ORGANIZATIONAL FACTORS REQUIRED FOR IT AND BUSINESS STRATEGIES ALIGNMENT

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ABSTRACT

ORGANIZATIONAL FACTORS REQUIRED FOR IT AND BUSINESS STRATEGIES ALIGNMENT

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Previous literature strongly supports that the alignment of a firm's information systems with business strategies leads to superior business performance and provides the firm a competitive advantage in the market. This study examines the antecedent factors of IT and business strategies alignment particularly for the Turkish context.

Our research method in this study is *embedded correlational model* under the umbrella of *mixed method* research design. We derived the factors that were shown to contribute to business-IT alignment in the literature. We distributed a survey and acquired the perspectives of 71 executives from middle to large sized firms registered to Ankara Chamber of Commerce (ATO) on those factors. Then we double checked the effectiveness of these factors with actual measures by correlating their perceived success in these factors with their IT alignment level. Lastly we conducted interviews to have a deeper insight about some intricate points in our findings.

We found out that our ten factors collectively have a high correlation (r=.723) with the Business-IT alignment score. Three factors appeared to be strongly effective in attaining Business-IT alignment: executive support for IT, commitment to strategic use of IT and business-IT planning integration.

Keywords: Business strategies, IT and business strategies alignment, strategic use of IT, strategic IT alignment

ÖZ

İŞ STRATEJİLERİ VE BİLİŞİM TEKNOLOJİLERİ UYUMU İÇİN GEREKLİ ORGANİZASYONEL FAKTÖRLER

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Geçmiş çalışmalar bir firmanın bilişim teknolojilerinin onun iş stratejileri ile uyumlu olmasının firmanın başarısını arttırıp ona rekabet avantajı sağladığı savını kuvvetle desteklemektedir. Bu çalışmada özellikle Türkiye bağlamında bilişim teknolojileri ile iş stratejileri uyumunun öncül faktörleri incelenmektedir.

Bu çalışmada araştırma yöntemimiz *karma araştırma metotları* başlığı altında *gömülü korelasyonel modelidir*. Çalışmada ölçtüğümüz faktörleri literatürde BT ve iş stratejileri uyumuna katkısı olduğu ispat edilen faktörlerden elde ettik. Bir anket uygulaması yapıldı ve Ankara Ticaret Odası'na kayıtlı orta ve büyük ölçekli firmalarda görevli 71 üst düzey yöneticilerden bu on faktör hakkındaki görüşleri alındı. Ayrıca firmaların bu faktörlerdeki algılanan başarısı ile firmaların bilişim teknolojileri(BT) uyum puanları korelasyon analizine tabi tutulup bu faktörlerin gerçek hayatta etkisi test edildi. Son olarak bu bulgular içinde anlaşılamayan bazı noktalar hakkında daha derin bir bilgiye sahip olabilmek için bazı yöneticilerle görüşmeler yapıldı.

Analizlerimiz sonucunda test edilen on faktörün toplamda iş stratejileri ve bilişim uyumuna etkisinin yüksek olduğunu (r=.723) saptadık. Özellikle şu üç faktörün ise yüksek olumlu etkisi olduğunu fark ettik: üst yönetimin BT'ye destek olmaları/arka çıkmaları, bilişim sisteminin stratejik kullanımına önem verilmesi ve bilişim ve iş planlamalarının beraber yapılması/entegrasyonu.

Anahtar Kelimeler: İş stratejileri, iş stratejileri ve BT uyumu, bilişim teknolojilerinin stratejik kullanımı, stratejik BT uyumu

To my family

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List of Abbreviations

IS	Information System
IT	Information Technology
MIS	Management Information System
SAM	Strategic Alignment Model
ATO	Ankara Ticaret Odası (Ankara Chamber of Commerce)
BT	Bilişim Teknolojileri

CHAPTER 1

INTRODUCTION

Today's companies extensively rely on information technology for all stages of their operations: procurement, production, distribution, sales and maintenance. Information systems become core asset for nearly all industries. It is regarded among the greatest investments and the most critical property of firms, therefore large sums of resources are dedicated for this organizational resource.

However firms cannot harvest the financial benefits from those investments as expected.(Teo & Ang, 1999; Teo & King, 1997) Many information systems projects fail or at least do not perform as intended.(Pressman, 2005) Costs exceed projections and systems do not satisfy the requirements. One of the main reasons behind these problems is found to be the lack of congruence between the firms' structure and the information technology implemented. In other words, if the firm's formal structure, mission, objectives and strategies are not reflected in the information system, then it does not produce the intended outcomes.

Studies have shown that alignment of information technology with the business strategies has numerous benefits. Firstly this alignment would maximize the returns of IT investments, and increases the profit margin consequently.(Chan, Huff, Barclay, & Copeland, 1997) Secondly, alignment would help the firm better utilize organizational resources which would provide the firm a competitive advantage in the sector.(Henderson & Venkatraman, 1999) Third, alignment facilitates targeting organizational objectives more effectively.(A. Yayla & Hu, 2009) In other words aligning IT with business strategies not only increases the operational efficiency but also fosters organizational effectiveness as well.

A mismatch between IT and organizational structure and strategies would lead to several problems. Firstly IT would not be utilized effectively and it would not provide cost efficiency for the business operations. This would cause the IT to be seen as a liability,

rather than a core asset that enables operational excellence. Since IT's benefits would not be fully realized, executives may show dissatisfaction with the IT. Then new business opportunities that the IT offer would not be sought of which may lead to endanger the competitive position of the firm within the market it operates.

Because of these critical roles mentioned above, As Luftman et al. (1999) reported in their study alignment of IT with business strategies was found to be among the top concerns of executives and even the first concern especially for IT managers.

1.1 Motivations for Research

As mentioned above there is a consensus on the operational and monetary benefits of aligning IT and business strategies. However there is lack of agreement in the literature on the means to achieve this alignment. What paves the way for alignment is still an ongoing discussion. Findings vary through studies based on the sector, industry and the country that the study conducted in. (Chan, Sabherwal, & Thatcher, 2006; Cragg, King, & Hussin, 2002; Dong, Liu, & Yin, 2008; Rathnam, Johnsen, & Wen, 2004)

Although managers appreciate the importance of alignment they still have little vision on how to attain it. Moreover studies report that managers saw their alignment level as not being sufficient. (Chan, 2002; A. Yayla & Hu, 2009)

To reduce the ambiguity of attaining alignment, researchers tried to find out the factors that contribute to or facilitate IT and business alignment. Since the means for attaining the alignment are not clear for the managers, researchers suggest these factors to managers as a preliminary step for achieving the desired alignment level. For this purpose many studies conducted in different countries and various cultural settings. However the body of literature that studies the antecedents of alignment in Turkey is at its infant phase. In this study we are investigating the factors which pave the way for IT alignment to have a localized vision on the issue.

1.2 Research Questions

In this research we are addressing those questions:

- What are the Turkish managers' opinion about certain factor's contribution to IT and business strategies alignment? For them what are the antecedents of this alignment?

- Do their provisions hold true when their success in those factors and their alignment level are correlated in actual figures?

We are also addressing those questions indirectly:

- What is the level of IT and business strategies alignment in Turkish companies?
- What do the Turkish companies use IT for? Information technology supports which business strategies in Turkey?

The following chapters are organized as follows: the following chapter is dedicated to review of previous studies. Third chapter describes the design elements of the research, namely the methodology employed and the constructs operationalized in the study, the design of the survey and the process of data collection and sample characteristics. Fourth chapter are dedicated for our main analyses, including factor ratings and correlation analyses as well. Then the discussion chapter provides deeper insights about the findings of the study. Then we presented limitations of the study and suggestions for future studies and lastly suggestions for practitioners based on our findings.

CHAPTER 2

LITERATURE REVIEW

This chapter of the study is dedicated to theoretical framework of our topic driven from previous studies. This part is organized into three sections. First part is on the concept of alignment between business and IT, attempts to explain the concept from previous studies. Second part discusses the relationship between this alignment and organizational performance and the last part is on the issue of antecedents of alignment. Before starting the concept of IT alignment we will introduce the main paradigm we employ in this research: contingency theory.

