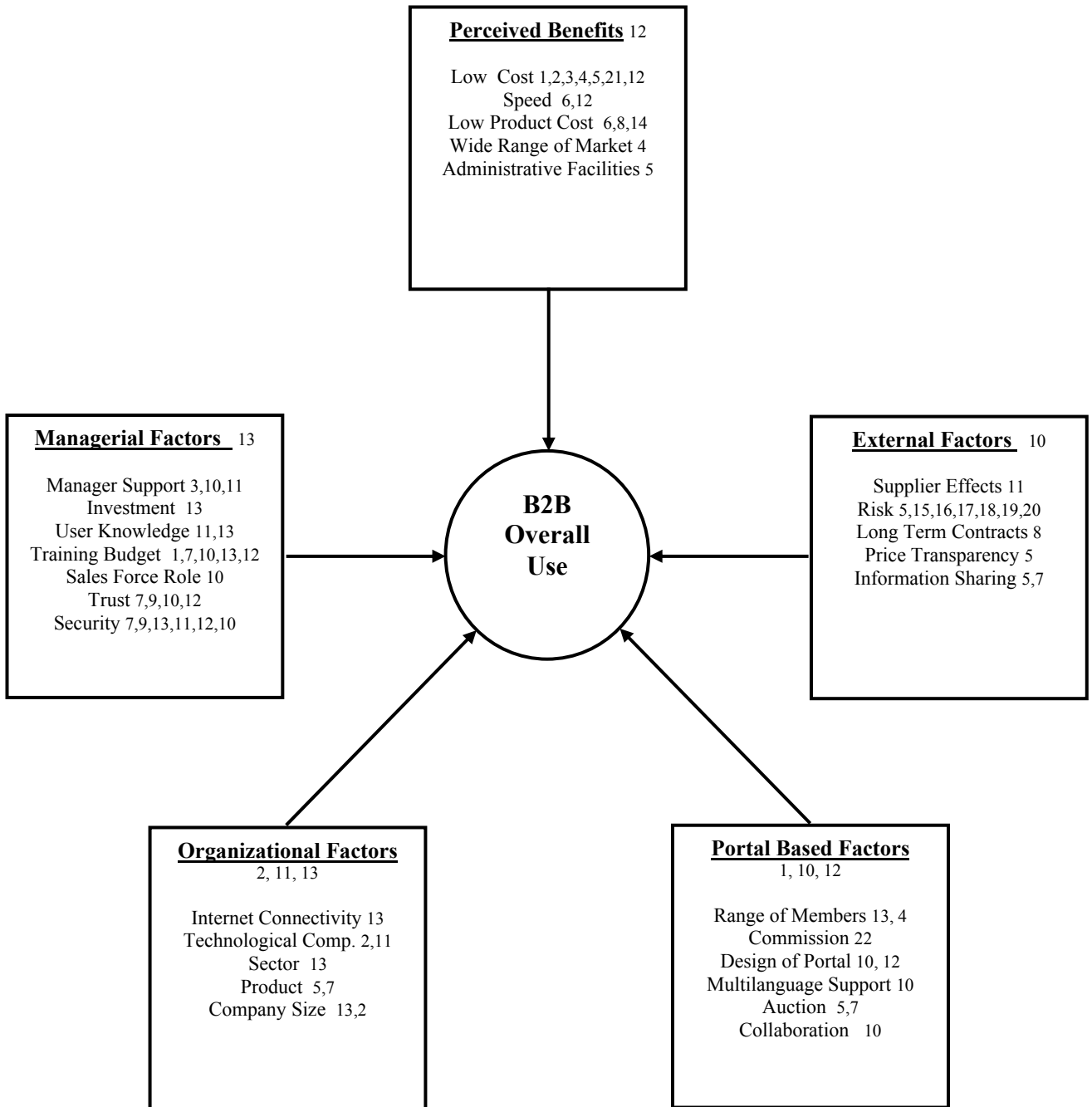


Figure 3.1 Proposed Model of the Research

Table 3.1 Literature Review Related with the Research Model

1	Boyer, & Olson. (2002)
2	Cindy, C., Karthik, I., & Richard, G. (2003)
3	William Atkinson. (2005)
4	Sunil Chopra, Daren Dougan, Gareth Taylor
5	Grey, Olanson and Shi (2005)
6	Carter, C., Kaufmann, L., Beall, S., Carter, P., Hendrick, T., & Petersen, K. (2004)
7	Hartley, J., & Lane, M. (2006).
8	Peleg, Lee, & Hausman. (2002)
9	Chu, S. -Y. (2006)
10	Eid, R., Trueman, M., & Ahmed, A. M. (2002)
11	Zairi, M., & Alwabel. (2005)
12	Nagai, E., & Gunesekaran, A. (2005)
13	Fillis, I., Johansson, U., & Wagner, B. (2003)
14	Chew, J., Temkin, D., & Hudson, R. (2003)
15	Emiliani, M. (2004a)
16	Emiliani, M., & Stec, D. (2004)
17	Jap, S. (2002)
18	Jap, S. (2003)
19	Smeltzer, L., & Carr, A. (2002)
20	Van Tulder, R., & Mol, M. (2002)
21	Berthon, P., Ewing, M., Pitt, L., & Naude, P. (2003)
22	Business (November 27, 2002)

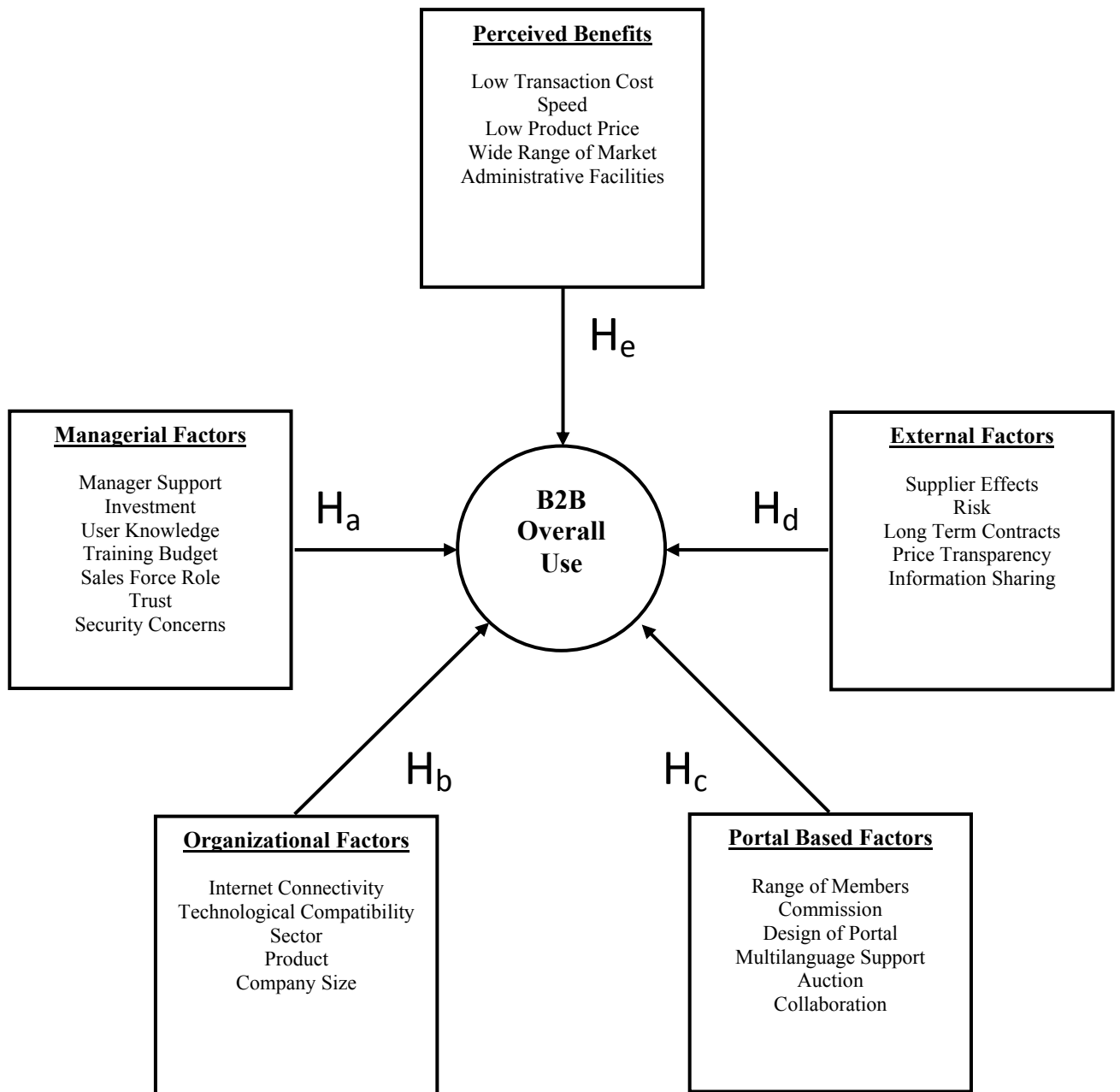


Figure 3.2 Proposed Model of the Research and Hypotheses

3.2 Hypotheses

There are five main hypotheses in this research which underline the relation between the related factors and companies' B2B overall use.

H_a: The managerial factors of companies influence B2B overall use.

H_b: The organizational factors of companies influence B2B overall use.

H_c: B2B Portal based factors influence B2B overall use.

H_d: External factors influence the company's B2B overall use.

H_e: Perceived benefits of B2B influence the B2B overall use.

Each of these five hypotheses has its own sub hypotheses. Generally, these five main hypotheses contain twenty eight sub hypotheses that are related to the dependent variable of the research model and these sub hypotheses are grouped according to their dependencies which are mentioned in the previous section. Besides, these sub hypotheses form the questionnaire which can be examined in the appendix d section.

3.2.1 Sub Hypotheses of the Perceived Benefits

- H1: Low transaction costs influence the B2B e-commerce overall use positively.
- H2: High speed influences the B2B e-commerce overall use positively.
- H3: Low product price influences the B2B e-commerce overall use positively.
- H4: High market range influences B2B e-commerce overall use positively.
- H5: Developed operational facilities influence B2B e-commerce overall use positively.

3.2.2 Sub Hypotheses of the Managerial Factors

- H6: Manager Support for B2B e-commerce influences B2B e-commerce overall use positively.
- H7: Company's increasing infrastructural investment influences B2B e-commerce overall use positively.
- H8: Recruiting employees according to their knowledge and competence influence B2B e-commerce overall use positively.
- H9: Increasing training budget for employees in the company influences B2B e-commerce overall use positively.
- H10: Manager Recommendations to sales department influence the B2B overall use positively.
- H11: Management trust to B2B portals influences the B2B overall use positively.
- H12: Securing information transfer influences the B2B e-commerce overall use positively.

3.2.3 Sub Hypotheses of the Organizational Factors

- H13: High internet connectivity influences B2B e-commerce overall use positively.
- H14: The compatibility of software with current B2B e-commerce systems influences B2B e-commerce overall use positively.
- H15: Company's sector influences the firms' B2B overall use.
- H16: Purchasing raw material products influence B2B overall use positively.
- H17: Increasing company size influences B2B overall use positively.

3.2.4 Sub Hypotheses of the B2B Portal Factors

- H18: Increasing number of B2B portal members influences B2B e-commerce overall use positively.
- H19: Decreasing B2B portal commission ratio influences B2B e-commerce overall use positively.
- H20: Improving design of the B2B portal influences the firms' B2B overall use positively.
- H21: Increasing Multilanguage support of B2B portals influences the firms' B2B overall use positively.
- H22: Private auction support of B2B portals influences the firms' B2B overall use positively.
- H23: Collaboration availability of B2B portals for the companies influences the firms' B2B overall use positively.

3.2.5 Sub Hypotheses of the External Factors

- H24: Supplier support for B2B e-commerce influences the firms' B2B overall use positively.
- H25: Availability of goods supplied from B2B portals influences B2B overall use positively.
- H26: Long Term Contracts influence the firms' B2B overall use.
- H27: Price transparency influences the firms' B2B overall use.
- H28: Company's operational information through the B2B portals influences B2B overall use.

CHAPTER IV

METHOD

The research method is based on quantitative analysis which generally searches information about the factors' effectiveness related to the company's B2B overall use in Turkey.

During the empirical analysis, the questionnaire which reflects the effectiveness of independent variables of companies' B2B overall use according to the research model will be formed. Based on literature review and case studies, the following scales to measure the constructs have been developed. Each item will be measured by using 5 point scale ranging from strongly disagree (1), disagree (2), neither agree nor disagree (3), agree (4) and strongly agree (5).

Data will be collected from the companies in Turkey which use B2B portals for purchasing, supplying and selling goods over the internet. Samples will be collected from those companies which prefer B2B portals, such as Boyex, Chemorbis and Alibaba. Answers to the questionnaire will be collected by e-mail and online web page surveys. Research questionnaire can be viewed in the appendix part.

The size of the company, product type, sector, internet connection speed and technological compatibility are the key elements of the companies for descriptive analysis.

The data, which is going to be gathered from the questionnaire, will be processed by Microsoft Excel software to prepare frequency distribution tables and charts for preliminary analysis. Afterwards, statistical analysis will be applied by using

reliability, linearity, multiple regression, multiple correlation, and ANOVA analysis tools of SPSS software with version 14.0.

4.1 Reliability Analysis

Reliability analysis is a way to test the selection of these groups to see whether they are correctly selected or not. In this research, there are five groups which are called perceived benefits, managerial factors, organizational factors, external and B2B portal related factors. Twenty eight independent variables form these groups. Cronbach alpha value is used to test the groups' validity. Five groups' reliability results show the validity of the selection of groups. If Cronbach alpha value of the variables that form a factor is greater than or equal to 0.70, test results will be significant and prove that every independent variable which forms that factor is truly selected. If there is an insignificant result then these variables will be taken to the next step of multiple regression analysis without any change, which means that these variables will be taken to next step alone.

4.2 Multiple Regression and Correlation Analysis

Multiple regression analysis and correlation analysis will be applied as a second step which investigates simultaneously the effect of several independent variables on a dependent variable. In the research B2B overall use of the companies in Turkey will be dependent variable and five factors will be the independent variables. Multiple regression analysis and correlation analysis cover following four steps.

First step is the linearity step. Pearson's' correlation value is used to measure the relationship between dependent and independent variables that examines the linearity. The result which measures the relationship between B2B overall use and five factors should be greater than or equal to 0, 70. If linearity is not at defined level, the model would be insignificant while the results below 0, 70 can be tolerable for the next step of multiple regression and correlation analysis.

The second step is multicollinearity step. Multicollinearity analysis examines the relationship between the independent variables. The relation of an independent variable with another independent variable is an unwanted situation. The elimination will be done between these independent variables. Simultaneously, if the linearity of the variable between the dependent variable is small then the independent variable will be eliminated. This step can eliminate one of five factors that are related to the research model.

Third step is measuring the significance of regression model. This step covers the examination of the explanatory power related to the research model. Explanatory power will be checked by “adjusted multiple R²” and must be higher than 0, 50. Results are exposed as proportions but, the conclusions must be done as percentage. If explanatory power is not higher than 50% in that case, the remained factors will be eliminated from the research model according to their significance of T value. The variable which has the highest significance of T value will be eliminated to the aim of increasing R² value. Validity of the level of explanatory power depends on the possibility of “significance of F value” to be smaller or equal to 0, 05. If significance of F value is smaller or equal to 0, 05 than it can be clarified that result are valid and meaningful.