The Contingency Theory and IT Alignment

Contingency theory postulates that there is no single best way to achieve IT and business strategies alignment. (Teo & King, 1997) Thus attaining alignment is not a predictable pattern that every firm should go through in the same way, rather it proposes the alignment as a product of certain contingency variables. In other words the contingency theory tries to figure out interrelationships between certain organizational factors and IT alignment. Evolutionary theory, on the other hand, tries to find out a certain pattern to achieve the alignment.

The contingency theory has been the main stream in the management information systems (MIS) literature. Weill and Olson (1989) reported in their review of MIS literature that out of 105 empirical studies 74 of them was based their analysis on the contingency paradigm.

In this study we used the contingency theory as our basis. We propose that achieving IT alignment requires some organizational factors as antecedents and preconditions, however we do not propose a predictive causal relationship between the factors and the IT alignment.

2.1 IT and Business Strategies Alignment

When the information technology was started to be used by companies it was mainly used for accounting and record keeping purposes. Computers automated repetitive clerical functions, such as order transactions. (Porter & Millar, 1985) Information technology has undergone significant advances, in terms of hardware, software, wireless technologies etc. However IT was still regarded as a facilitator of business and seen as a source of operational efficiency. As the IT permeated through the main operations of the firm, or as Porter calls it, value chain of the firm, IT's role gained more of a strategic value than it was before. IT was not a mere record keeping tool any more. As the power, capabilities and functionalities of information systems increased, firms encountered a wide range of options in acquiring information technology.

As Lederer and Mendelow (1989) quote it, the first idea to consider organizations' operational and strategic needs while selecting an information technology came from McFarlan(1971). Later McLean and Soden (1977) suggested that organizations' objectives, strategies, policies and plans should be dealt with in the selection process of information systems.

King (1978) enriched the issue and proposed the first idea of IT planning. He argued that most of the studies in MIS literature dealt with the IT planning from a bottom-up approach, thus neglected the strategic visions of the firm. He proposed a top-down approach in IT planning to include organizational strategy into picture.

He operationalized the organizational strategy as a combination of organizational objectives, organizational strategies and strategic organizational attributes. Organizational objectives may include lower bad debt rate or to better keep track of accounts receivables. Organizational strategies can be product differentiation or cost reduction and a strategic organizational attribute can be to have a transparent management or distributed decision making. King (1978) asserted that MIS strategy set should match this organizational strategy set, such that the IS should focus on account receivables, provide real time product deficiency information and make sure that access to corporate information is vested to lower management also. So he concluded that organizational strategy should be planned simultaneously with MIS plan.

King(1978) was also first in proposing IT as a source of 'organizational effectiveness', rather than 'operational efficiency' which used to be the general attitude towards IT up until him.

Later, as Leaderer and Mendelow (1989) cite it, Cresap et al. (1983) stated that "information systems stands a greater chance of achieving business goals if the planning process is coordinated with business planning process."

Strategic Alignment Model

The most comprehensive model in IT alignment literature, Strategic Alignment Model (SAM) was put forward by Henderson and Venkatraman (1999)[1]. This milestone study has been the basis for many future studies in the literature.

A quotation from the work, describing the importance of organizational factors in determining the benefits of IT usage. They stress briefly that it is the organizational capabilities that lever the outcomes of IT investments:

> *In this context, a critical lever for attaining this dynamic capability is not a specific set of sophisticated technological functionality but the organizational capabilities to leverage technology to differentiate its operations from competitors. In other words, no single IT application—however sophisticated and state of the art it may be—could deliver a sustained competitive advantage. Rather, advantage is obtained through the capability of an organization to exploit IT functionality on a continuous basis. This requires a fundamental change in managerial thinking about the role of IT in organizational transformation, as well as an understanding of the critical components of IT strategy and its role in supporting and shaping business strategy decisions.(p. 473)*

The SAM model is based on two building blocks: strategic fit and functional integration. As shown in Figure 1, strategic fit deals with the integration between any external and internal domains, whereas functional integration suggests integration between business strategy and IT strategy.

[1] The first publication was in 1993, however the author has the reprint version of the paper.

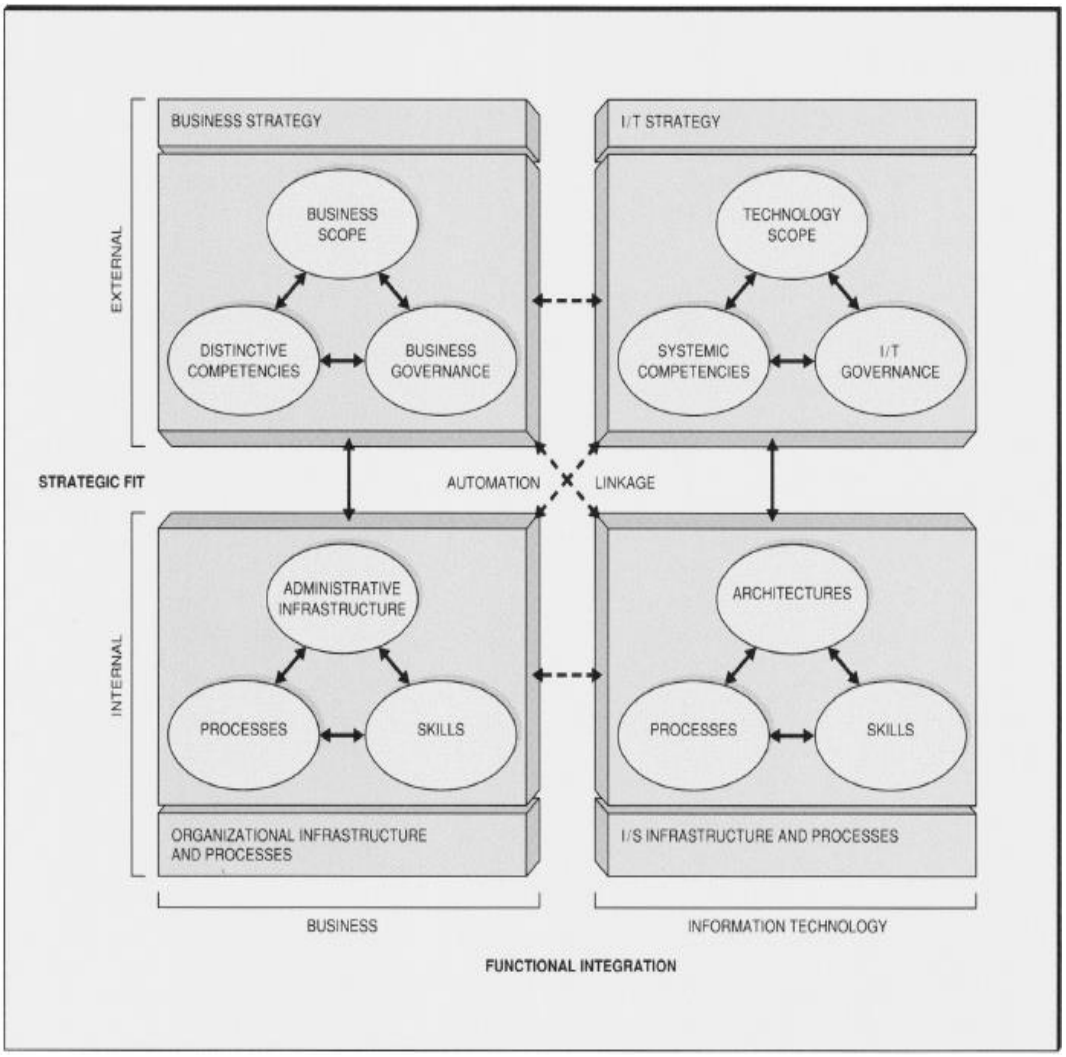

Figure 1 Henderson and Venkatraman's Strategic Alignment Model

In the business side of the model, the external domain includes strategies related with the market positioning of the firm. Internal domain on the other hand includes strategies like administration of the company, formal structure of the firm, acquisition and development of human skills to achieve business goals etc. (p. 474)

The conceptualization of external and internal strategy domain in business strategy was not novel to Henderson and Venkatraman. However adoption of this dichotomy to IT strategy was one of the innovations they introduce to the IT alignment literature. By applying the dichotomy of external and internal business strategy into IT strategy, they distinguish internal and external IT strategy; while the former deals with the processes, skills and architecture of IT within

the firm, the latter deals with the positioning of the firm in the IT market. They explained the latter under three parts: IT scope, systemic competencies and IT governance.

IT Scope includes specific IT technologies within the firm that support business strategies of the firm. This is analogues to business scope which corresponds to decisions regarding product-market offerings of the firm.

Systemic competencies include the attributes of the IT, like flexibility, reliability of the system, that contribute positively to the business strategies. This is again analogous to business competencies that distinguishes the firm from its competitors, like cost leadership, and quality of services and products.

IT governance includes decisions related with selection and use of IT within the firm, like joint ventures, outsourcing of IT services, strategic alliance decisions. This is analogues to business governance decisions like make-or-by strategies, strategic alliances with suppliers and distributors. (p. 474)

Internal domain also has three parts both for business and IT strategies. Infrastructure/architecture denotes organizational and systemic components of the firm. Processes defines business and IT processes to produce business values. Lastly skills denotes organizational and systemic expertise and competences that gives the firm organizational effectiveness.

Based on these definitions he states that the firm should both integrate its external strategies with internal ones and business domain with the IT domain as well. He suggested the latter one, functional integration, for the firm to have a competitive power within its industry. Functional integration is also of two part: strategic integration and operational integration. Strategic integration is the integration between business strategy and IT strategy, whereas operational integration is defined as the coherence between organizational infrastructure and processes and IS infrastructure and processes, which he defines as “internal coherence between the organizational requirements and expectation and delivery capability within the IS function.” (p. 476)

In our study we analyzed the linkage between the business strategies with the IT structure of the firm.

Based on Henderson and Venkatraman's conceptualization, the relationship between these four domains, business strategy, IT strategy, business structure, IT Structure has been investigated. Although there have been minor suggestions and even criticism for the SAM model the model remained to be valid and used as basis for many empirical studies. (A. A. Yayla, 2008)

However the SAM model does not encompass all dimensions of the Business-IT alignment issue; it shed light only upon the 'intellectual dimension' of the picture. There is also 'social dimension' as well. This distinction of social and intellectual dimension was offered first by Horovitz (1984), as cited in Reich & Benbasat (1996).

Reich and Benbasat (1996) stated that intellectual dimension is related with the methods and techniques for strategy formulation side. The social dimension, on the other hand, refers to choices of actors in both the business side and IT side, their degree of involvement, and the methods of communication and decision making. (Reich & Benbasat, 2000) These factors are the determinants of the alignment, whereas the state of alignment is defined by Reich and Benbasat's (1996) as follows: "The intellectual dimension of linkage is the state in which IT and business objectives are consistent and valid. The social dimension is the state in which business and IS executives in an organizational unit understand and are committed to each other's mission, objectives, and plans." (p.57)

2.2 Organizational Performance and IT Alignment

One of the main assumptions we base our study is the fact that IT and business strategies alignment has positive effects on organizational performance. We leaned upon the literature on this part of the model and focused on achieving the alignment part. Thus in our model, alignment itself is measured as the ultimate goal, not the organizational and financial outcomes of the alignment.

The studies we listed here used hypothesis testing for the impact of some internal and environmental factors on the alignment and then the effect of the alignment on the IS effectiveness and organizational performance. Nearly all of them used structural equation modelling technique since they employ latent variables in their analysis. They derived their list of factors from the other stream of studies in alignment literature, which our study also belongs to, that investigates the factors contributing to alignment, rather than examining alignment's effect on performance.

Teo and King (1996) investigated the impact of integrating business planning with IT planning on the IT-Business alignment maturity and their effects on IS effectiveness and financial performance of the firm. They tested their model with 157 managers from middle to large sized corporations in US and empirically concluded that as the extent of integration between business plans and IS plans increases both information systems' effectiveness and IS's contribution to organizational performance would be enhanced.

Chan et al. (1997) examined the effect of business strategic orientation, IS strategic orientation on IS alignment and their individual and collective effects on the perceived IS effectiveness and organizational performance. Authors tested their hypothesis on 157 North American companies from industries of manufacturing and finance. They found out that while all three have positive effects on the business performance, IS alignment is a better predictor of organizational performance than business and IS strategic orientation.

Cragg et al. (2002) empirically proved the positive effects of IT sophistication, CEO's commitment to IT and availability of external IT expertise on the IT alignment and the alignment's effect on firm's performance. He tested his model with 256 small manufacturing firms operates in UK. The distinctive feature of this study is that it tested the effects of alignment in small manufacturing firms.

Chan et al. (2006) empirically tested the effects of shared domain knowledge, planning sophistication, prior IS success, organizational size and environmental uncertainty on the IT alignment and their combined effects on firm performance. He had data from two distinct studies, one was conducted with academic institutions the other with business firms. He separately analyzed the two to show the effects of the industries on the conceptual model. He also categorized the firms and universities based on the Miles and Snow's typology of business strategy types; prospector, analyzer, defender and examined the effects of the aforementioned factors for each of those strategy types. Except the effect of environmental uncertainty was not supported for academic institutions, all other factors' effects were confirmed empirically for all categories. Alignment also found to be positively effective for all types of industries and business strategy types except the defender type within business firms.

Cohen and Toleman(2006) focused on social factors as commitment, mutual understanding and shared vision between IT and business and their effects on business-IT relationships and their individual and collective effects on firm performance. He studied with 167 South African and Australian companies and concluded with empirical proofs for aforementioned relationships.

Anthony et al.(2006) examined the moderating effect of strategic IT alignment on the relationship between IT investments and firm performance for 84 manufacturing firms. He verified a strong effect of alignment on IT payoffs and organizational success.

Dong et al.(2008) measured the maturity of business strategy, IT strategy and strategic alignment between the two and examined their effects on firm performance. He concluded that alignment has strong affirmative effects on firm performance even more than that of the business strategy.

The important point about Dong et al.'s study is that he stressed the importance of environmental factors, especially economic and industrial development of the country. He conducted his study in China, which is an emerging economy as they called and a rapidly transforming market. Thus, for them, under such circumstances business could be conducted with temporary decisions rather than long term strategies. Despite these factors still alignment of information system with business strategies still proven to be effective. This point encouraged us to study alignment in Turkey also,

where the conditions are relatively similar with China as compared with the Western industries.

There are also few studies that did not empirically support the relationship between alignment and firm performance. As Chan and Reich(2007) cited it, Tallon(2003) reported that seventy percent of the sample firms increased their organizational performance with IT alignment, while thirty percent did not, even they got worse. Another example was the Palmer and Markus's (2000) study that they could not confirm the relationship between alignment and organizational success while examining the implementation of quick response technology in retailing sector. (p: 307)

However Chan and Reich argued that the studies who did not report a positive effect of IT alignment on the firm performance are mainly due to a lack of control variables in the analysis.(p: 307)

2.3 Antecedents of IT and Business Strategic Alignment

As we stated in the beginning of this chapter, the research paradigm employed in this study is the contingency perspective. "Contingency theory tells us that certain contextual and organizational factors fit together to facilitate alignment. Thus, certain business and IT factors, when combined in certain contexts, produce superior performance."(Chan & Reich, 2007) The antecedent factors to alignment therefore should not be analyzed in a causal relationship with alignment, rather one should think that the presence of these factors positively reinforces attaining the alignment.

The studies that investigate the antecedents of alignment can be analyzed under two categories. First one is the group that tries to find out those factors, second the ones that empirically tests those antecedents.

The first category that tries to find out those factors by its nature should be exploratory, by asking the practitioners about their opinion. The studies in this category can also be classified into two categories based on their methodologies, first is qualitative ones that asks the managers to list the antecedents with open ended questions without a pre-list of factors, second is the quantitative studies that asks the managers to rate the factors from a pre-prepared list. Second one also takes the factors from the first, qualitative group of studies. Main part of our study can also be classified under this second category.

The second group, confirmatory ones, which tries to test the factors by correlating them with their actual alignment score measures. The studies mentioned in the previous part are under this category. Since we empirically tested the factors we asked from the managers one part of our study can also be classified under this category.

Lederer and Mendelow (1989) interviewed with 20 top IT managers and asked them about their experiences in coordinating their IS plan with business plans. They stated that this coordination was an indicator of the extent IS supports organizational goals and objectives. He analyzed their answers and concluded that in general four factors made this coordination difficult to achieve:

1. Unclear or unstable business mission, objectives, and priorities
2. Lack of communication between business and IT managers
3. Absence of IS management from business planning process

4. Unrealistic expectations and lack of sophistication of user managers

Luftman et al. (1999) asked 1051 executives from diverse industries in US to list both the enabler factors for the alignment. They consolidated the lists and prepared the list in the Table 2.1. The order of factors reflects the frequencies that executives mentioned them.