Final step is the autocorrelation coefficient analysis. This analysis can be done if the significance of F value at the previous step is significant. Autocorrelation coefficient analysis employs the Durbin Watson value to test the research model. Durbin Watson value can clarify that the research model is significant or not. Durbin Watson statistic is considered according to the “dl” lower and “du” upper limits obtained from the Durbin Watson table by taking into consideration the number of independent variables determined and used in the research model. If the Durbin Watson value of the research model is in the “no autocorrelation” area, then statement about the research model’s validity can be made.

4.3 Analysis of Variance (ANOVA)

Analysis of variance is used to compare means of two or more variables. Sample means are compared in order to infer whether the means of the corresponding population distributions differ. With the help of ANOVA analysis it can be declared that different sectors and different size of companies can affect the companies' B2B overall use ratios. ANOVA allows for 75 companies' means to be compared in this research. Levene, F and Tukey tests are going to be used during the ANOVA analysis.

Levene test is the primary condition to start ANOVA analysis which examines the homogeneity of the research data. It tests the null hypothesis that the population variances are equal. If the result of Levene test is significant (the result of significance value is less than 0, 05 according to Levene test), the two variances are significantly different. If it is not significant (the result of significance value is greater than 0, 05 according to Levene test), the two variances are not significantly different (the two variances are approximately equal). F-test is applied if the result of Levene test is insignificant (the result of Levene test shows that research data is homogenous). F-test examines the existence of relationship between core concept and its subcategories. Tukey test helps to determine which subcategories of demographic variables that are measured in nominal scale cause F-test to be significant. In this research, size and sector of the company are the demographic variables which are going to be used at Tukey test.

4.4 Sampling

Data is collected from companies in Turkey which use B2B portals for purchasing, supplying and selling goods over the internet. Questionnaire is sent to 1500 companies which are the members of B2B portals, such as Boyex, Chemorbis, and Alibaba. Alibaba is international; Boyex and Chemorbis are local B2B e-commerce portals.

In this study, Alibaba B2B portal has been selected because of the highest member numbers compare to other B2B portals (3, 6 million registered member number among the 200 countries and alibaba.com.cn has nearly 21 million registered members across China (Alibaba)), being most visited B2B portal (according to alexa.com which explores the current traffic rankings for the web pages (Alexa)) and also being the most popular B2B portal among the world (Alibaba.com named one of the six “Best Sites for Global Entrepreneurs” according to Fortune magazine and won Forbes magazines’ “Best of the web” award during the last seven years (Alibaba)). Boyex and Chemorbis are selected because of their popularity and high member numbers mainly from Turkey (Boyex had increased 10 times the visitor number between 2001 and 2003 (Kurumsalport)) and leader portals in their sectors such as; chemicals and painting materials. Moreover, these two B2B portals support online auctions.

Answers to the questionnaire are collected by e-mail and online web page surveys. 89 companies answered the questionnaire, but 14 of them failed to answer the questionnaire properly. Finally, seventy five companies are participated in the research that can be examined at table 4.1.

Table 4.1 Sample Company Information Related to the Research

1	Kraft	Sector: Food	www.kraft.com
2	Turacs Automotive	Sector: Spare parts	www.turacs.com
3	Şahin İnşaat	Sector: Construction	www.sahininsaat.com

4	Bisbey Kimya	Sector: Chemicals	www.bisbeykimya.com
5	Bekotaş Boya	Sector: Chemicals	www.bekotas.com.tr
6	Alpdoğan İnşaat	Sector: Construction	www.alpdoganinsaat.com
7	Hekim Boya	Sector: Chemicals	www.hekimboya.com
8	Dorukan Boya	Sector: Chemicals	www.boyex.com
9	Ege Kimya	Sector: Chemicals	www.egekimya.com
10	Arı Boya	Sector: Chemicals	www.ariboaya.com
11	İz Boya	Sector: Chemicals	
12	Aydın İnşaat	Sector: Construction	www.aydinyapi.com
13	Can Etiket	Sector: Label	www.canetiket.com
14	Eksen Elektrik	Sector: Electrical Equipment and Supplies	
15	Boytek Kimya	Sector: Construction	www.boytek.com.tr
16	Solareks Isı	Sector: Electrical Equipment and Supplies	www.solareks.com.tr
17	Poliya Kompozit	Sector: Industrial Supplies	www.poliya.com.tr
18	Altınpınar Boya	Sector: Chemicals	www.altinpınar.com
19	Orion Tekstil	Sector: Textile and Leather	www.oriontekstil.com
20	Cardiff Hazırgiyim	Sector: Textile and Leather	www.carlopotti.com
21	Cena Yaş Meyva	Sector: Food	www.cena.com.tr
22	Güler Kozmetik	Sector: Cosmetics	www.discover.com.tr
23	Gms Elektrik	Sector: Electrical Equipment and Supplies	
24	Angın İnşaat	Sector: Construction	
25	Gema Madeni Yağ	Sector: Industrial Supplies	www.gemaoil.com
26	Euro Metal	Sector: Minerals, Metals and Materials	
27	Afe Olgunlar Makine	Sector: Industrial Supplies	www.afeolgunlar.com.tr
28	Bolero Tekstil	Sector: Textile and Leather	www.bolerosocks.com
29	Duruduş Akrilik Küvet Duş Kabin Sistemleri	Sector: Construction	www.durudus.com
30	Eken Ticaret Ltd	Sector: Food	www.ekenticaret.com
31	Bilkay Mermer	Sector: Minerals, Metals and Materials	www.bilkay.com.tr
32	Ayku İdeal Kalite Otomotiv Krnaksaft	Sector: Spare Parts	www.idealquality.com
33	PMC Madencilik	Sector: Minerals	pmcmaden.sitemynet.com
34	HTS	Sector: Furniture	
35	Senkron International	Sector: Food	www.senkrontarim.com
36	Öz İş Oto Yan San Ltd.	Sector: Spare Parts	www.oz-is.com.tr
37	Oğuzhançelik İskele ve Mermer San	Sector: Construction	www.oguzhaniskele.com
38	Canovate	Sector: Minerals, Metals and Materials	www.canovate.com
39	Yüksel Dorse	Sector: Spare Parts	www.yukseldamper.com
40	Torque Tuning	Sector: Spare Parts	www.torquetuning.com

41	MTC Foreign Trade Co.	Sector: Chemicals and Construction	www.mondialtr.com
42	Potansiyel Ltd	Sector: Foreign Trade	
43	Envo Group Ltd	Sector: Food	www.envo-group.com
44	Bursim Mühendislik ve Makina San.	Sector: Industrial Supplies	www.bursim.com
45	Oskara Gıda	Sector: Food	www.oskara.net
46	TravertenTürk	Sector: Minerals, Metals and Materials	www.travertenturk.com
47	Partner Ltd.	Sector: Foreign Trade	
48	Lazer Metal San ve Tic Ltd.	Sector: Foreign Trade	
49	GÖRTEKS	Sector: Spare Parts	www.gorteks.com.tr
50	Karahan Değirmencilik Ltd.	Sector: Food	www.karahanun.com.tr
51	Trextile	Sector: Minerals, Metals and Materials	www.trextile.com
52	Mertbey Dış Ticaret Ltd	Sector: Cosmetics	www.mertbey.com.tr
53	Fusion Dış Ticaret	Sector: Spare Parts	www.fusionseatingsystems.com
54	Meto Fermuar Aksesuar San ve Tic. A.Ş.	Sector: Textile and Leather	
55	CG Tekstil Ltd	Sector: Textile and Leather	
56	Aquaflex	Sector: Industrial Supplies	
57	Ay Tıbbi Cihazlar Ltd	Sector: Industrial Supplies	
58	Kalyoncular Plastik Vakum Ambalaj San Tic. Ltd.	Sector: Industrial Supplies	www.kalyoncular.com
59	Base Metal	Sector: Minerals, Metals	www.basemetal.com.tr
60	Gteks Gerger Tekstil San. ve Tic. A.Ş.	Sector: Food	www.gteks.com.tr
61	Semercioğlu Zeytin ve Yağ San.	Sector: Food	
62	Yakut Dış Ticaret	Sector: Minerals, Metals and Materials	www.yakutdisticaret.com
63	Kuleli Terazi	Sector: Industrial Supplies	www.kulleli-terazi.com
64	Yurtel Elektronik Pazarlama	Sector: Electrical Equipment and Supplies	www.yurtel.com.tr
65	Cesan Vinç	Sector: Spare Parts	www.cesavinc.com
66	Parçacı İş Mak. Ltd	Sector: Spare parts	www.parcaci.biz
67	Atölye Milenyum Ltd	Sector: Textile and Leather	www.signaro.com
68	Sentapol A.Ş.	Sector: Chemicals	www.sentapol.com
69	Dct Tarım	Sector: Industrial Supplies	www.dct-tarim.com
70	HSBM Dış Ticaret	Sector: Food	hsbmtrading.com
71	Hassu Bisiklet Ltd.	Sector: Metal and Plastic	www.hasbike.com.tr
72	Avrupa Aydınlatma San ve Tic Ltd.	Sector: Electrical Equipment and Supplies	www.stillcollection.com
73	Panoto Radyatör Mak.San.Ve Tic.A.Ş..	Sector: Industrial Supplies	www.panoto.com.tr
74	Cazibe Triko	Sector: Textile and Leather	www.cazibetriko.com
75	Termodin A.Ş.	Sector: Furniture	www.termodin.com

CHAPTER 5

EMPIRICAL RESULTS

The empirical results of the study have two sections. The first section provides findings obtained from descriptive statistics. The second section presents the findings obtained from hypotheses related to research model.

5.1 Descriptive Statistics

5.1.1 Descriptive Statistics for the Dependent Variable

The dependent variable of the research model is “B2B overall use” for the companies in Turkey and measured on a five point scale of “Strongly disagree” to “Strongly agree”.

Table 5.1 Results of the Descriptive Statistics for Dependent Variable

Descriptive Statistics for Dependent Variable				
	Min	Max	Mean *	Std. Dev.
B2B Overall Use	1	5	3,4	1,1344411
* On a scale of 1= Strongly Disagree to 5=Strongly Agree				

According to the findings, most of the companies use B2B e-commerce for purchasing and selling goods over the internet (Mean rating of "B2B overall use" is 3, 75 over 5, which is above the average rating of 3). That is an expected result,

because the data is collected from the companies in Turkey which are the members of B2B e-commerce portals.

5.1.2 Company Characteristics

In this study, sector name, internet connection speed, compatibility of software for B2B usage and company size information are used for analyzing the company characteristics.

Approximately, there are 9 equal numbered sector names based on the research findings which are; food, construction, spare parts, chemicals, electrical equipment and supplies, industrial supplies, textile and leather, minerals, metals and materials, others.

Table 5.2 Companies' Sector Names

Sector Names	Percentage Results (%)
Food	13,33
Spare Parts	13,33
Construction	10,67
Chemicals	12,00
Electrical Equipment and Supplies	6,67
Industrial Supplies	13,33
Textile and Leather	9,33
Minerals, Metals and Materials	10,67
Others	10,67
75 Companies Participated to The Research	

Internet connection speed and compatibility of software for B2B usage are at satisfactory level (The mean rating of “internet connection speed” is 3, 9 and “compatibility of software” is 3, 74 over 5, which are above the average rating of 3).

At the same time, 81, 3% of the companies in sample range have web pages (61 Companies have web pages over 75 sample companies) and these findings show

that companies in Turkey support new way of technology called e-commerce and closely chase the technological improvements. Majority of the companies do not discriminate between raw materials and finished goods while purchasing products. (Mean rating of "product type" is 2,48 over 5, which is below the average rating of 3).

Table 5.3 Results of the Descriptive Statistics for Company Characteristics

Descriptive Statistics for Company Characteristics				
	Min	Max	Mean *	Std. Dev.
Internet connection Speed	1	5	3,942857143	0,961365
Compatibility of Software	1	5	3,742857143	1,031191
Product Type	1	5	2,485714286	1,176372
* On a scale of 1= Strongly Disagree to 5=Strongly Agree				

Company size is categorized as small, middle and large. Research findings show that respondent companies are generally middle and small sized companies.

Table 5.4 Results of the Descriptive Statistics for Company Sizes

Descriptive Statistics for Company Size		
	Number in Sample	% in Population
Small Sized	27	36,00
Middle Sized	41	54,67
Large Sized	2	2,67
Total	75	100,00

5.1.3 Descriptive Statistics for the Independent Variables

The descriptive statistics for the independent variables which influence dependent variable according to research model are analyzed by using mean tables (measured on a five point scale of “Strongly disagree” to “Strongly agree”) listed below.

Table 5.5 Results of the Descriptive Statistics for Independent Variables

Descriptive Statistics for Independent Variables				
	Min	Max	Mean	Std. Deviation
Low Transaction Cost	1	5	3,94286	1,04792
Low response time	1	5	4,12857	0,931283
Low Product Price	1	5	3,41429	1,109809
Wide Range of Customers	2	5	4,24286	0,788242
Improved Administrative Facilities	1	5	3,51429	1,113069
Manager support to B2B	1	5	3,82857	0,99231
Investment In Infrastructure	1	5	3,61429	1,170815
Employee's knowledge	1	5	3,55714	1,162652
Training Investment	1	5	3,15714	1,175051
Sales force	1	5	3,04286	1,01347
Trust	1	5	3,12857	0,976854
Number of Portal Members	1	5	3,91429	0,974201
Low Commission Rate	1	5	3,35714	1,063706
Portal Design	1	5	4,27143	0,849918
Multilanguage Support	1	5	4,01429	0,924589
Auction Support	1	5	3,67143	1,017548
Collaboration Availability Between Portal Members	1	5	4,04286	0,875359
Supplier Effect	1	5	3,1	1,023634
Uncertainty	1	5	3,01429	1,014287
Security Transfer	1	5	2,94286	0,930727
Long term contracts	1	5	3,3	1,054322
Price Transparency	1	5	2,7	1,171522
Sharing Info	1	5	2,75714	1,290273
* On a scale of 1= Strongly Disagree to 5=Strongly Agree				

Descriptive findings support that, companies in Turkey are aware of the benefits of B2B, especially wide range of customers, lower response time and low transaction costs are the key elements for the companies which let them use B2B. (The mean

rating of “wide range of customers” is 4, 24, “low response time” is 4, 12 and “low transaction cost” is 3, 94 over 5, which are above the average rating of 3).

Managerial factors such as; manager support to B2B, infrastructural investment and employee competency seem to be at satisfactory level. However, trust, sales staff role, secure information transfer and training investments are not at satisfactory level (The mean rating of “manager support to B2B” is 3, 82, “infrastructure investment” is 3, 61, “employee competency” is 3, 56, “trust” is 3, 13, “sales staff role” is 3, 04, security transfer is 2, 94 and “training investments” is 3, 16 over 5).

Companies believe that B2B portal based factors positively influence B2B overall use. Design of portal, collaboration availability with the portals’ existing members, multilanguage and private auction support of B2B portal, range of portal members and portals’ low commission rates affect companies’ B2B overall use in Turkey. (“Design of portal” mean= 4, 27, “collaboration availability with the portals’ existing members” mean= 4, 04, “multilanguage support” mean= 4, 01, “private auction support” mean= 3, 67, “range of portal members” mean= 3, 91, “low commission rate” mean= 3, 35 on a scale of 1 to 5, which are above the average rating of 3).

Descriptive finding shows that majority of the companies believe that the long term agreements between the suppliers and company do not decrease the B2B overall use and suppliers generally recommend companies to use B2B e-commerce during their transactions. Also, companies believe that they can supply every kind of products through the B2B portals (The mean rating of “long term contracts” is 3, 3, “supplier effect” is 3, 1 and “uncertainty” is 3, 01 over 5, which are above the average rating of 3).

At the same time, companies do not want to share the product price and the operational information through the B2B portals (“Price transparency” mean= 2, 7, “sharing info” mean= 2, 75 on a scale of 1 to 5).