Table 2.1 Luftman et al.'s list of enablers and inhibitors

ENABLERS	INHIBITORS
Senior executive support for IT	IT/business lack close relationships
IT involved in strategy development	IT does not prioritize well
IT understands the business	IT fails to meet its commitments
Business - IT partnership	IT does not understand business
Well-prioritized IT projects	Senior executives do not support IT
IT demonstrates leadership	IT management lacks leadership

Reich and Benbasat (2000) interviewed with 45 executives and investigated ten business units within three Canadian insurance companies in order to understand what factors contributed to achieving social dimension of alignment. Social dimension, together with intellectual –strategic- dimension constitutes the construct of business-IT alignment we employed in this study.

They divide the social dimension of alignment into two part: short term and long term alignment. They meant by short term alignment as the "mutual understanding of current objectives" and long term as "the congruence in IT vision between IT and business executives."

They found out antecedents as; for short term alignment: shared domain knowledge, IT implementation success, communication between business and IT executives, and connections between business and IT planning. For the long term they found only shared domain knowledge to be influential.

Rathnam et. al. (2004) interviewed with ten top executives, including both IT and business executives, of a financial service company in US. They asked them to indicate: whether there is a gap exist between business strategy and IT strategy, why the gap existed, what would be the methods to minimize these gaps.

Based on their answers they prepared the following list of the factors that lead to poor alignment between IT and business strategy. They categorized the factors as strategy related, communication related and education related.

Table 2.2 Rathnam et al.'s list of reasons for a gap between business and IT strategy

Why Business Strategy and IT Strategy Alignment Gaps Exist
Strategy
Lack of business strategy
No communication of business strategy
Misalignment between business areas
Lack of IT participation in business strategy development
Communication
Lack of common terminology between business and IT departments
Poor communication skills of IT personnel
Us vs. them mentality between business and IT departments
Education
Lack of enterprise-wide view by business personnel
Lack of understanding about the need to align business strategy and IT strategy
Lack of knowledge concerning IT competencies and scope
Limited understanding of new technology and risks

Teo and Ang (1999) in their survey study asked 136 managers in Singapore to rate the list of factors, which are driven by previous studies, in terms of their effect on business-IT alignment. The Table 2.3 lists those factors and their respective scores. Scores are given for the importance of the factor, ranging from ‘not important’ (1) to ‘very important’ (5) in their contribution to alignment.

Table 2.3 Teo and Ang's list of critical success factors for IT alignment

Factors to be rated	**Mean Score**
1. Top management is committed to the strategic use of IT	4.34
2. Information systems (IS) management is knowledgeable about business	4.26
3. Top management has confidence in the IS department	4.20
4. The IS department provides efficient and reliable services to user departments	4.12
5. There is frequent communication between user and IS departments	4.07
6. The IS staff are able to keep up with advances in IT	4.10
7. Business and IS management work together in partnership in prioritizing applications development	4.06
8. Business goals and objectives are made known to IS management	4.06

9. The IS department is responsive to user needs	4.03
10. Top management is knowledgeable about IT	4.00
11. The IS department often comes up with creative ideas on how to use IT strategically	4.00
12. The corporate business plan is made available to IS management	4.00
13. There is a set of organizational goals and objectives for the IS department	3.91
14. User departments view IS staff as competent	3.88
15. The IS management actively participates in business planning	3.74
16. Top management actively participates in IS planning	3.71
17. The planning horizons for business and IS plans are similar	3.55
18. Users actively participate in IS planning	3.48

Aggarwal(2010) investigated enablers and inhibitors of alignment in Indian petroleum sector and collected data from 368 executives and asked them to rate previously defined factors whether the factor enables the alignment (+2) or inhibits it (-2). The Table 2.3 includes top ten factor that positively contributes to alignment.

Table 2.4 Aggarwal's list of factors

Factors to be rated	Mean Score
Strong Top management commitment	1.48
Strong financial position of the firm	1.44
Senior executives' support for IT	1.18
Extensive computer facilities within the firm	1.17
IT involved in the strategy development	1.10
Strong market position of the firm	1.00
Strong Organizational support	0.97
Strong planning capability of the firm	0.90
Linking between IT plans and strategic plans	0.83
Sharing of IT resources	0.50

The studies mentioned up to now in this part were the ones that reflected the opinions of executives. Whereas the previous part, which is dedicated to the linkage between organizational performance and IT alignment, the studies also investigated the contributing factors to the alignment and their effects were empirically tested with actual/real figures. The upcoming studies were designed to investigate the antecedents of alignment again with actual figures, however they did not touch upon their contribution to organizational performance.

Jorfi and Jorfi (2011) studied antecedents of IT alignment in Iran Agricultural Bank and collected data from 82 executives. They

reached the conclusion that IT flexibility, IT capability and communication effectiveness have a positive impact on the alignment.

Yayla and Hu (2009) investigated the driver factors and antecedents of strategic IT alignment. They analyzed the IT unit structure, namely centralization of IT decision making and formalization of IT activities, shared domain knowledge, successful IT history and relationship management as antecedents of alignment; and communication between business and IT managers, connection between business plans with IS plans as drivers of the alignment.

Yayla and Hu concluded that IT unit structure –centralization and formalization of IT department- has partial support for drivers of alignment where as other three antecedents, shared domain knowledge, successful IT history and relationship management have positive effect on driver factor. Drivers' contribution to alignment is also supported by the study.

Most important point about this study is that the study conducted in Turkey and with Turkish managers, though the study published in US. Thus this study reflects the contextual factors in Turkey more than the others in the literature, so we made references to this study in the analysis and discussion parts.

We presented our summary of antecedents of IT-Business alignment in the next page. We include some of the studies only in the Table 2.5, but not in the above part.

Table 2.5 Antecedents literature summary

Authors	Year	Method	Applied on	Antecedents / Major findings
Lederer, Mendelow	1989	Qualitative/Interview	20 Executives in middle to large companies in US	The factors that impede the alignment are: 1. Unclear or unstable business mission, objectives, and priorities, 2. Lack of communication, 3. Absence of IS management from business planning process, 4. Unrealistic expectations and lack of sophistication of user managers
Teo, King	1996	Questionnaire Survey	157 executives from US	IT planning and business planning integration
Luftman et al.	1999	Qualitative/Interview	1051 executives from US	Enablers: Senior executive support for IT, IT involved in strategy development, IT understands the business , Business - IT partnership , Well-prioritized IT projects, IT demonstrates leadership.
Teo, Ang	1999	Questionnaire Survey	136 Executives from Singapore	18 factors were found. Top three are 1. Top management is committed to the strategic use of IT, 2. Information systems (IS) management is knowledgeable about business, 3. Top management has confidence in the IS department
Reich, Benbasat	2000	Qualitative/Interview	45 executives from 3 companies	Shared domain knowledge, IT implementation success, communication between business and IT executives, and connections between business and IT planning

Authors	Year	Method	Applied on	Antecedents / Major findings
Ratham et al	2004	Qualitative/Interview	10 executives of a bank operates in US	improving business strategy and vision, communicating business strategy and vision, aligning various business units
Chan et al.	2006	Survey/SEM	Academic institutions and private firms in US	shared domain knowledge, planning sophistication, prior IS success, organizational size and environmental uncertainty
Beverlin M. Hammett	2008	Chi Squeare/Pearson	90 Executives over the globe	Level of communication, support for IT from business professionals, shared domain knowledge, IT infrastructure and processes
Preston, Karahanna	2009	Survey/SEM	243 Executive in US	Shared understanding was analysed as a major antecedent and this also has 4 antecedents: shared language, shared knowledge, components of systems of knowing, relational similarity

Aggarwal	2010	Survey study	368 Executives in petroleum sector	The first five enablers were found as: Strong Top management commitment, strong financial position of the firm, senior executives' support for IT, extensive computer facilities within the firm, IT involved in the strategy development.
Jorfi and Jorfi	2011	Correlation Analysis	82 executives of banking sector in Iran	IT flexibility, IT capability and communications effectivity has positive effects on IT alignment

CHAPTER 3

RESEARCH DESIGN

This section describes the design of our research in detail. Firstly the methodology employed in the study will be explained. Secondly the constructs operationalized in the survey will be mentioned in detail. Then the survey design will be described. Later data collection technique and sample selection process will be outlined. Then the demographics of the respondents will be given. Lastly the reliability and validity concerns will be addressed.

3.1 Methodology

In this study we employ a quantitative approach, meaning that the data we gathered and the techniques we used to analyze the data are all quantitative in their nature. Among quantitative techniques we used correlational research technique to find out the relationship between ten organizational factors and firm's IT alignment score.

However though at the beginning we planned it to be a mere quantitative study, we needed to gather qualitative data as well. Some points in our quantitative analysis required more explanations to have a deeper insight. Thus we collected qualitative data as a secondary data to support our findings in quantitative analysis. So our model transformed to be a mixed model research. Among the mixed methods our models fits with the definition of *embedded correlational method*, since our study is mainly based on correlation analysis. (Creswell, 2011)

Correlational research is used to describe a relationship between two variables that scores on one range is compared with that of the other. In other words correlational study describes the degree to which two sets of quantitative values are related. Correlational research uses correlation coefficient to measure the strength of the relationship. (Fraenkel, Wallen, & Hyun, 2011) In this study we used correlational analysis to describe the relationship between the firms' success on ten organizational factors and their IT alignment score. Among the correlational techniques, Spearman's correlation provides more

reliable analysis than the Pearson's (Hauke & Kossowski, 2011) for nonparametric(distribution-free) data, as in our case. We used Spearman correlation (r_s) to measure the strength of the correlation.

The reason why we did not include multiple regression in our analyses is that multiple regression assumes a dependency between input and output variables and also implies a prediction between them.(Fraenkel et al., 2011) However as we described in the beginning of second chapter, our paradigm does not fit with any dependency and prediction between ten organizational factors and IT alignment. It rather proposes a concurrency between measurements of two distinct phenomenon. Thus we did not propose any causal relationship between the factors and the alignment so we did not use multiple regression in our analysis.(Fraenkel et al., 2011).

In the qualitative part of our study we made interviews with four managers who also participated in our survey. We prepared a structured questionnaire for the interviews and used note taking method for coding the answers of the respondents.

3.2 Research Constructs

In this section research constructs operated in the survey will be explained.

3.2.1 IT and Business Strategies Alignment

Measuring the level of alignment between IT and business strategies has been regarded as a major challenge in the literature. Among other techniques we utilized the instrument that was proposed by Cragg et al (2002) and then used by Chen (2010).

The technique, calculating the fit between business strategies of the firm and IT's support for those strategies, has been the most commonly used one in the literature. However this technique also has varied applications, in terms of the number and coverage of strategies and in calculating the match level between the strategies and IT's role in those strategies.

Our model includes eight strategies of the firm: reducing operational costs, providing quality customer service, improving the efficiency of production process, distinguishing products from those of competitors, improving the quality of products, identifying new markets, diversifying the products, introducing new products earlier than competitors. We excluded one strategy from the strategies list of

Cragg et al. and Chen: 'embarking on intensive marketing of our product', because we thought that managers in Turkey may not be familiar with the term 'intensive marketing'. We consulted some professionals and they reported that the term might not be understood properly by managers, since it was not a well-known marketing strategy in Turkey.

As stated above the instrument consists of two sets of data, first part is measuring the importance of various strategies for the firm and second part measures the extent to which the IS of the firm contributes to the respective strategy. For the first part we used a binary question to understand whether the firm employs the mentioned strategy or not, rather than a range of importance levels. In the second part, we asked the manager to indicate their IT's contribution for that strategy, provided that the firm employs the respective strategy.

We used moderation approach, which takes the product of the two scores: importance of the strategy for the firm and IT's support for that strategy. However we used binary score for the former; which means that we asked the managers whether they employ such a strategy or not. The moderation approach is favored by Cragg et al. as an alternative to matching approach, which takes the absolute difference between the two scores for each business strategy.

3.2.2 Antecedents of IT-Business Strategies Alignment

We acquire the list of our antecedent factors from previous studies. The factors we utilized in this study are:

1. The presence of effective and functional IS
2. Executive support for IT
3. Well defined business strategies, missions and objectives
4. Commitment to strategic use of IT
5. Business (managers) understands IT
6. IT (managers) understands business
7. Business-IT planning integration
8. Communication between business (managers) and IT (managers)
9. IT's (managers') involvement in strategy development
10. Prior IT success

The Table 3.1 lists the studies that investigate the antecedent factors as well as the corresponding factor employed in our study.

Table 3.1 List of papers and their antecedents that we drive our factors from

Authors	Research Method	Found/Measured Antecedents	Related Antecedents in our study
(Teo & King, 1997)	Questionnaire survey from 157 firms from diverse industries in US	Top management's perceptions of IS importance	Executive support for IT
		IS competence	The presence of effective and functional IS
(Luftman et al., 1999)	Data collected from 1051 executives from diverse industries in US	Senior executive support	Executive support for IT
		IT's involvement in strategy development	IT's involvement in strategy development
		IT understands business	IT understands business
		Business-IT partnership	Communication between Business and IT
		Well-prioritized IT project	Prior IT success
(Teo & Ang, 1999)	Questionnaire survey on 136 IS executives from Singapore	Top management is committed to the strategic use of IT	Commitment to strategic use of IT
		IS management is knowledgeable about business	IT Understands Business
		Top management's confidence in IS	Executive support for IT
		Communication between user and IS departments	Communication between Business and IT
		IS provides efficient and reliable services	The presence of effective and functional IS
		Business and IS work together in partnership	Communication between Business and IT
		Top management is knowledgeable about IT	Business understands IT
		Top management participates in IS planning	Business-IT Planning Integration
(Reich & Benbasat, 2000)	Interviews with 45 executives from 3 finance companies	Shared domain knowledge	Business understands IT / IT understands business
		Successful IT history	Prior IT success
		Connections between business and IT planning	Business-IT planning integration
		Communication between business and IT executives	Communication between Business and IT
(Aggarwal,	Questionnaire	Senior executives'	Executive support for IT

2010)	survey on 368 executives from Indian Petroleum Sector	support for IT	
		Extensive computer facilities within the firm	The presence of effective and functional IS
		Linking between IT plans and strategic plans	Business-IT planning integration
(Chan, 2002)	Interviews with eight firms' executives from diverse industries	Communication and understanding between line and IS executives	Communication between Business and IT
		linked business and IS missions, priorities, and strategies	Business-IT planning integration
		interconnected business and IS planning processes, and resulting plans	Business-IT planning integration
		Line executive commitment to IS issues and initiatives	Executive support for IT

Both the IT's contribution for eight strategies, and the ten factors we examined in this study are illustrated in the Figure 2 below.