5.2 Statistical Analysis

In this section sample data is tested by reliability, multiple regression and correlation, and ANOVA analysis.

5.2.1 Reliability Analysis

Reliability analysis has two steps. First one examines the internal consistency of 28 variables which form the research model. And second step is a way to test the selection of five groups to see whether they are correctly selected or not. Cronbach Alpha value is used to test the internal consistency of 28 variables and five groups' validity.

Cronbach Alpha value of 28 variables is 0, 888, which is greater than the limit of 0, 70. Subsequently, the research data is reliable.

Table 5.6 Results of the Reliability Analysis

RELIABILITY ANALYSIS - SCALE (ALPHA)	
Reliability Coefficients	
N of Cases = 75,0	
Alpha = ,8884	N of Items = 28

Five groups contain 28 independent variables that are related to the research model and Cronbach Alpha values of the groups are as follows;

Table 5.7 Results of the Reliability Analysis

Perceived Benefits	Low transaction cost, speed, low production cost, wide range of market, administrative facilities	0,746
Managerial Factors	Manager support, investment, user knowledge, training budget, sales force role, trust, security	0,824
Organization Factors	Internet connectivity, technological compatibility, product, company size	0,47
B2B Portal Based Factors	Member number of portal, commission rate, design of portal, multilanguage support, auction support, collaboration availability	0,739
External Factors	Supplier effect, risk, long term contracts, price transparency, information sharing	0,675

Perceived benefits, managerial factors, B2B portal based factors have Cronbach alpha values that are greater than or equal to 0.70. And external factors' Cronbach alpha value is very close to 0, 70. Therefore, test results will be significant and prove that all of the independent variables which form that factor are truly selected with the exception of the organizational factors.

Organizational factors' Cronbach Alpha value is lower than 0, 70. Besides, the variable of the organizational factors called "sector type" is a nominal data that is going to be examined by ANOVA analysis. Four factors are remained which are going to be tested by multiple regression and correlation analysis methods.

Renewed model is shown as:

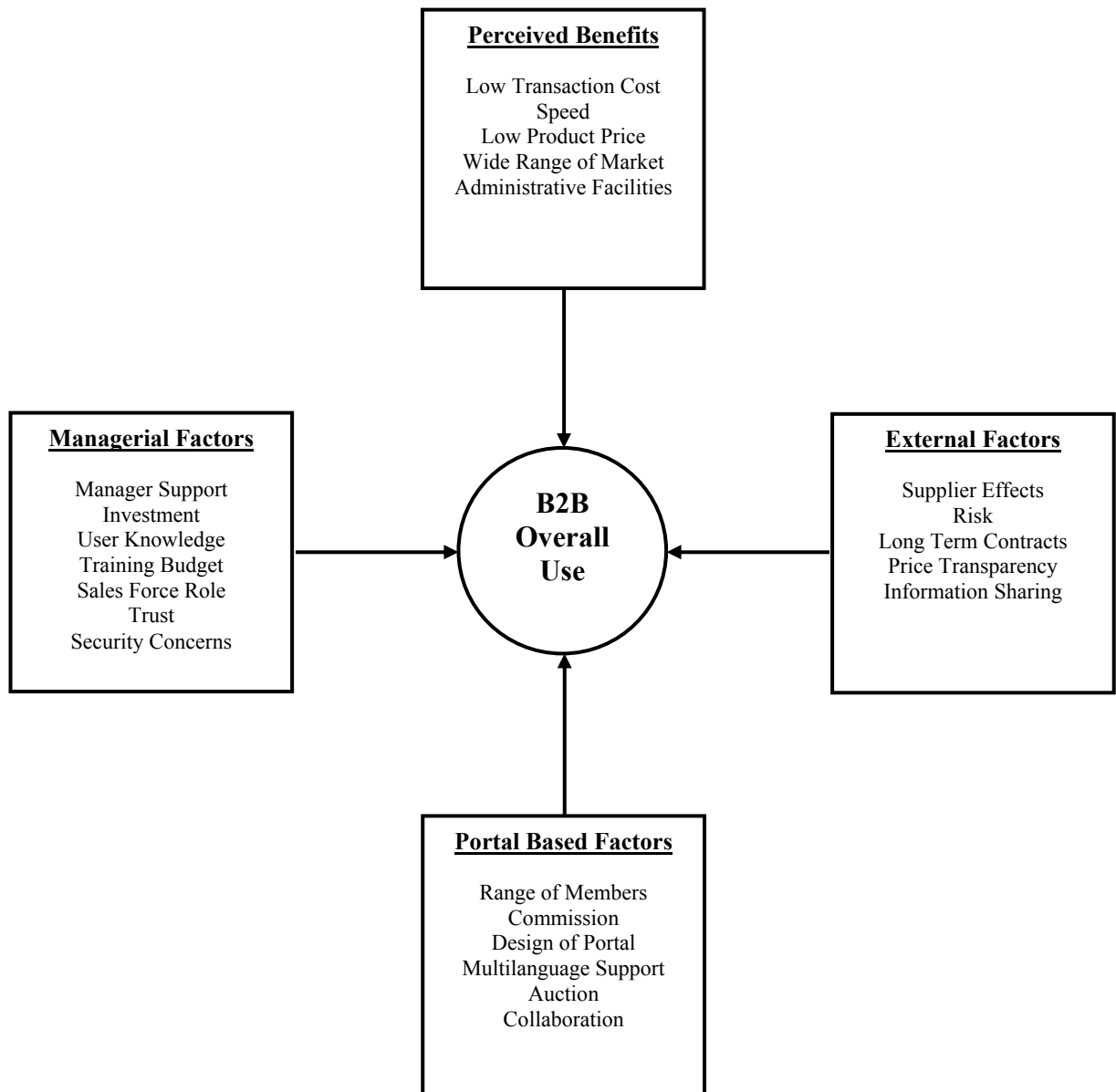


Figure 5.1 Revised Research Model

5.2.2 Multiple Regression and Correlation Analysis

Multiple regression and correlation analysis will be applied as a second analysis which investigates simultaneously the effect of 4 groups with 23 independent variables on a dependent variable called B2B overall use. First step is linearity step;

Pearson's' Correlation value is used to measure the relationship between 4 groups according to renewed research model and independent variables that examines the linearity. Following table visualizes the statistical results of linearity analysis;

Table 5.8 Results of the Linearity Analysis of Revised Research Model

		B2B Use	Benefit	Manager	B2B	External
B2B Use	Pearson Correlation	1	0,773	0,664	0,461	0,53
	Sig. (2-tailed)	,	0	0	0	0
	N	75	75	75	75	75
Benefit	Pearson Correlation	0,773	1	,649	,448	,459
	Sig. (2-tailed)	0	,	0	0	0
	N	75	75	75	75	75
Manager	Pearson Correlation	0,664	0,649	1	,206	,517
	Sig. (2-tailed)	0	0	,	0,176	0
	N	75	75	75	75	75
B2B portal	Pearson Correlation	0,461	0,448	0,206	1	,396
	Sig. (2-tailed)	0	0	0,076	,	0
	N	75	75	75	75	75
External	Pearson Correlation	0,53	0,459	0,517	0,396	1
	Sig. (2-tailed)	0	0	0	0	,
	N	75	75	75	75	75

The result measures the relationship between B2B overall use and four factors' Pearson Correlation values should be greater than or equal to 0, 70. Perceived benefits' linearity with B2B overall use is significant and managerial factors' linearity with dependent variable is very close to 0, 70 (value of the limit for significance). B2B portal based factors' and external factors' Pearson Correlation values are below 0, 70, but this result can be tolerable for the next step of multiple regression and correlation analysis.

Multicollinearity analysis is the second step which analyzes the relationship between the independent variables. The relation of an independent variable with another independent variable is an unwanted situation. Previous table shows the relationship between the independent variables by using Pearson Correlation value. According to the table four factors Pearson Correlation values are below 0, 70, and then it can be declared that there is no multicollinearity problem between the four groups of the research model.

Third step is measuring the significance of regression model. This step covers the examination of the explanatory power related to the research model. Explanatory power will be checked by “adjusted multiple R²” and is 0, 657 according to table 5.9 which is higher than 0, 50 of significance level.

Table 5.9 Results of the Significance of Regression Model

Model	R	R Square	Adjusted R square	Std.Error of the Estimate	Durbin - Watson
1	0,822	0,676	,657	0,65968	2,4
a. Predictors: B2B Portal, Managerial, External, Perceived Benefits					
b. Dependent Variable: B2B Overall Use					

Validity of the level of explanatory power depends on the possibility of “significance of F value” to be smaller or equal to 0, 05. Table 5.10 shows that, F value is smaller or equal to 0, 05. Then, it can be clarified that research results are valid and meaningful.

Table 5.10 Results of Testing the Significance of F Value

Model	Sum of Squares	Df	Mean Square	F	Sig
Regression	63,538	4	15,884	36,501	0,000
Residual	30,462	70	0,435		
Total	94	74			
a. Predictors: B2B Portal, Managerial, External, Perceived Benefits					
b. Dependent Variable: B2B Overall Use					

Afterwards, the remained factors are eliminated from the model according to their significance of T value. External factors' significance value is greater than 0, 05 (significance level must be lower than 0, 05), then external factors are eliminated from the research model and previous step is repeated.

Table 5.11 Results of Testing the Significance of T Value

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 Constant	-2,433	,549		-4,434	,000
MANAGER	,387	,146	,257	2,653	,010
EXTERNAL	,177	,131	,115	1,358	,179
BENEFIT	,782	,158	,489	4,952	,000
B2B	,255	,143	,143	1,785	,079
a. Dependent Variable: B2B Overall Use					

After elimination of external factors, explanatory power value of the model is 0, 653 according to table 5.11. Also, table 5.13 shows that “significance of F value” is smaller or equal to 0, 05, so the research model's explanatory power value is valid.

Table 5.12 Results of the Significance of Revised Regression Model

Model	R	R Square	Adjusted R square	Std. Error of the Estimate	Durbin-Watson
1	0,817	0,677	,6543	0,6636	2,431
a. Predictors: B2B Portal, Managerial, Perceived Benefits					
b. Dependent Variable: B2B Overall Use					

Table 5.13 Results of Testing the Significance of F Value

Model	Sum of Squares	Df	Mean Square	F	Sig
Regression	62,735	3	20,912	47,489	,000
Residual	31,265	71	0,44		
Total	94	74			

a.Predictors: B2B Portal, Managerial, Perceived Benefits
b.Dependent Variable: B2B Overall Use

Managerial factors, perceived benefits, B2B portal based factors have significant T values (Their significance T values are smaller than 0, 05). So, there is no need to eliminate one of these factors from the research model.

Table 5.14 Results of Testing the Significance of T Value for Final Research Model

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
2 Constant	-2,410	,552		-4,369	,000
BENEFIT	,793	,159	,496	5,000	,000
B2B	,313	,137	,176	2,081	,026
MANAGER	,459	,136	,305	3,369	,001

Final step is the autocorrelation coefficient analysis. This analysis can be done, because the significance of F value at the previous step is significant. Durbin Watson value can clarify that the model is significant. According to Table 5.12, Durbin Watson value is 2,431 which is in the “no autocorrelation” area, afterwards it can be clarified that the research model is valid. Final research model is as follows;

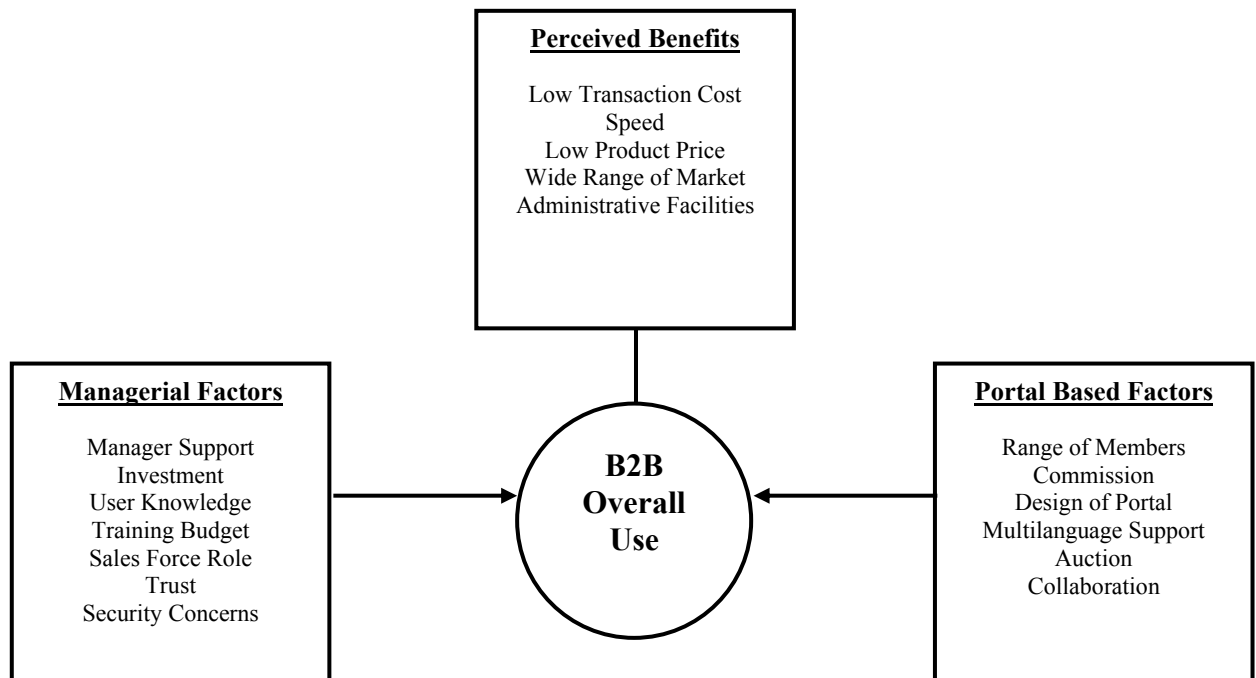


Figure 5.2 Final Research Model

Statistical results show that H_a (Managerial Factors, $\beta = .305$; $p < 0.01$), H_e (Perceived Benefits, $\beta = .496$; $p < 0.01$) and H_c (B2B Portal Based Factors, $\beta = .176$; $p < 0.05$) are related to B2B e-commerce overall use of companies in Turkey. According to the research findings; B2B overall use of company is mainly affected by the benefits of B2B e-commerce and the companies' managerial decisions while establishing transactions over B2B portals. Also, B2B portal based factors are positively associated with companies' B2B overall use throughout the companies' B2B e-commerce transactions.

5.2.3 Analysis of Variance (ANOVA)

B2B Overall Use – Size

Table 5.15 Frequency Distributions for the Company Sizes

	N	Mean	Std.Dev	Std.Error	%95 Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	29	3,2414	1,122	0,208	2,814	3,668	1	5
2	44	3,5227	1,13	0,17	3,179	3,866	1	5
3	2	3	1,414	1	-9,706	15,706	2	4
Total	75	3,4	1,127	0,13	3,14	3,659	1	5

Table 5.16 Results of the Levene Statistics

Levene Statistics	df1	df2	Sig
0,115	2	72	0,892

Levene statistic results prove that variances are homogeneous ($p > 0,05$) and according to ANOVA analysis, there is no relationship between company size and B2B overall use ($F_{0,05;2-72} = 0,668$, $p > 0,05$).

Table 5.17 Results of Testing the Significance of F Value

Model	Sum of Squares	Df	Mean Square	F	Sig
Between Groups	1,712	2	0,856	0,668	0,516
Within Groups	92,288	72	1,282		
Total	94	74			

B2B Overall Use- Sector

Table 5.18 Frequency Distributions for the Companies' Sector Names

	N	Mean	Std.Dev	Std.Error	%95 Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	10	3,9	0,994	0,314	3,18	4,61	2	5
2	10	3	0,942	0,298	2,32	3,67	1	4
3	8	3,5	1,195	0,422	2,5	4,49	1	5
4	9	3,22	1,092	0,364	2,3	4,06	2	5
5	5	3,2	1,643	0,734	1,15	5,24	1	5
6	10	3,5	1,354	0,428	2,5	4,46	1	5
7	7	3,42	1,133	0,428	2,3	4,47	2	5
8	8	3,62	1,106	0,375	2,7	4,51	2	5
9	8	3,12	1,125	0,398	2,1	1,06	1	5
Total	75	3,4	1,127	0,13	3,1	3,659	1	5

Table 5.19 Results of the Levene Statistics

Levene Statistics	df1	df2	Sig
,865	8	66	,551

Levene statistic results prove that variances are homogenous ($p > 0,05$) and according to ANOVA analysis, there is no relationship between companies' sector and B2B overall use ($F_{0,05.8-66} = 541$, $p > 0,05$).

Table 5.20 Results of Testing the Significance of F Value

Model	Sum of Squares	Df	Mean Square	F	Sig
Between Groups	5,780	8	,723	,541	,822
Within Groups	88,220	66	1,37		
Total	94	74			

CHAPTER 6

CONCLUSIONS

In today's world competitive environment for companies, globalization effects, technological improvements and new way of transaction called e-commerce with the boosted internet usage ratio lead companies to use B2B channels for purchasing and selling goods by focusing on reduced transaction times, decreased product costs, increased operational control and customer numbers.

Although, companies should integrate all the layers of their businesses and related business applications to gain more output from B2B during the integration period, companies face difficulties and tradeoffs that will discourage their adoption process. The difficulties can be listed as; price transparency, uncertainty of supply, sharing company internal information about their products, misleading perceptions for B2B integration, preference for long term relations with few partners instead of using online auctions or e-procurement systems and trust to B2B e-commerce portals.

This research's main aim is to look at the factors which affect the B2B overall use and measure the drivers that affect the B2B adoption process for companies in Turkey. The factors that are effective for B2B overall use provide considerable educational framework for company managers, B2B integration consultant companies and B2B portals for increasing the level of B2B integration. Throughout the research, it is examined that there are not sufficient numbers of empirical evidences related to the factors which affect the B2B overall use of the companies in Turkey. Entire empirical studies defined the benefits and the barriers of e-commerce adoption successfully in Turkey, but none of them provide a research model that identifies and measures the related factors' effectiveness in Turkey. So, the first step

should be searching all of the drivers which are related to B2B overall use during the research model formation and applying the empirical tests for realizing the aim of the research.

In the time of determining the research model, research has benefited from the surveys which are mentioned in literature review and these are the proved hypotheses that are associated with the dependent variable called B2B overall use. The research model covers five main hypotheses which underline the relation between the related factors and B2B overall use of the companies. Each of these five hypotheses has its own sub hypotheses and these five main hypotheses contain twenty eight sub hypotheses which are related to the dependent variable of the research model and these sub hypotheses are grouped according to their dependencies. Research models' five main factors are as follows; managerial factors, organizational factors, perceived benefits of B2B, B2B portal based factors, external factors of B2B. These sub hypotheses form the questionnaire and each item is measured by using 5 point scales. Afterwards, questionnaire is sent to the members of B2B portals to collect data such as; Alibaba, Chemorbis and Boyex. Subsequently, statistical analysis is applied during the empirical analysis by using reliability, linearity, multiple regression and correlation, and ANOVA analysis tools of SPSS software with version 14.0.

Empirical results of the study begin with providing the findings obtained from descriptive statistics and the following section presents the findings obtained from hypotheses related to the research model. Descriptive statistics results are based on analyzing the frequency distribution tables related to dependent variable, company characteristics and rest of the independent variables of the research model.

Descriptive statistics demonstrate that most of the companies use B2B e-commerce for purchasing and selling goods over the internet in Turkey (Mean rating of "B2B overall use" is 3, 75 over 5, which is above the average rating of 3). This result underlines that B2B portal members frequently use B2B e-commerce throughout their transactions and companies are realizing the benefits of B2B e-commerce.

Descriptive statistics show that research data is collected from the companies which have 9 different sector names while the sector groups have equal number of

companies. The respondent companies are generally middle and small sized companies. (27 companies are small sized, 41 companies are middle sized, and 2 companies are large sized above the 75).

Internet connection speed and compatibility of software for B2B usage are at satisfactory level (The mean rating of "internet connection speed" is 3, 9 and "compatibility of software" is 3, 74 over 5, which are above the average rating of 3). In addition, 81, 3% of the companies in sample range have web pages (61 Companies have web pages over 75 sample companies) and these findings show that companies in Turkey support new way of technology called B2B e-commerce and closely chase the technological improvements.

The study shows that majority of the companies do not discriminate between raw materials and finished goods while purchasing products. (Mean rating of "product type" is 2, 48 over 5, which is below the average rating of 3). That is an unexpected result, generally it is expected that companies prefer to purchase raw materials rather than finished goods because of the companies' concerns about the quality of the product. The main reason of this result could be that the companies give more importance to the other benefits of B2B e-commerce while purchasing good such as; low price and high speed.

Another descriptive finding of the study is that majority of the companies believe that the long term agreements between the suppliers and company do not decrease the B2B overall use and suppliers generally recommend companies to use B2B e-commerce during their transactions. Also, companies believe that they can supply every kind of products through the B2B portals (The mean rating of "long term contracts" is 3, 3, "supplier effect" is 3, 1 and "uncertainty" is 3, 01 over 5, which are above the average rating of 3).

At the same time, companies do not want to share the product price and the operational information through the B2B portals ("Price transparency" mean= 2, 7, "sharing info" mean= 2, 75 on a scale of 1 to 5).

Since the descriptive statistics have been analyzed, the following step is to examine research model by using reliability, linearity, multiple regression and correlation, and ANOVA analysis. Reliability analysis demonstrates that the research data is reliable and the selection of the four main factors are truly selected (Cronbach Alpha value of 28 variables is 0, 888 and perceived benefits, managerial factors, B2B portal based factors, external factors Cronbach Alpha values are greater than the limit of 0, 70).

The external and organizational factors are eliminated while the research model is revised by the findings of the statistical analysis which include linearity, multiple regressions and correlation analysis. The revised research model covers perceived benefits, managerial factors and B2B portal based factors and the dependent variable which is called B2B overall use. Statistical results show that H_a (Managerial Factors, $\beta = .305$; $p < 0.01$), H_e (Perceived Benefits, $\beta = .496$; $p < 0.01$) and H_c (B2B Portal Based Factors, $\beta = .176$; $p < 0.05$) are related to companies' B2B e-commerce overall use in Turkey.

Research findings show that perceived benefits of B2B with 0,496 β value mainly affect the companies' B2B overall use in Turkey. Decreased transaction costs, increased speed during transactions, decreased product prices as a result of using auctions and price competitions among the portal members of B2B user suppliers, increased customer numbers, and improved operational control increase the companies' B2B overall use in Turkey. Research findings also support an earlier research in e-commerce field by A. Gunesekaran and Nagai (Nagai & Gunesekaran, 2005) which shows the relationship between e-commerce usage and perceived benefits.

According to the research findings, managerial factors such as; high budget sharing for infrastructural investment in hardware equipment, recruiting employees according to their knowledge and competence, training budget for employees, manager recommendations to sales department, management trust to B2B portals and information concerns secondarily affect the B2B overall use of companies with 0,305 β value .

Low commission rates, large number of B2B portal members, portals' improved design, multilanguage support of B2B portals, private auction support and collaboration availability between portal members are the factors of B2B portal which affect the B2B overall use with low β value compare to perceived benefits and managerial factors.

As a result, the study proves that perceived benefits of B2B and companies' managerial factors extremely affect the company's B2B overall use in Turkey. Addition to prior researches, B2B portal factors affect the companies' B2B overall use positively.

This information can be very useful during B2B integration period. If company wants to integrate their company to B2B technology, first of all it should be aware of B2B e-commerce benefits and then should be supported by their management with increased training costs, competent staff, B2B oriented sales department and secured information transfer support. Moreover, B2B portals should give importance to their portals' design, commission rates, and collaboration availability between members of portal, multilanguage, and private auction support for companies.

6.1 Limitations and Implications for Further Research

B2B e-commerce is a new transaction method especially for companies in Turkey. There are not satisfactory numbers of researches about companies in Turkey which provide preliminary data for further researches. Therefore, while preparing the research model and questionnaire, recent studies from outside of Turkey are used.

Although, collecting sample data by face to face reviews could increase the answers reliability, sample data is collected from 75 companies in Turkey by using online questionnaire in order to gain speed and convenience. At the same time, applying e-mail and online web page surveys has side effects such as; respondent can charge another person to answer the questionnaire and respondent's concentration or motivation can be low while answering the questionnaire. During the research, sample data is collected from companies in Turkey which are the members of B2B portals as follows Boyex, Chemorbis and Alibaba. Companies in Turkey prefer to supply goods from the mentioned portals for their high usage level and member numbers.

It is believed that research questionnaire could be applied to other countries B2B e-commerce user companies by including corresponding questions in order to get comparative results which measure the cultural diversities. It is also important to mention that enlarged sample size could provide more effective and reliable results.

The research mainly focuses on small and middle sized companies. The limitation may occur because of not having the homogeneous distribution among company sizes to measure the relationship between B2B overall use and company size.

In the research questionnaire, research questions could cover the companies' operational registered data instead of covering employees' perceptions about the benefits of B2B e-commerce overall use. Companies' security concerns did not allow the research questions to cover operational information. Further researches may be able to cover companies' registered operational data.

In the research internet connectivity, company size, technological compatibility factors are used for descriptive analysis. For further researches, detailed technological facilities may be added to the research questionnaire.

This research examines the factors effectiveness of B2B overall use and provides considerable educational framework for B2B integration in Turkey. B2B e-commerce is an emerging way of transaction for the companies in Turkey and there is no satisfactory number of researches in Turkey which have focused on B2B e-commerce. There are new opportunities for the academics, who want to make research on B2B e-commerce, for instance the barriers of B2B and technological framework of companies may be discussed more exhaustively.

REFERENCES

- Al-Mashari, M., & Zairi, M. (2000). Supply-chain re-engineering using enterprise resource planning (ERP) systems: an analysis of a SAP R/3 implementation case. *International Journal of Physical Distribution & Logistics Management* , Vol. 30 Issue 3/4, pp. 2.
- Bibliography Alibaba. (n.d.). Retrieved September 20, 2007, from *Alibaba.com*: <http://www.alibaba.com/aboutalibaba/index.html>
- Alexa. (n.d.). Retrieved September 20, 2007, from *Alexa.com*:
Hyperlink "http://www.alexacom/browse?&CategoryID=3"
<http://www.alexacom/browse?&CategoryID=3>
- Angeles, R. (2000). Revisiting the role of Internet-EDI in the current electronic commerce scene. *Logistics Information Management* , Vol. 13 Issue 1, pp. 4557.
- Atkinson, W. (2005). *Tips for Long -Term Success*. purchasing.com.
- Arıkan S. (2002). Business to business electronic commerce and a study on B2B.
- Bayoğlu B. (2005). Effects of B2B e-marketplaces to the marketing strategies of companies.
- Berthon, P., Ewing, M., Pitt, L., & Naude, P. (2003). Understanding B2B and the Web, the acceleration of coordination and motivation. *Industrial Marketing Management* , Vol. 32 No.7, pp.553-61.
- Boyer, & Olson. (2002). Drivers of Internet Purchasing Success. *Production and Operation Management* , Vol. 11, No.4.
- Business, E. (November 27 2002). B2B Revisited.
- Çakmaklı İ. (2005). B2B e-business models and e-marketplaces.
- Carter, C., Kaufmann, L., Beall, S., Carter, P., Hendrick, T., & Petersen, K. (2004). Reverse auctions – grounded theory from the buyer and supplier perspective. *Transportation Research Part E* , Vol. 40 No. 3, pp. 229-54.
- Casati. (2001). E-business applications for SCM:challenges and solutions. *Proceedings of the 17th International Conference on Data Engineering*, (pp. pp. 71-78). Heidelberg, Germany,2-6 April.

Chew, J., Temkin, D., & Hudson, R. (2003). *ISM/Forrester report on e-business*. forrester.com/ER/Research/Brief/0,1317,16310,FF.html-January 31,2002 .

Cho, H., & Kulvatunyo, B. (September 2004). Using business process specifications and agents to integrate a scenario-driven supply chain. *Int.J.Computer Integrated Manufacturing* , Vol. 17, No. 6, 546-560 .

Chu, S. -Y. (2006). Exploring The Relationships of Trust and Commitment in Supply Chain Management . *The Journal of American Business* , Cambridge,Vol. 9, Num. 1.

Cindy, C., Karthik, I., & Richard, G. (2003). Predicting the level of B2B e-commerce in industrial organizations. *Industrial Marketing Management* 34 , 221-234.

Drucker, V. (2000). B2B Boom. *Global Finance*;
http://www.findarticles.com/p/articles/mi_qa3715/is_200004/ai_n8893387 .

Eid, R., Trueman, M., & Ahmed, A. M. (2002). A cross-industry review of B2B critical success factors . *Electronic network applications and policy* , volume 12, page 110-123.

Emiliani, M. (2004a). Sourcing in the global aerospace supply chain using online reverse auctions. *Industrial Marketing Management* , Vol. 33 No. 1, pp. 65-73.

Emiliani, M., & Stec, D. (2004). Aerospace parts supplier's reaction to online reverse auctions. *Supply Chain Management* , Vol. 9 No. 2, pp. 139-53.

Fillis, I., Johansson, U., & Wagner, B. (2003). A conceptualization of the opportunities and barriers to e-business development in the smaller firm. *Journal of Small Business and Enterprise Development* , Volume 11, pp. 349-361, Emerald search engine.

Gabbard, E. (2003). Electronic reverse auctions: the benefits and the risks. *Inside SupplyManagement* , Vol. 14 No. 10, pp. 32-6.

Grey, O., & Shi. (2005). The role of e-marketplaces in relationship-based supply chains. *IBM Systems Journal* , Vol 44, No 1.

Grey, Olanson, & Shi. (2005). The role of e-marketplaces in relationship-based supply chains. *IBM Systems Journal* , Vol 44, No 1.

Hartley, J., & Lane, M. (2006). Exploring the barriers to the adoption of e-auctions for sourcing. *International Journal of Operations & Production Management* , Vol. 26 No. 2, 2006pp. 202-221, Emerald search engine.

Hsieh, H., & Lin, B. (1998). Internet commerce for small businesses. *Industrial Management & Data Systems* , Vol. 98 Issue 3, pp. 113-119.

Jap, S. (2003). An exploratory study of the introduction of online reverse auctions. *Journal of Marketing* , Vol. 67 No. 3, pp. 96-108.