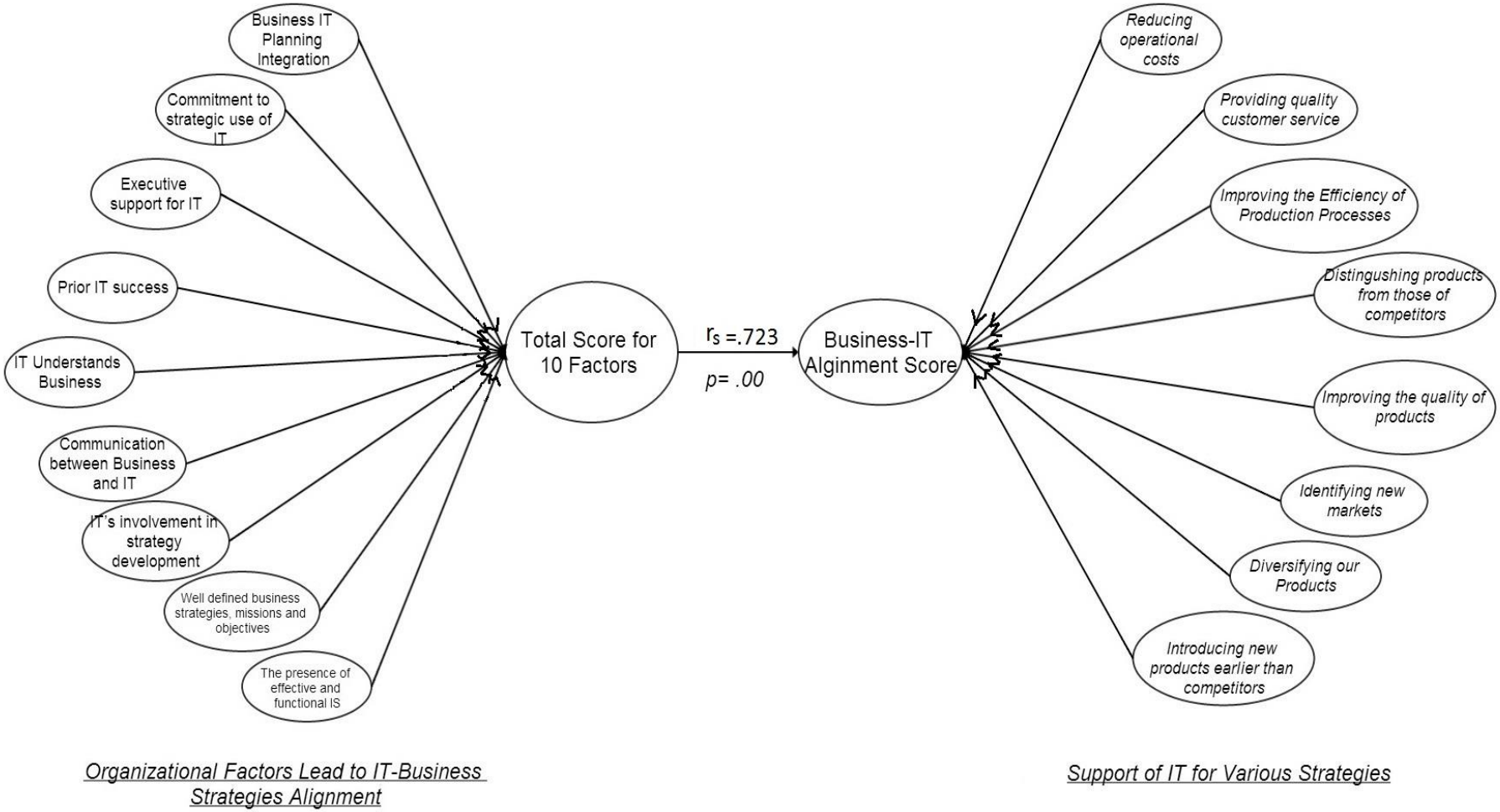

Figure 2 The Research Model

3.3 Survey Design

The survey consist of three parts. First part includes demographic questions about both the firm and the respondent; second part includes questions to measure the extent to which IT supports business strategies and finally the part that respondents rates the effects of ten factors on the IT and business strategies alignment.

The demographics part include questions about the sector and the industry the firm operates in, age of the company, number of employees, whether the firm has a separate IT department or not, number of IT personnel, annual sales and job title of the respondent.

The second part requires the respondent manager to rate the contribution of their IT for eight strategies. This is a 5 item Likert scale, ranging from strongly disagree to strongly agree, where strongly agree denotes a high contribution of IT for that strategy and strongly disagree denotes the opposite. Apart from these five scales there is one more choice in this section: 'we do not follow such a business strategy'. This choice should not be confused with 'strongly disagree' option, because 'strongly disagree' option means that we do have such a business strategy, but our IT has little or no contribution for this strategy, however this option states the strategy is not among our strategies.

The last part includes organizational factors and respondents are asked to both rate the factors' effect on IT and business strategies alignment (5 points Likert Scale) and the success of their companies in terms of that factor. (Binary: Successful or not successful)

There are few questions after the third part on whether the respondent regards IT and business strategies alignment as important or not. There is also optional question that asks the respondent to list any other factors that they find to be effective on alignment.

The survey is prepared and sent as an online survey and the survey tool of Qualtrics.com was used for the preparation of the survey and acquiring responses from participants. We included the questionnaire in the Appendix.

As a pilot study, before launching the survey, we showed the survey to one professional manager and two academicians who also run private firms. We asked them their opinion about the clarity of

wording, understandability of the terms and purpose of the study. Based on their suggestions, we made some minor changes in the wording of the survey.

3.4 Data Collection and Sample Characteristics

Since the survey asks about the strategies and organizational factors of the company, our respondents were needed to have a firm-wide perspective of their organization and to have full knowledge about mission, vision and long term strategies of the firm; and only the top and middle level executives met these criteria. Thus we mailed our survey only to those managers.

The selection criteria for firms was the size of the firm. Since we asked about the firm's IT and business strategies alignment, the firm should have formalized business strategies and an IT unit that supports those strategies. Thus generally only large firms satisfies this criteria.

Thus we requested the list of large firms from Ankara Ticaret Odasi (Ankara Chamber of Commerce) and they provided us first largest 2000 firms in terms of capital budged size and their contact information as well. However they did not provide e-mail addresses of their executives. So we tried to find their e-mail addresses through their websites. We found only 820 e-mail addresses of executives.

We send them the mail which included brief explanation about the study, the purpose of the study together with the link of our online survey.

83 managers filled the questionnaire, which makes a response rate of 10% approximately. This return rate is an expected figure for top level managers.

When we analyzed the responses, 12 out of 83 responses were discarded because of inconsistent and improper answers. This made our final number of response for analysis 71, which was an adequate size for our analyses.

3.4.1 Qualitative Part of the Study

For the qualitative part we selected the six candidate interviewees from the managers who participated in our survey and also leaved their e mail addresses in the optional field. We asked them whether to participate in our interviews. Four managers agreed to

participate and gave their telephone number. By this way we made a telephone interview with them.

We prepared a structured questionnaire for the interviews. This is included in the We used note taking method while conducting the interview.

3.5 Demographics of Respondents

3.5.1 Sectors

The number of firms for each sector is given in the Table 3.2. As the respondents had the multiple selection option, the total exceeds 71.We cannot provide percentages for that reason also.

Table 3.2 Frequency table for sectors

Sectors	Frequency
Production	37
Services	30
Trade	16
Other	3

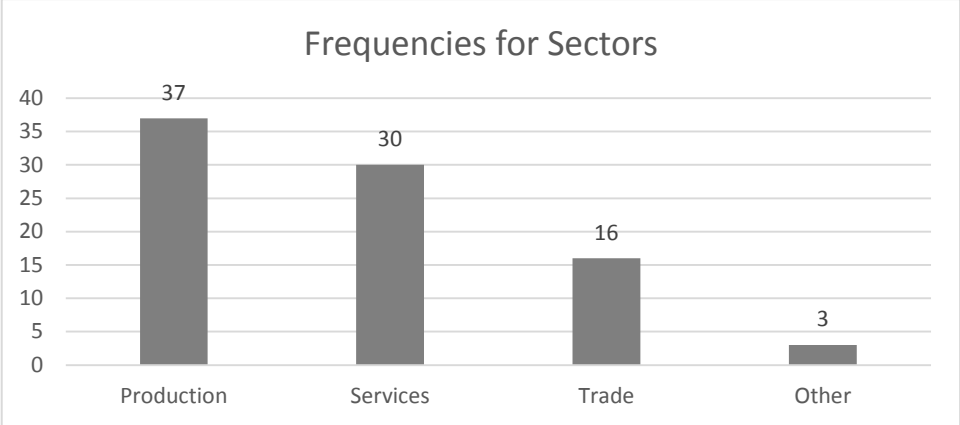

Figure 3 : Frequencies for sectors

3.5.2 Industries

To ensure the external validity of the study, the survey was distributed to wide range of industries. No industry was excluded while determining the target population.

The Table 3.3 illustrates the frequencies and percentages for each industry. The figure shows that our sample represents a wide range of industries though their weights in total differs highly.

Table 3.3 Frequency table for industries

Industry	Frequency	Percent
Machinery	15	21%
Inform. Techn.	12	17%
Construction	12	17%
Finance	10	14%
Furniture	6	8%
Energy	5	7%
Defense	3	4%
Healthcare	2	3%
Transportation	2	3%
Other	4	6%
Total	71	100,0

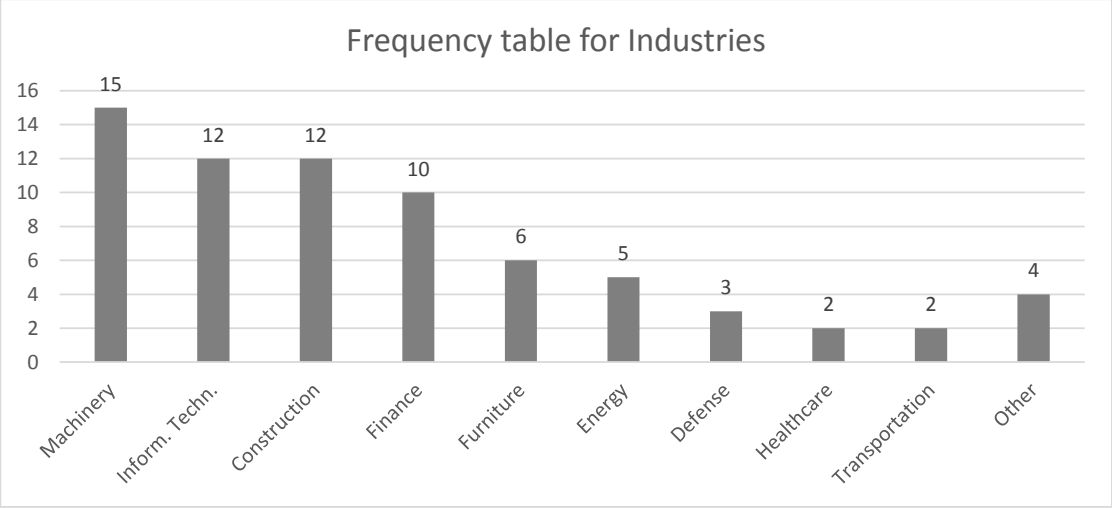

Figure 4 Frequencies for industries

3.5.3 Age of the Company

The Table 3.4 illustrates that about seventy percent of firms are older than 15 years and all except one firm (99%) are older than one year. This is an affirmative figure for our study that ages of companies are sufficient enough to reflect upon their strategic directions and to judge the position of information system in their business operations.

Table 3.4 Frequencies for ages of the companies

	Frequency	Percent	Cumulative Percent

>15 years	49	69,0%	69,0%
10-15 years	7	9,9%	78,9%
5-10 years	7	9,9%	88,7%
1 – 5 years	7	9,9%	98,6%
< 1 year	1	1,4%	100,0%
Total	71	100,0	

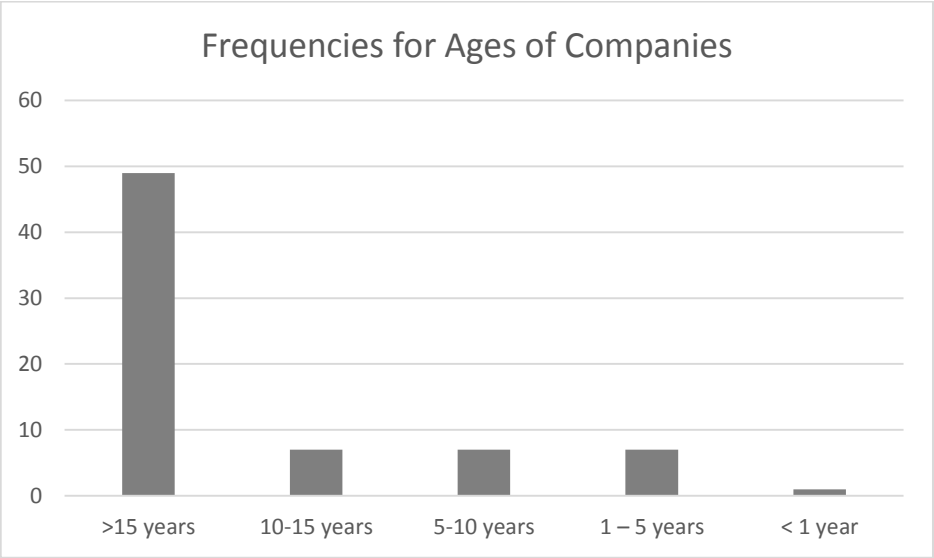

Figure 5 Frequencies for ages of the companies

3.5.4 Number of Employees

The Table 3.5 below illustrates the number of employees in the respondent firms. Almost 90 % percent of firms have number of employees greater than 20, which is a positive picture for our study, that the firms' size are sufficient enough for our analysis.

Table 3.5 Frequencies for number of employees

Number of Employees	Frequency	Percent.	Cum. Percent.
>1000	17	23,9	23,9
250-1000	10	14,1	38,0
50-250	26	36,6	74,6
20-50	10	14,1	88,7
< 20	8	11,3	100,0
Total	71	100,0	

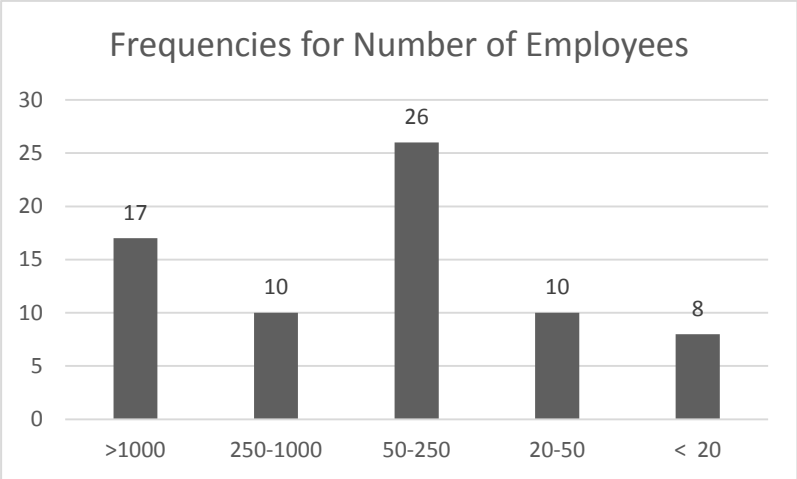

Figure 6 Frequencies for Number of Employees

3.5.5 Number of IT Personnel

The Table 3.6 illustrates the number of IT personnel of respondent firms. Majority of firms (55%) has IT personnel less than 5.

Table 3.6 Frequencies for number of IT personnel

No. of IT Personnel	Frequency	Percent	Cumulative Percent
>20	19	27%	27%
10-20	3	4%	31%
5-10	10	14%	45%
<5	39	55%	100%
Total	71	100	

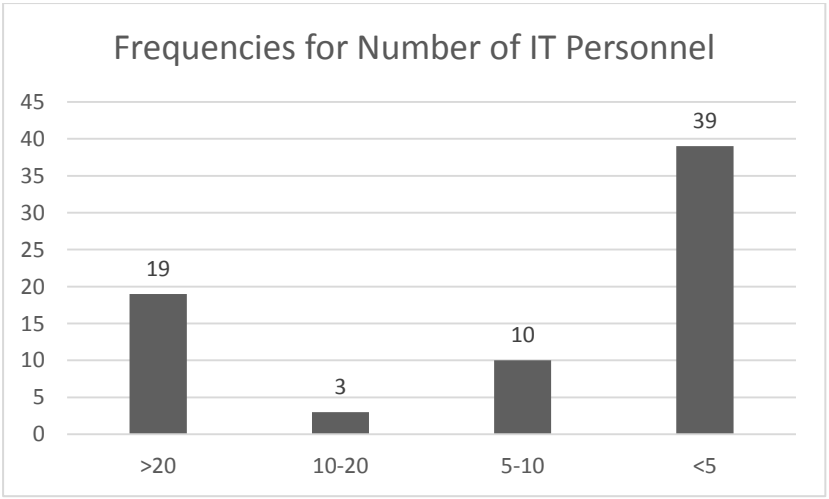

Figure 7: Frequencies for number of IT personnel

The Figure 8 shows both the number of IT personnel and number of employees together, to see how they are correlated. Numbers next to dots are the frequency figures for that interception.