- Jap, S. (2002). Online reverse auctions: issues, themes, and prospects for the future. *Journal of the Academy of Marketing Science* , Vol. 30 No. 4, pp. 506-26.
- Kurumsalport. (n.d.). Retrieved September 20, 2007, from *Kurumsalport.com*:
<http://www.kurumsalportal.com/news10001106.asp>
- Lankford, W. M., & Johnson, J. E. (2000). EDI via the Internet. *Information Management & Computer Security* , Vol. 8 Issue 1, pp. 2730.
- Lee, & Whang. (2002). *Supply Chain Integration over the Internet*.
- Linthicum, D. (2000). *B2B application integration*. p 10.
- Min, H., & Galle, W. P. (1999). Electronic commerce usage in business-to-business purchasing. *International Journal of Operations & Production Management* , Vol. 19 Issue 9, pp. 909921.
- Meeker, C.P. (2000, April). The B2B Internet Report, Collaborative Commerce. *Internet Publication of Morgan Stanley Dean Witter, Equity Research North America*, pg. 25.
- Nagai, E., & Gunesekaran, A. (2005). E-commerce in Hong Kong an empirical perspective and analysis. *Emerald search engine* , Vol.15 No.2.
- Noyce, D. (2002). Analysis of business to business e-commerce and how research can adopt to meet future challenges. *International Journal of Marketing Research* , vol.44, quarter 1, p75.
- Peleg, Lee, & Hausman. (2002). Short-term e-Procurement Strategies versus Long-term Contracts. *Terman Engineering Center, Stanford University, Stanford, California* , 94305-4026.
- Smeltzer, L., & Carr, A. (2002). Reverse auctions in industrial marketing and buying. *Business Horizons* , Vol. 45 No. 2, pp. 47-53.
- Söylemez F. (2006). An evaluation of B2B electronic commerce applications for the top 1000 firms in Turkey and recommendations.
- Van Tulder, R., & Mol, M. (2002). Reverse auctions or auctions reversed: first experiments by Phillips. *European Management Journal* , Vol. 20 No. 5, pp. 447-56.
- Zairi, M., & Alwabel. (2005). "Factors Influencing the Implementation of E-Commerce Technologies by Financial Services in Saudi Arabia. *Working Paper No 05/17* , Ebscohost search engine.

Appendices

Appendix A: Example Questionnaire of “*Purchasing company factors*” Titled Research

Appendix B: Seven propositions of “*Qualitative investigation of smaller firm e-business development*” Titled Research

Appendix C: Test Results of “*E-commerce in Hong Kong an empirical perspective and analysis*” Titled Research

Appendix D: Questionnaire of the Research

Appendix E: Sample Data

Appendix F: Pie Charts of the Sample Data in Percentages

Appendix A Example Questionnaire of *Purchasing Company Factors*

A.1.1. STRATEGY

How important were the following factors in the decision to use Office Depot's online ordering system?

Likert scale ranging with:

1 _ not important, 4 _ somewhat important and 7 _ very important

A.1.1.1. Goals

- Cost
- Convenience
- Delivery speed

A.1.1.2. Admin

- Ability to track inventory
- Reduces paperwork
- Faster access to information
- Flexibility in order size

A.1.1.3. Delivery

- Order accuracy
- Customer service of system
- Security of system

A.1.2. ENVIRONMENT

The following questions are rated on a 7-point Likert scale ranging from 1 _ strongly disagree to 7 _ strongly agree.

A.1.2.1. Comfort

- I am knowledgeable about personal computer usage
- I am comfortable and experienced with the Internet
- I am proficient at fixing glitches when working on the computer
- I am good at resolving problems with computers

A.1.2.2. Adopt Level

- The decision to use online ordering for materials and supplies is made by higher level managers
- The choice of which web site to use for purchasing is made by higher level managers

A.1.2.3. Tech Support

- There is good technical support in my company

A.2. Internet Factors

A.2.1. INTERNET SPECIFIC.

The following questions are rated on a 7-point Likert scale ranging from 1 _ strongly disagree to 7 _ strongly agree.

A.2.1.1. Percuse

- Using Internet purchasing enables me to accomplish tasks such as order placement, order estimating and order tracking more quickly
- Using Internet purchasing improves my job performance
- Using Internet purchasing gives me greater control over my work
- Using Internet purchasing improves the quality of the work I do
- Using Internet purchasing improves my productivity
- Using Internet purchasing enhances my effectiveness on the job
- Using Internet purchasing makes it easier to do my job
- Overall, I find Internet purchasing technology useful in my job

A.2.1.2. Percease

- It is easy for me to remember how to perform tasks using Internet purchasing
- It is easy to get Internet purchasing to do what I want it to do
- My interaction with Internet purchasing is clear and understandable
- Overall, I believe that Internet purchasing is easy to use

A.2.1.3. Attitude

- I like using Internet purchasing
- Internet purchasing is fun to use
- I dislike using Internet purchasing (*R*)
- Internet purchasing provides an attractive working environment

A.2.2. SITE SPECIFIC.

Please rate the following aspects of Office Depot's Internet site (from 1 _ strongly disagree to 7 _ strongly agree).

A.2.2.1. Site Ease

- I can get on the site when I want to
- The site loads quickly
- The site is easy to navigate
- The site has a logical sequence of pages
- Office Depot web site is easy to search

A.2.2.2. Accuracy

- Contents on the web page are current with respect to *Price*
- Contents on the web page are current with respect to *New Items*
- Contents on the web page are current with respect to *In Stock Items*
- Contents on the web page are current with respect to *Promotions*
- Office Depot has my products in stock when I place an order

A.2.2.3. Transact

- I experience difficulties *placing an order* when using the online ordering system (*R*)
- I experience *web page navigation* (i.e., page would not upload or server time was expired) problems when using the online ordering system (*R*)
- I experience *billing* problems when using the online ordering system (*R*)

A.2.2.4. System

- The online ordering system is easy to understand and use
- The system offers quick response time
- The web site offers high reliability
- The system provides a broad range of services to users
- Delivery times for Internet orders are predictable
- The Office Depot system is easy to use the first time
- If problems occur during use were they easy to resolve
- Items that did not load on any Scale
- Office Depot sends order confirmation in a timely fashion
- The company delivers the items when they promised delivery
- Office Depot provides good technical support

A.3. Performance

A.3.1. COSTPERF

- Cost of activities associated with purchasing (*R*)
- Cost of training new personnel associated with ordering systems (*R*)

Appendix B Seven Propositions for “*Qualitative investigation of smaller firm e-business development*” Titled Research

- P1. The degree of Internet connectivity will depend on the orientation of the firm.
- P2. E-business start-up costs will serve as a barrier to the risk averse firm.
- P3. Those firms with high degrees of entrepreneurial orientation are expected to exhibit high e-business adoption rates.
- P4. The propensity to develop e-business activities will vary by sector.
- P5. Those firms in hi-technology industries will exhibit higher e-business participation rates than firms from a lower technological base.
- P6. Non users of e-business technology will experience a decline in performance over time.
- P7. Improved business performance through adoption of e-business practices is linked to a core set of Internet competencies.

Appendix C Test Results of “E-commerce in Hong Kong an empirical perspective and analysis” Titled Research

Table C.1 Test Results for “E-commerce in Hong Kong an empirical perspective and analysis” Titled Research

Profile * (Usage of e-commerce on the internet (n = 91))		Percentage
Use of the internet to support company business		
A few times a month		3.3
A few times a week		11
A few times a day		13.2
About once a day		6.6
Several times a day		65.9
Total		100
Time of using the internet to support company		
< 1 year		16.4
1-2 years		42.9
3-4 years		28.6
5-6 years		3.3
>6 years		8.8
Total		100
Profile * (Usage of internet from application perspectives)	Average %	SD
Messaging (e-mailing, internet phone, group)	48.9	30.1
Browsing (using a browser to surf the WWW for	20.7	17.5
Downloading (copying files from WWW such as	12.8	10.9
Purchasing (product ordering through the Net)	2.8	6.1
* Reasons for not using web page to promote companies/products (n = 32)		Percentage
No perceived advantage at all in using web at all		34.4
Not connected to the internet		18.8
No support to connect to internet and set up web		15.6
No time to learn the use of web page		9.4
Others		21.9
Total		100
* Perceived usefulness of web pages (n = 104)		Mean
Web page can help existing and potential customers		3.817
Enhanced company image		3.942
Increased competitiveness		1.625
		Std. Dev.
		0.932
		0.868
		0.847

Source: Nagai & Gunesekaran, 2005

Appendix D Questionnaire of the Research

Table D.1 Questionnaire of the Research

	1: Kesinlikle Katılmıyorum 2: Katılmıyorum 3: Ne Katılıyorum Ne Katılmıyorum 4: Katılıyorum 5: Kesinlikle Katılıyorum
1. Şirketimiz elektronik pazaryerlerini kullanarak sıkça alışveriş yapmaktadır.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
2. Şirketlerarası elektronik ticaret (B2B), toplam maliyeti düşürmektedir.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
3. Şirketlerarası elektronik ticaret (B2B), hız kazandırmaktadır.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
4. Şirketlerarası elektronik ticaret ile aynı ürüne daha ucuz fiyat ödeyerek sahip olunabilmektedir.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
5. Şirketlerarası elektronik ticareti kullanarak daha fazla müşteriye ulaşılabilirliktedir.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
6. Şirketlerarası elektronik ticareti kullanarak, girdi çıktı takibi daha etkin olarak izlenebilmektedir.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
7. Şirket yönetimi şirketlerarası elektronik ticareti teşvik etmektedir.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5

8. Şirketimiz elektronik ticaret için gerekli olan donanımsal (altyapı) yatırımları yapmaktadır.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
9. Şirketimiz, elektronik ticaret yapan kişileri seçerken kişilerin elektronik ortam için gerekli olan bilgi ve eğitim düzeyini gözönüne alır.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
10. Şirketimiz elektronik ticaret ile ilgilinen kişilerin, eğitimleri için gerekli bütçeyi ayırmaktadır.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
11.Şirketimiz satın alma görevlilerine elektronik ortam yerine, klasik satın alma yöntemlerini önermektedir .	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
12. Şirket yönetiminin, elektronik ortamdan alışveriş yaptığı sitelere güveni tamdır.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
13. Şirketimizin internet bağlantı hızı oldukça yüksektir.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
14. Şirketimizdeki yazılımlar ile elektronik ticaret ortamında kullanılan yazılımlar uyumludur.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
15. Firmamız _____ sektöründe çalışmaktadır.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
16. Şirketler arası elektronik ticarete satın alınan ürünler genellikle işlenmemiş (ham madde) ürünlerdir.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
17. Şirketimiz _____ ölçekli bir firmadır.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
18. Şirketlerarası elektronik ticaret yapılan sitenin üye sayısının fazla olması şirketlerarası elektronik ticaret oranını artırır.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5

19. Şirketlerarası elektronik ticaret yapılan sitenin aldığı komisyon ya da üyelik ücretinin düşük olması şirketlerarası elektronik ticaret kullanımını artırır.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
20. Şirketlerarası elektronik ticaret yapılan sitenin dizaynının ve işlevselliğinin iyi olması şirketlerarası elektronik ticaret kullanım oranını artırır.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
21. Şirketlerarası elektronik ticaret yapılan sitenin farklı dilleri desteklemesi şirketlerarası elektronik ticaret kullanım oranını artırır.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
22. Şirketlerarası elektronik ticaret yapılan sitelerin kişiye özel, gizli ihale olanağı sunabilmesi şirketlerarası elektronik ticaret kullanım oranını artırır .	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
23. Şirketlerarası elektronik ticaret yapılan sitenin diğer üyeler arasında bilgi alışverişine olanak sağlaması elektronik ticaret kullanım oranını artırmaktadır. .	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
24.Şirketimizin birlikte çalıştığı tedarikçileri şirketlerarası elektronik ticaret sistemini kullanmamızı önermektedirler.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
25. Şirketlerarası elektronik ticaret sistemini kullanırken her zaman istenilen ürün tedarik edilebilmektedir.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
26. Şirket yönetimi , şirketlerarası elektronik ticaret sistemini kullanarak alışveriş yaparken bilgi içeriğinin güvenli olarak transfer edildiğine inanmaktadır.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
27. Şirketimizin, tedarikçileri ile aralarında bulunan bağlayıcı anlaşmalar, elektronik ticaret kullanım oranını düşürmez.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5

28. Şirketlerarası elektronik ticaret sırasında web sitesinde ürünün fiyatı ile ilgili bilgileri diğer kullanıcılarla paylaşmakta bir sakınca yoktur.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
29. Şirketlerarası elektronik ticaret sırasında web sitesinde ürünün stok bilgilerini paylaşmakta bir sakınca yoktur.	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
30.Şirketimizin adı: _____	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5

Appendix E Sample Data

Table E.1 Sample Data

Companies	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
B2B	4	4	4	5	4	4	3	3	2	4	4	4	3	4	3	4	2	2	4	3
Transaction cost	4	3	3	5	5	5	4	2	3	4	3	5	2	4	2	5	2	3	4	5
Speed	4	5	4	5	5	5	4	2	4	4	4	4	4	4	4	4	4	3	4	5
Low price	4	4	3	5	4	3	3	4	3	4	3	3	2	3	4	4	2	3	4	3
Wide Customers	3	4	3	5	5	5	5	4	4	4	5	4	2	5	4	4	5	4	4	5
Admin. Facilities	3	5	4	5	4	4	3	3	5	4	4	4	4	3	5	4	4	4	4	5
Manager Support	4	4	3	5	4	5	4	2	3	5	4	4	3	3	5	4	3	3	3	5
Investment	4	3	4	5	3	5	4	2	4	4	4	4	4	3	5	4	5	3	2	5
User Knowledge	4	5	3	4	1	5	4	3	4	4	4	5	4	4	5	4	5	2	4	4
Training Inv.	4	4	3	3	2	5	4	2	4	4	4	5	4	2	5	4	4	2	3	3
Sales Force	3	4	2	1	4	2	3	4	3	3	2	4	3	4	1	3	2	4	4	2
Trust	4	3	5	3	2	5	3	3	4	4	4	2	3	4	3	4	2	2	3	3
Internet	4	4	5	4	4	4	4	5	5	4	2	4	3	4	5	4	5	3	5	4
Comp. of Software	4	4	3	3	4	3	4	3	5	4	4	4	3	5	5	4	5	2	5	3
Product Type	2	3	1	1	5	4	3	1	4	4	5	2	3	1	4	4	3	3	5	3
Size	3	1	1	2	2	2	2	2	3	1	1	2	1	2	2	2	2	2	2	2
Range of Mem.	4	4	2	5	5	5	5	4	3	4	3	4	4	5	5	4	2	4	4	5
Commission	4	3	3	3	3	3	5	5	2	4	3	4	4	5	4	2	4	4	3	3
Design	4	4	4	5	4	5	5	5	2	4	4	4	4	5	4	4	5	4	5	5
Multilanguage	4	5	4	5	4	3	5	3	4	4	4	4	4	3	3	4	5	4	3	5
Auction	4	4	4	5	2	5	4	4	3	4	4	3	4	3	3	4	4	4	4	3
Collaboration	2	4	3	5	4	5	4	4	3	4	4	4	4	5	4	3	4	4	4	5
Supplier Effect	2	3	2	5	4	3	3	3	4	4	3	4	3	4	4	3	2	2	3	5
Uncertainty	4	3	4	5	3	3	3	3	3	4	4	4	3	4	3	3	2	3	3	3
Security	4	3	4	5	1	3	3	3	4	4	4	3	3	4	3	3	2	3	3	3
Long Term Contracts	3	4	3	4	3	5	4	1	3	4	4	3	4	3	1	3	4	3	4	4
Price Transparency	3	3	4	1	2	4	2	2	2	4	4	3	2	5	1	2	2	3	2	3
Sharing Info	4	4	4	1	1	4	2	3	2	4	4	4	2	3	1	1	2	3	4	3

Table E1 Sample Data (Continued)

Companies	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B2B	2	3	1	5	5	4	3	4	1	5	3	3	5	3	2	3	3	3	3	4
Transaction cost	3	4	2	5	5	5	4	4	4	5	3	3	5	4	3	4	4	3	4	5
Speed	3	5	4	5	5	4	5	5	4	5	4	5	5	3	4	3	4	3	4	5
Low price	2	2	3	5	5	3	3	4	3	5	4	2	4	2	3	2	4	2	5	3
Wide Customers	4	4	4	3	5	5	5	5	4	5	4	4	5	5	4	3	4	3	5	5
Admin. Facilities	2	2	3	3	5	3	1	2	3	5	4	1	5	3	3	2	3	3	2	4
Manager Support	2	3	4	3	5	4	4	4	3	4	4	3	5	3	2	2	5	5	4	5
Investment	2	2	2	5	5	4	5	4	3	4	5	3	3	3	2	2	2	4	4	5
User Knowledge	4	2	2	3	5	4	4	5	2	4	5	4	3	4	2	3	2	4	3	5
Training Inv.	2	2	2	4	2	3	4	2	3	3	4	2	2	3	2	1	2	2	3	5
Sales Force	4	3	3	1	3	3	3	4	3	4	2	4	1	3	4	3	3	4	3	2
Trust	3	2	2	3	5	3	1	5	2	4	4	3	3	3	3	3	2	2	1	2
Internet	4	4	3	5	5	3	3	5	2	5	4	3	5	2	3	5	4	3	5	5
Comp. of Software	4	2	4	5	5	3	3	4	2	5	4	5	3	4	2	3	4	4	1	5
Product Type	2	3	1	1	2	1	2	3	2	3	1	1	1	2	1	3	3	2	4	2
Size	2	2	2	1	2	1	2	1	1	2	1	2	2	1	2	1	2	1	2	2
Range of Mem.	4	5	2	3	5	3	5	5	3	5	4	2	5	4	5	5	4	3	3	3
Commission	2	3	1	3	2	4	2	4	3	4	4	5	4	4	4	1	2	3	1	3
Design	4	4	4	4	4	4	5	4	3	5	4	5	5	4	5	5	4	5	5	5
Multilanguage	3	4	5	5	2	3	2	4	4	5	3	4	5	4	5	5	4	5	5	5
Auction	2	4	1	5	4	4	4	5	3	4	4	3	5	5	4	2	5	5	5	3
Collaboration	4	4	1	3	4	3	5	4	4	5	4	5	5	4	5	4	5	5	5	5
Supplier Effect	2	4	4	2	2	2	2	4	2	3	4	2	2	4	3	2	4	5	4	2
Uncertainty	2	2	1	2	3	1	1	3	2	4	4	2	3	3	2	2	4	3	4	4
Security	2	3	3	3	4	2	1	4	2	4	4	2	3	3	2	3	2	3	2	2
Long Term Contracts	4	4	3	5	4	3	2	4	2	4	4	4	3	3	1	2	4	2	5	4
Price Transparency	2	2	1	1	3	3	1	4	2	3	4	3	5	2	3	1	5	3	1	3
Sharing Info	2	2	1	1	3	2	1	5	2	1	4	4	3	3	1	1	5	3	1	4

Table E1 Sample Data (Continued)

Companies	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
B2B	2	3	4	3	5	4	4	3	5	3	1	2	4	5	4	3	4	2	2	3
Transaction cost	3	4	5	4	5	5	5	5	5	3	1	3	3	5	4	5	4	2	4	4
Speed	3	5	5	5	5	5	5	5	5	3	1	3	4	5	5	4	4	4	2	4
Low price	3	4	4	4	5	5	3	4	5	3	3	2	5	5	5	3	2	2	2	2
Wide Customers	3	4	5	5	5	5	5	4	5	4	2	4	5	5	5	3	4	3	4	4
Admin. Facilities	2	2	4	3	5	5	4	2	3	2	4	2	4	4	4	3	2	4	4	2
Manager Support	2	3	4	4	5	5	4	3	5	3	1	4	5	5	5	3	4	4	3	3
Investment	2	4	2	4	5	5	5	4	5	3	2	2	5	5	4	1	4	2	3	2
User Knowledge	1	4	3	3	5	5	5	3	5	2	3	4	5	5	4	1	4	2	2	2
Training Inv.	1	4	3	2	5	5	4	2	5	2	2	2	5	5	5	1	4	2	2	3
Sales Force	4	3	3	1	2	1	4	3	2	2	4	3	4	3	4	3	3	3	3	3
Trust	1	4	4	4	5	4	4	2	4	3	4	4	3	3	4	2	3	3	2	4
Internet	2	5	3	3	5	5	5	4	3	3	1	3	3	5	5	2	3	4	4	5
Comp. of Software	1	5	3	4	3	5	5	2	4	3	3	3	4	5	4	2	4	3	4	5
Product Type	2	2	1	3	1	3	1	5	2	2	2	1	2	3	2	2	2	2	2	3
Size	1	2	1	2	2	2	2	1	2	2	1	1	2	2	1	1	2	1	2	2
Range of Mem.	5	4	5	4	5	4	5	4	4	3	1	3	4	4	4	4	4	4	2	4
Commission	4	5	5	4	5	4	3	4	3	3	2	3	3	4	4	5	4	3	1	5
Design	5	4	5	4	5	4	5	5	4	3	1	4	5	5	5	4	5	4	1	5
Multilanguage	5	3	5	3	3	4	5	5	2	3	2	4	3	5	4	4	4	4	1	5
Auction	5	3	5	3	5	4	3	4	3	3	1	2	4	4	4	4	3	4	3	2
Collaboration	5	2	5	5	5	4	5	4	4	3	2	4	4	4	5	4	5	4	3	4
Supplier Effect	3	4	4	4	5	3	3	3	4	2	1	2	4	1	4	4	4	2	4	3
Uncertainty	4	4	4	4	3	3	3	3	3	3	4	3	3	4	4	3	2	3	2	3
Security	2	3	4	3	3	3	4	2	2	3	4	2	4	4	4	3	3	3	2	3
Long Term Contracts	4	3	4	4	4	3	5	4	2	2	3	3	3	4	4	3	5	3	1	3
Price Transparency	1	4	4	2	4	3	5	4	3	3	2	4	3	2	3	2	2	4	4	2
Sharing Info	1	4	3	2	4	3	5	4	3	2	1	4	2	5	4	3	4	4	2	2

Table E1 Sample Data (Continued)

Companies	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
B2B	3	5	1	4	4	5	4	3	5	5	1	4	5	2	3
Transaction cost	5	5	4	4	5	5	4	4	5	5	4	5	5	2	4
Speed	3	5	4	4	5	5	5	4	5	5	2	5	5	2	4
Low price	2	5	1	2	4	5	4	3	5	5	3	4	4	5	2
Wide Customers	3	5	4	4	4	5	4	4	5	5	4	5	3	5	5
Admin. Facilities	5	5	3	2	4	5	5	2	5	5	2	4	3	3	4
Manager Support	5	5	4	3	5	5	4	4	5	5	2	3	4	3	4
Investment	5	5	2	4	4	4	3	4	5	5	1	2	4	3	4
User Knowledge	5	4	3	2	4	3	2	4	4	5	1	3	4	2	3
Training Inv.	3	5	2	2	4	3	3	4	3	5	1	3	4	2	4
Sales Force	5	5	5	3	3	2	4	2	2	1	4	2	4	4	4
Trust	3	5	2	3	4	5	3	4	3	3	2	4	2	3	2
Internet	5	5	4	3	4	4	3	4	4	5	5	4	4	3	4
Comp. of Software	5	5	2	2	4	5	4	4	4	3	2	4	4	5	4
Product Type	3	4	2	3	5	1	1	2	3	1	4	3	2	2	3
Size	1	2	1	1	2	2	1	1	1	2	2	2	1	2	1
Range of Mem.	4	5	5	4	3	4	4	4	5	5	4	5	4	3	2
Commission	5	4	2	4	3	3	4	4	5	4	3	5	4	2	2
Design	5	5	4	4	4	4	4	4	5	5	3	5	4	5	4
Multilanguage	4	5	4	4	4	3	4	4	5	4	5	5	4	5	4
Auction	2	5	1	4	4	5	4	4	5	4	5	3	4	4	3
Collaboration	5	5	4	2	4	3	5	4	5	4	5	5	4	3	3
Supplier Effect	2	5	2	4	4	3	3	4	5	2	2	3	3	2	4
Uncertainty	2	5	2	3	4	5	3	2	5	4	1	4	4	1	1
Security	2	4	1	3	4	3	2	3	1	5	2	4	3	2	2
Long Term Contracts	5	4	2	3	4	3	2	4	5	4	1	3	3	2	4
Price Transparency	1	3	1	2	2	3	1	4	5	3	1	2	4	4	1
Sharing Info	3	3	1	2	2	3	1	4	5	4	1	2	4	4	1

Appendix F Pie Charts of the Sample Data in Percentages

Question 1: B2B e-commerce is frequently used by our company for selling and purchasing goods.

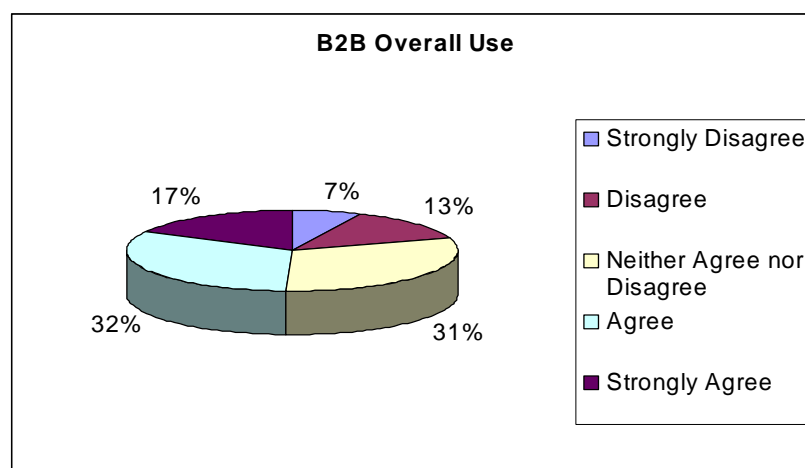


Figure F .1 Pie Chart of the Research Question 1 in Percentages

Question 2: B2B decreases transaction costs.

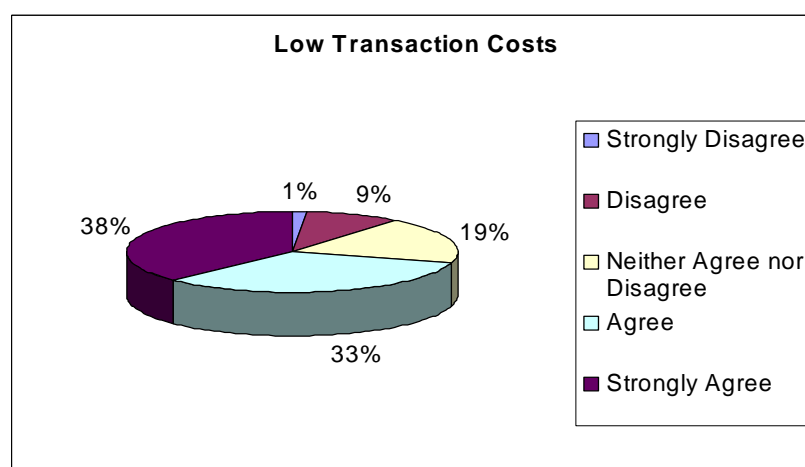


Figure F .2 Pie Chart of the Research Question 2 in Percentages

Question 3: B2B decreases transaction time.

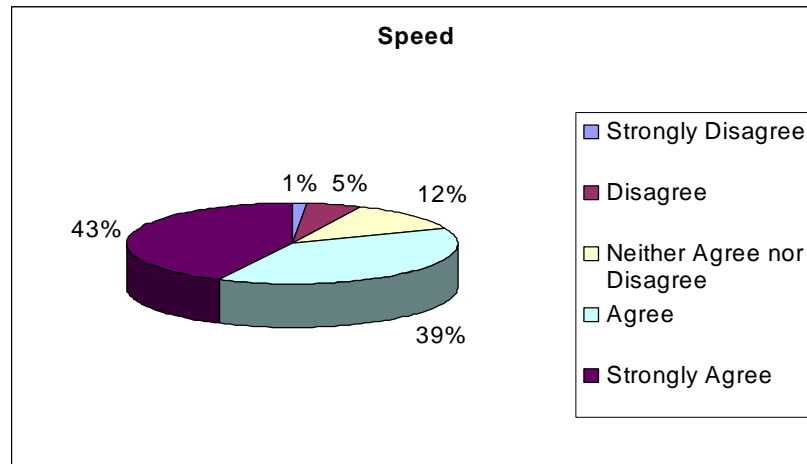


Figure F .3 Pie Chart of the Research Question 3 in Percentages

Question 4: B2B gives opportunity to purchase same product at a lower price.

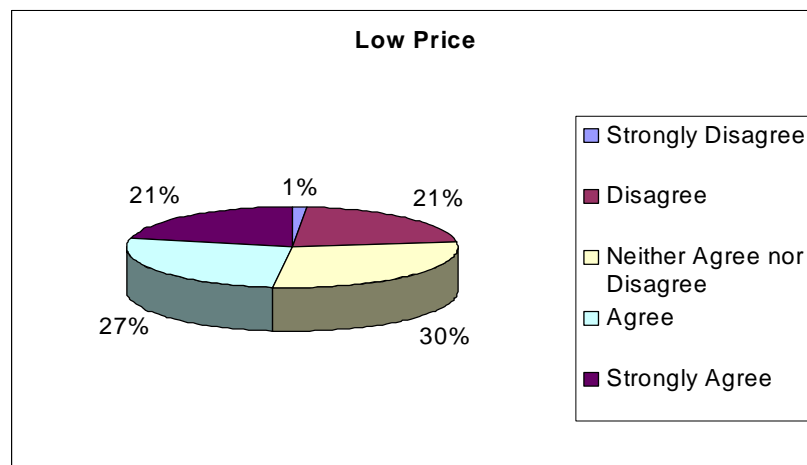


Figure F .4 Pie Chart of the Research Question 4 in Percentages

Question 5: Companies reach more customers by using B2B.

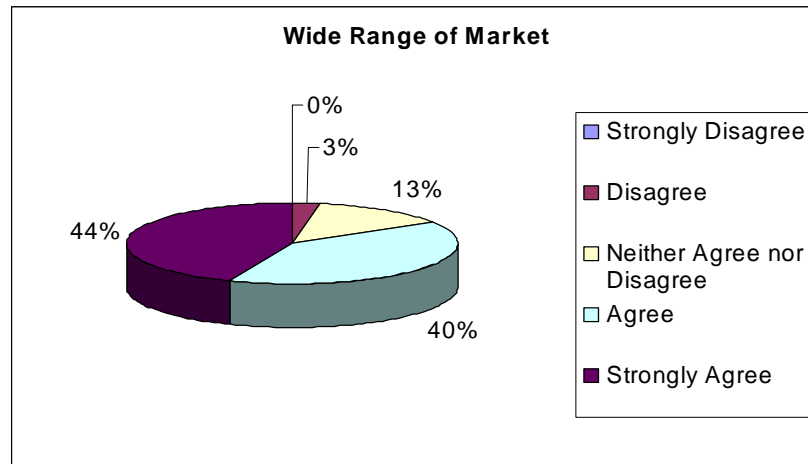


Figure F .5 Pie Chart of the Research Question 5 in Percentages

Question 6: B2B allows companies to coordinate operational facilities effectively.

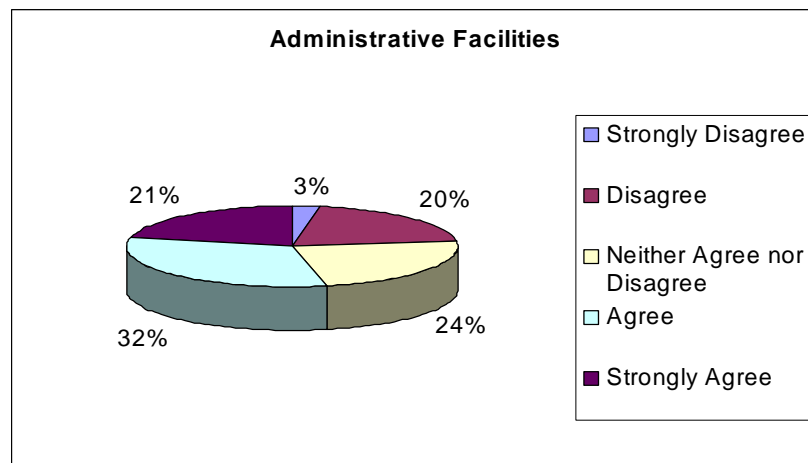


Figure F .6 Pie Chart of the Research Question 6 in Percentages

Question 7: Company management supports B2B e-commerce.

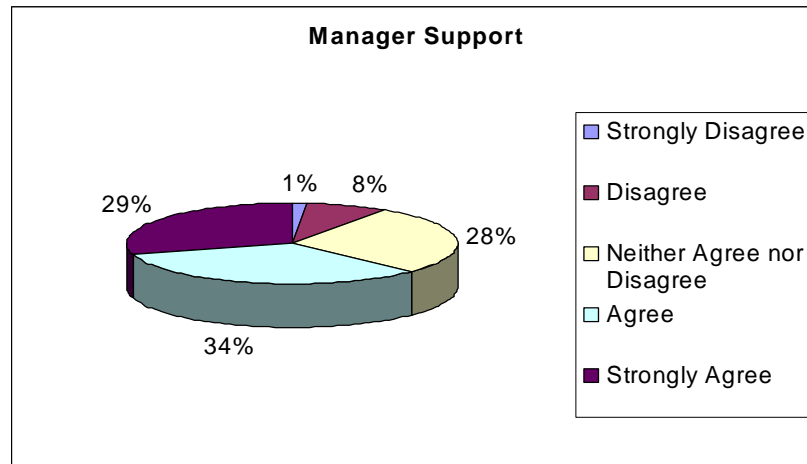


Figure F .7 Pie Chart of the Research Question 7 in Percentages

Question 8: Company management sufficiently invests in infrastructural hardware equipments for B2B e-commerce.

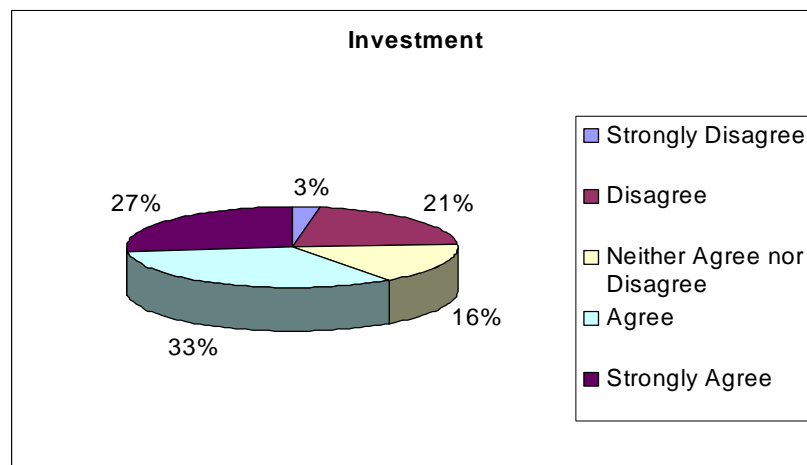


Figure F .8 Pie Chart of the Research Question 8 in Percentages

Question 9: Company management looks for staff that has high knowledge and competency.

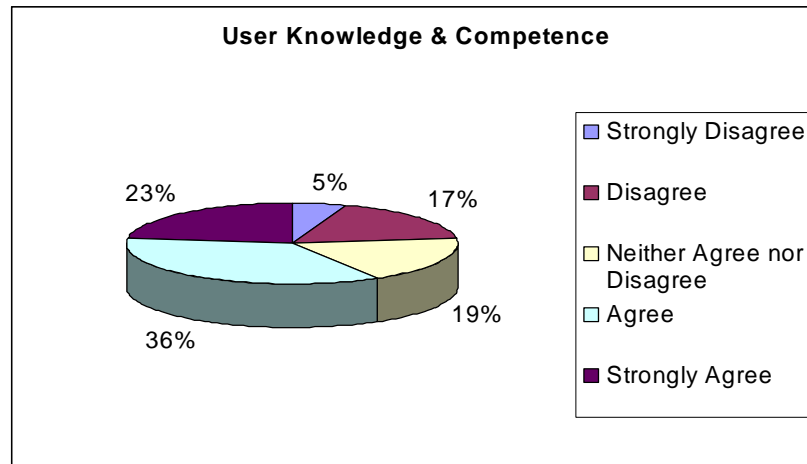


Figure F .9 Pie Chart of the Research Question 9 in Percentages

Question 10: Company provides training budget for e-commerce staff.

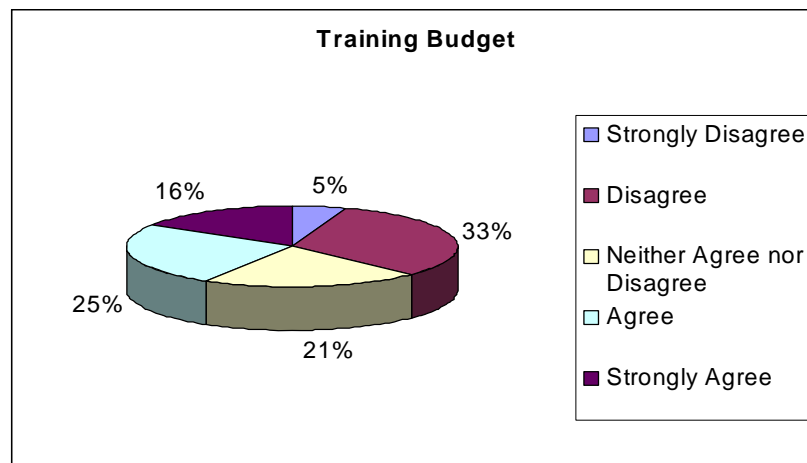


Figure F .10 Pie Chart of the Research Question 10 in Percentages

Question 11: Company suggests sales staff not to use B2B channel for selling and purchasing goods.

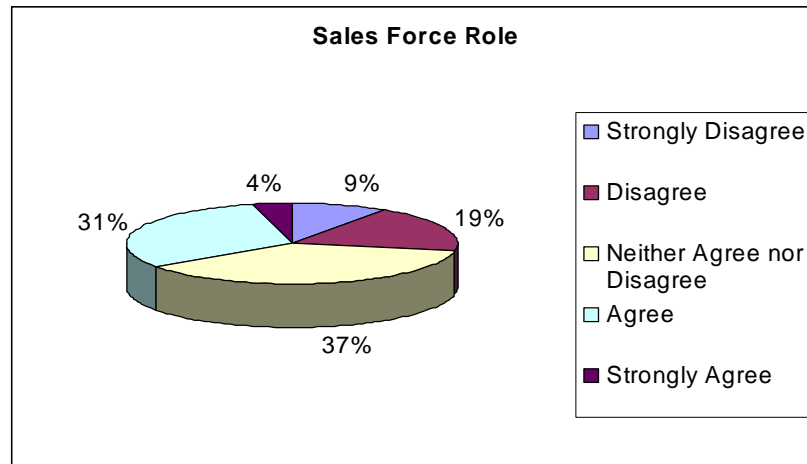


Figure F .11 Pie Chart of the Research Question 11 in Percentages

Question 12: Company management trusts to B2B portals.

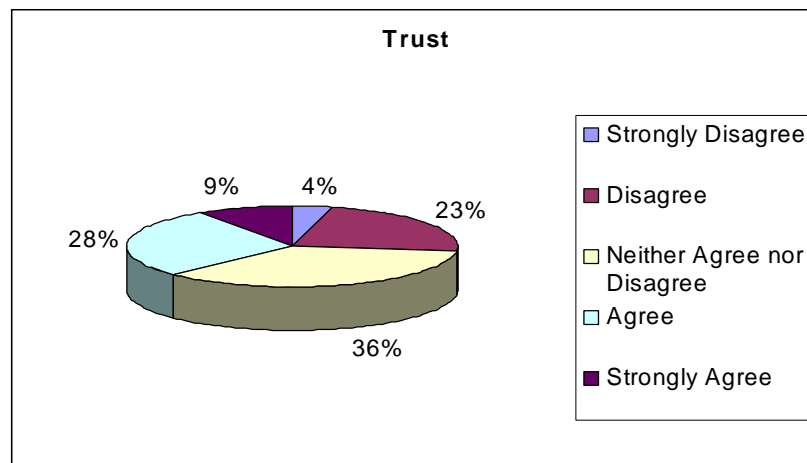


Figure F .12 Pie Chart of the Research Question 12 in Percentages

Question 13: Company management believes that B2B provides secure information transfer.

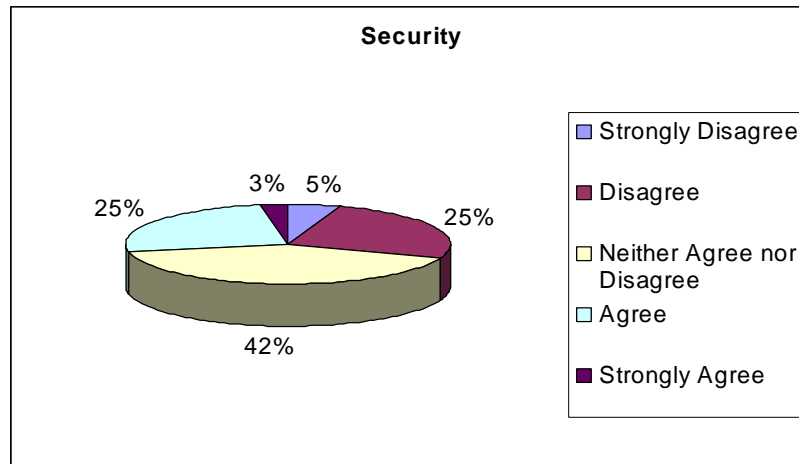


Figure F .13 Pie Chart of the Research Question 13 in Percentages

Question 14: Company has high speed internet connection.

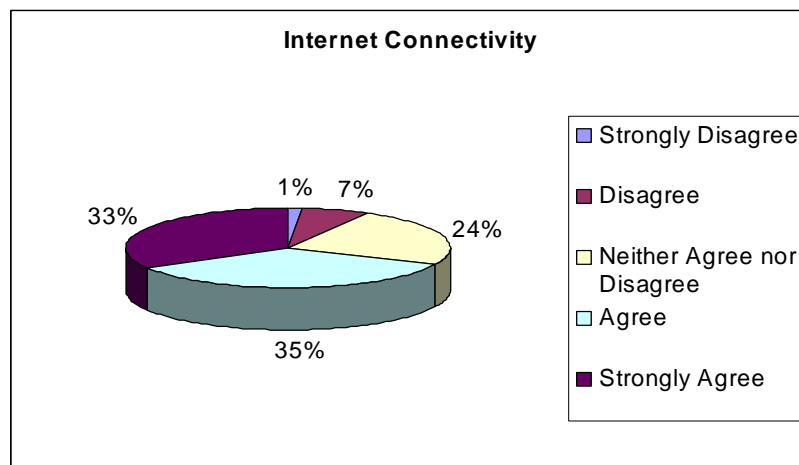


Figure F .14 Pie Chart of the Research Question 14 in Percentages

Question 15: Our company uses software which is compatible with the current B2B technologies.

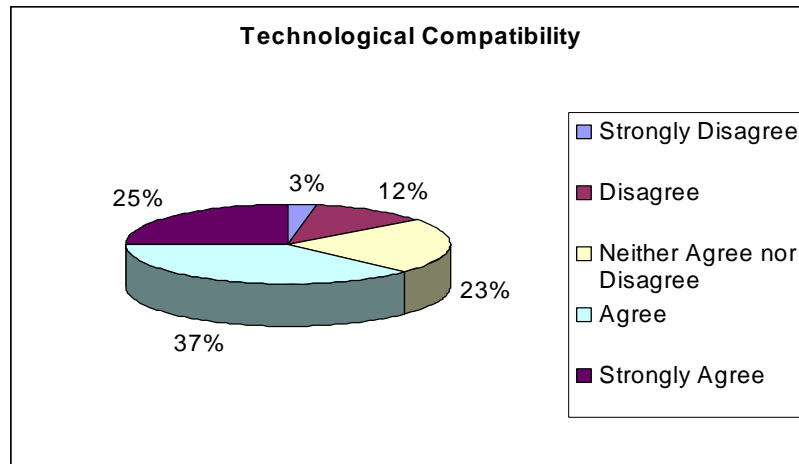


Figure F .15 Pie Chart of the Research Question 15 in Percentages

Question 16: Company sector: _____

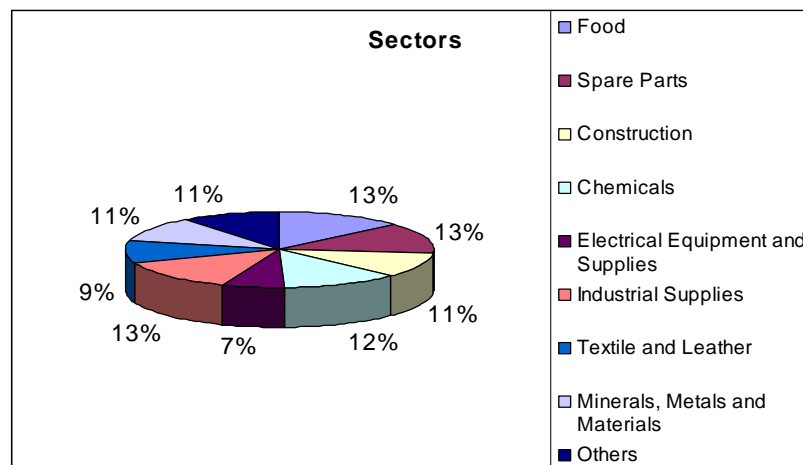


Figure F .16 Pie Chart of the Research Question 16 in Percentages

Question 17: Our company purchases raw materials rather than finished goods by using B2B channel.

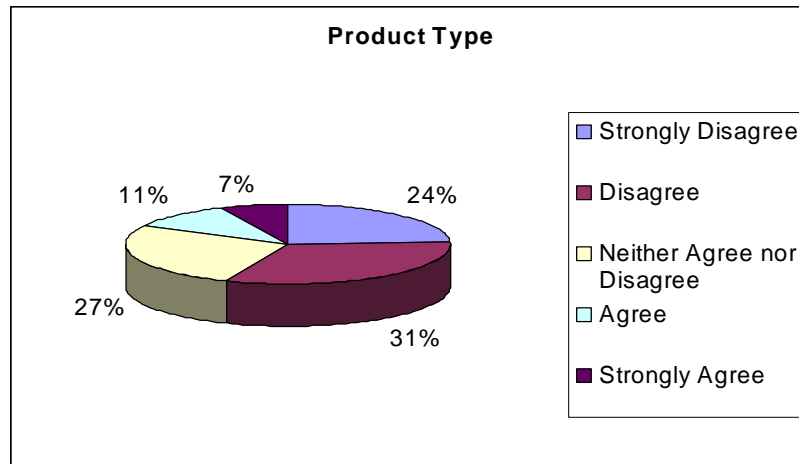


Figure F .17 Pie Chart of the Research Question 17 in Percentages

Question 18: Our Company is _____ sized.

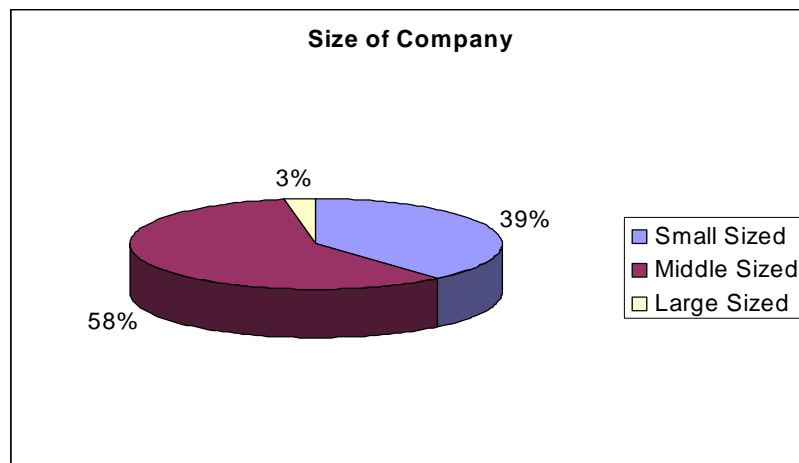


Figure F .18 Pie Chart of the Research Question 18 in Percentages

Question 19: Raising member numbers increases the B2B e-commerce overall use.

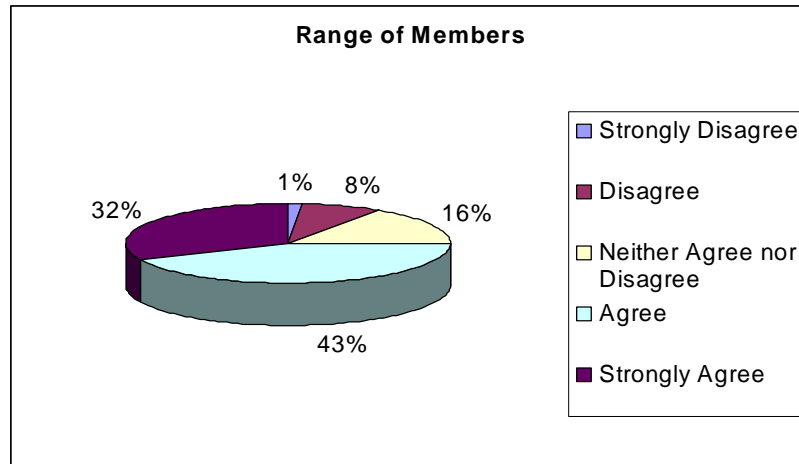


Figure F .19 Pie Chart of the Research Question 19 in Percentages

Question 20: B2B portal's low commission rates increase the B2B overall use.

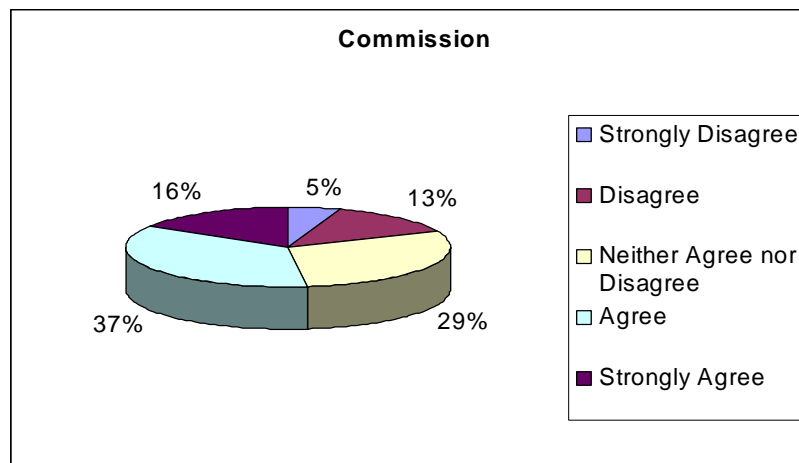


Figure F .20 Pie Chart of the Research Question 20 in Percentages

Question 21: B2B portal's improved design increases the B2B overall use.

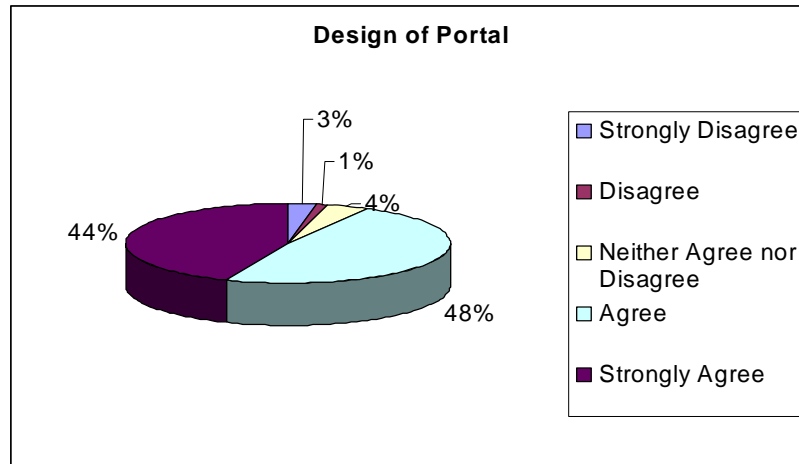


Figure F .21 Pie Chart of the Research Question 21 in Percentages

Question 22: B2B portals' multilanguage support increases the B2B overall use.

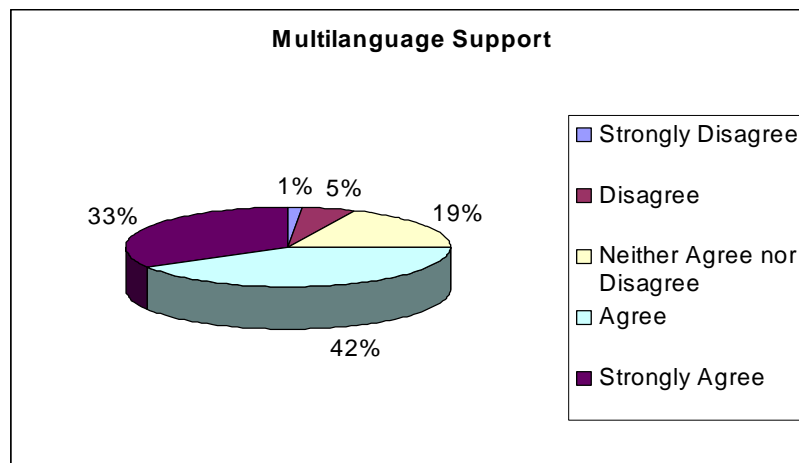


Figure F .22 Pie Chart of the Research Question 22 in Percentages

Question 23: B2B portal's private auction support increases the B2B overall use.

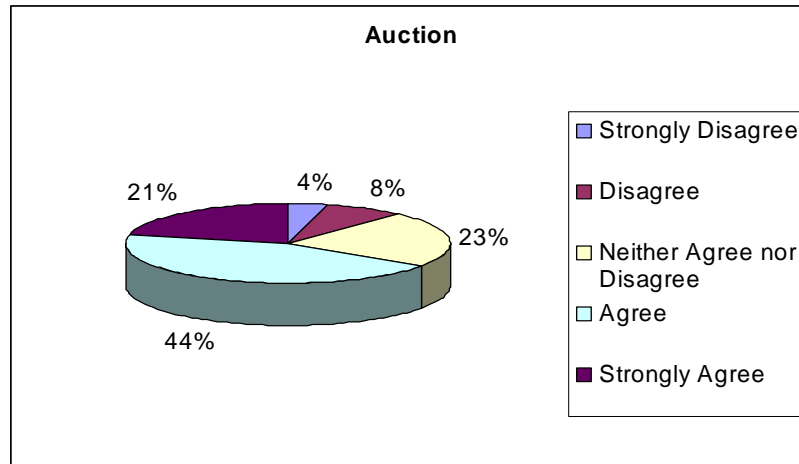


Figure F .23 Pie Chart of the Research Question 23 in Percentages

Question 24: B2B portal's collaboration support between their members increases the B2B overall use.

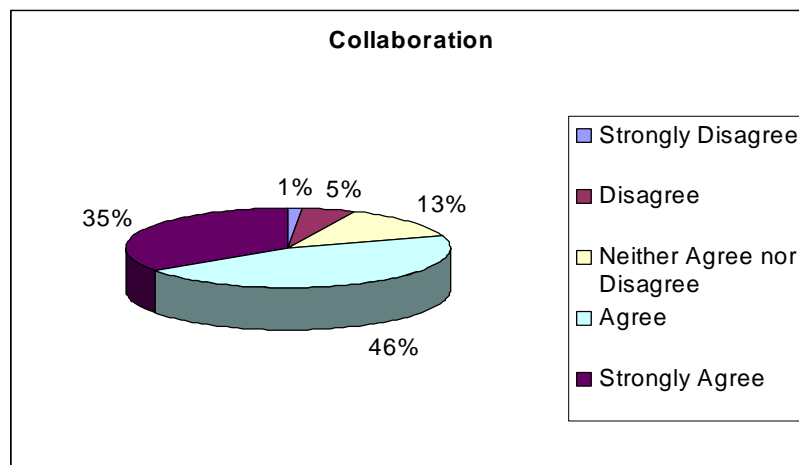


Figure F .24 Pie Chart of the Research Question 24 in Percentages

Question 25: Company suppliers recommend using B2B channels for selling and purchasing goods.

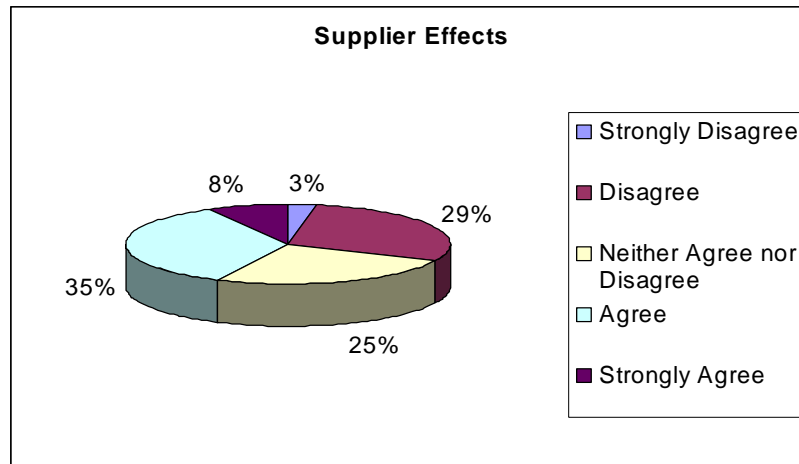


Figure F .25 Pie Chart of the Research Question 25 in Percentages

Question 26: Every kind of goods can be supplied through B2B portals.

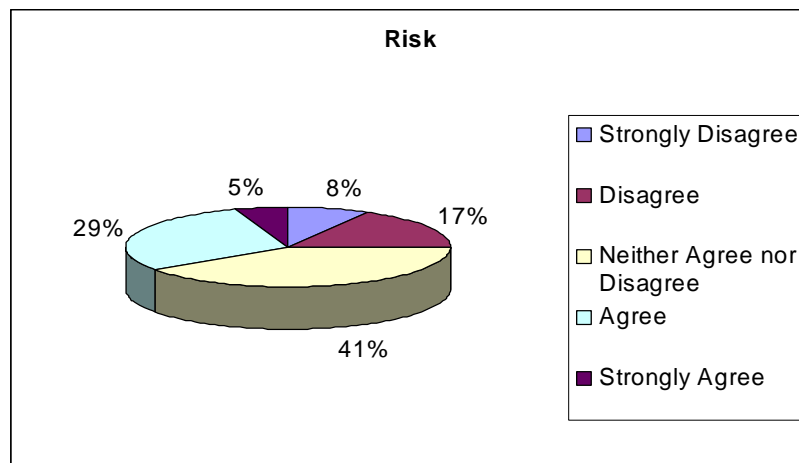


Figure F .26 Pie Chart of the Research Question 26 in Percentages

Question 27: Long term agreements with our supplier do not increase company B2B overall use.

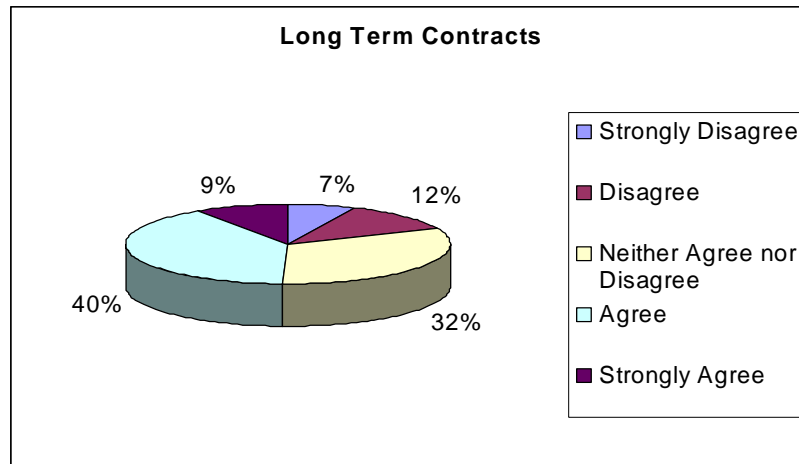


Figure F .27 Pie Chart of the Research Question 27 in Percentages

Question 28: Product price information can be shared with the B2B portal members.

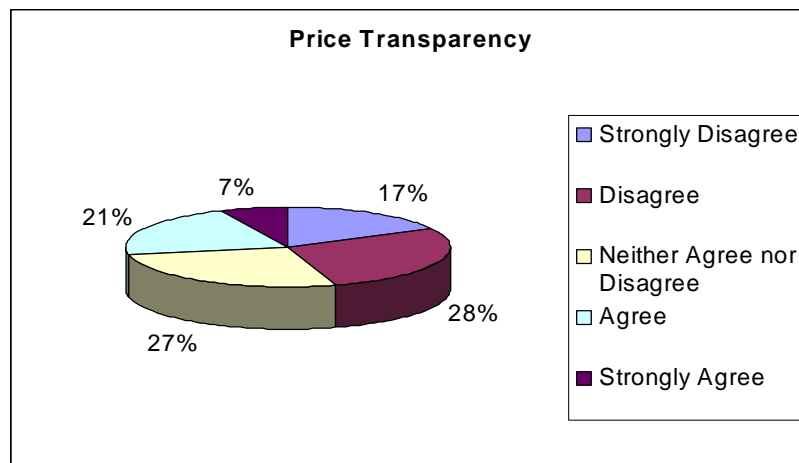


Figure F .28 Pie Chart of the Research Question 28 in Percentages

Question 29: Operational information can be shared with the B2B portal members.

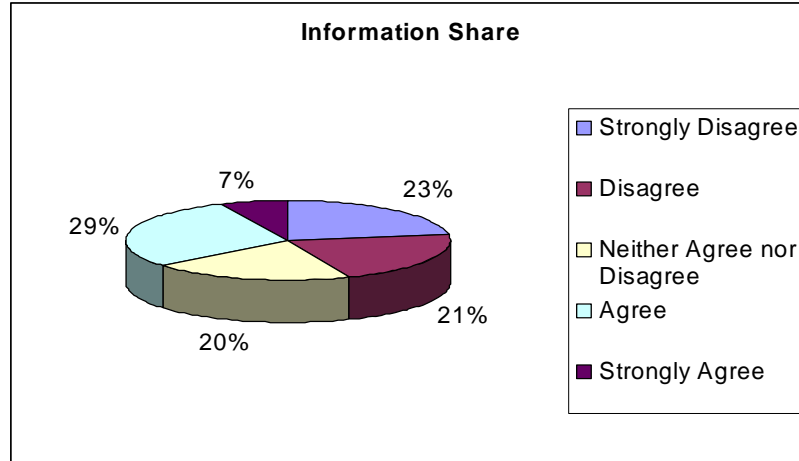


Figure F .29 Pie Chart of the Research Question 29 in Percentages

Curriculum Vitae