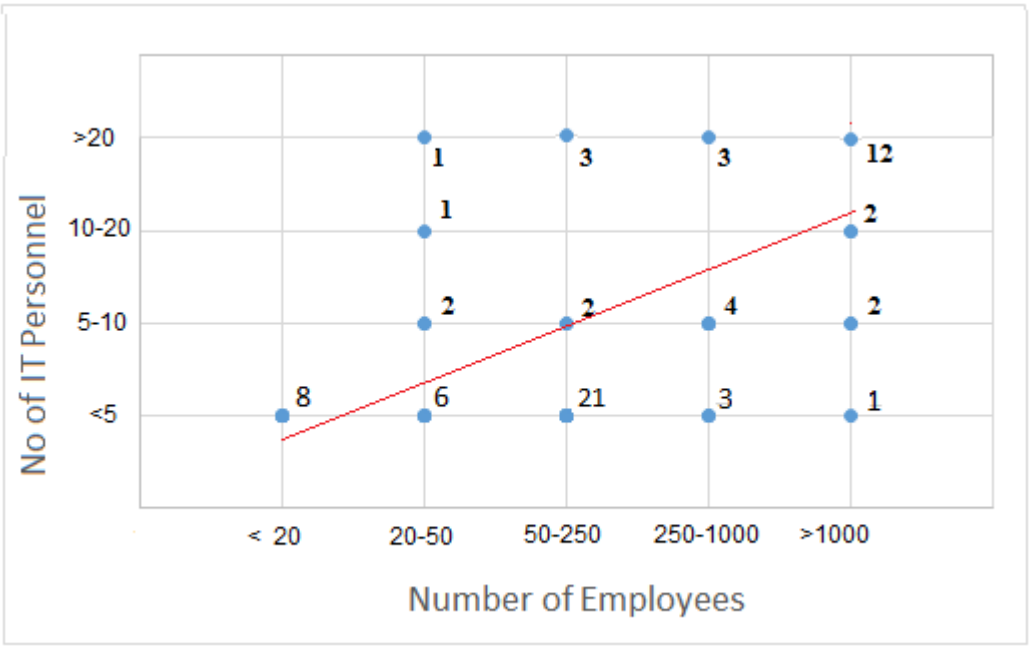

Figure 8 Number of IT personnel * Number of Employees

3.5.6 Annual Sales

The Table 3.7 illustrates the annual sales of respondent firms. According to decision of Council of Ministers in 2012, 56% percent of our firms are middle to large firms and remaining firms are classified as small enterprises.[2]

Table 3.7 Frequencies for annual sales

Annual Sales (TL)	Frequency	Percent	Cumulative Percent
>500 Million	20	28,2%	28,2%
50-500 Million	20	28,2%	56,3%
10-50 Million	16	22,5%	78,9%
5- 10 Million	7	9,9%	88,7%
1-5 Million	5	7,0%	95,8%
< 1 Million	3	4,2%	100,0%

[2] http://kosgeb.gov.tr/Pages/UI/Haberler.aspx?ref=606

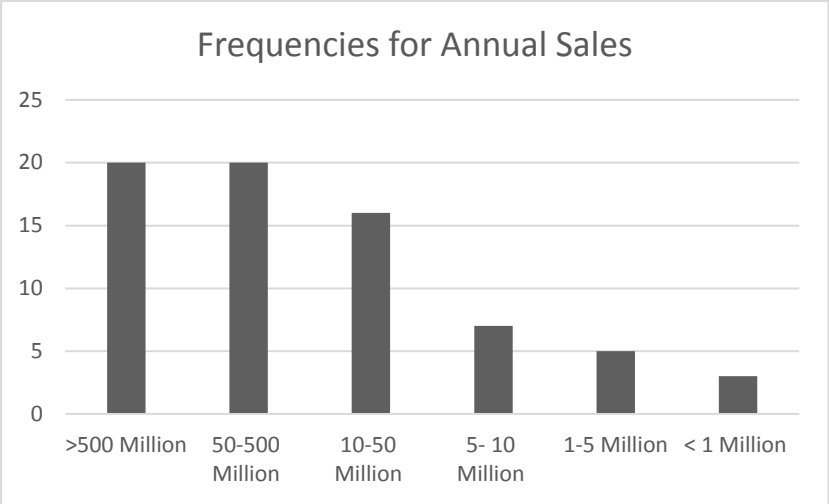

Figure 9 Frequencies for Annual Sales

3.5.7 Job Titles of Respondents

Table 3.8 illustrates the job titles of respondents. CIO's are normally included in the vice president group, however we kept it separate for further analysis. From the table we can say that after including CIO's 79% percent of them are high level executives and 86% are at middle to high level managers.

Thus our selection criteria, to have a complete vision of the firm and its strategies, is satisfied to a sufficient extent. Even the people in 'other' group meet this criteria, since most of them specified their titles as managers.

Table 3.8 Frequencies for Job Titles

Job Title	**Frequency**	**Percentage**
Vice President	26	37%
CEO / Owner / Partner	19	27%
CIO	11	15%
Other Manager	5	7%
Other	10	14%
Total	71	100

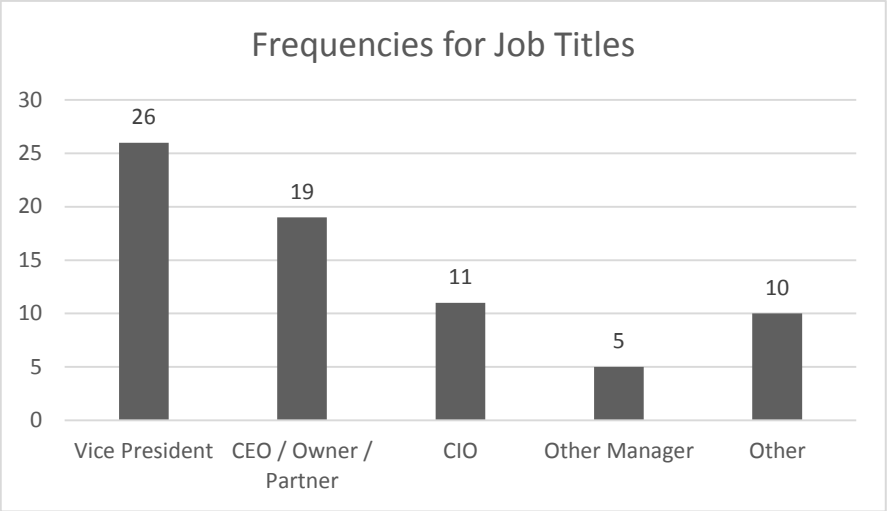

Figure 10 Frequencies for Job Titles

3.6 Reliability and Validity Concerns

We will list here the main validity and reliability concerns that can be arisen for the process starting from the survey preparation till the final analysis. The reliability of the results of the study as a whole depends on the caution shown for those individual concerns.

1. Internal Reliability: Construct Validity

Cronbach's Alpha is generally used as a measure of internal consistency of a group of variable. That is to say it measures the extent to which the variables are inter-correlated within the group. Its values range from negative infinity to one. Higher alpha means more consistency among the group of variables thus the more reliable a latent variable would be. (A. Yayla & Hu, 2009)

There is no clear cut point for alpha values, but generally alpha values greater than 0.7 are suggested by a wide range of academics. Our Cronbach's Alpha measures are given in the Table 3.9 below, all of which are above the required level.

Table 3.9 Cronbach's Alpha measures table

Group of Variables	Cronbach's Alpha	N of Items
Strategies	0,848	8
Ratings for Factors	0,777	10
Success in Factors	0,732	10

External Validity

External validity is a matter of generalizability of the results of the study. (Fraenkel et al., 2011) In our study the list of main concerns regarding the generalizability of our analysis is given below:

1. Sampling: We select the firms whose initial capital is above five million Turkish liras enrolled in Ankara Chamber of Commerce as our population. Reasons to select Ankara province: Ankara is the capital city of Turkey and according to a recent index that lists the provinces of Turkey, Ankara was found to be second province of Turkey–after Istanbul in terms of the level of socio-economic and industrial development. (Yıldız, Sivri, Berber; 2010) Based on these information we can state that Ankara is among the best candidate provinces to represent the Turkish industry accurately.

From the firm list that was obtained from ATO (Ankara Chamber of Commerce) we tried to reach all firms without excluding any single firm or any industry. The industries given in the demographics part proves that the study covered sufficient range of industries that could represent the Turkish industry.

2. Respondents: One validity threat can arise about the respondents, that is whether they are exactly the addressed executives or not. The online survey was sent directly to e-mail addresses of executives of the firms in the sample. In addition to this, nearly forty percent of respondents wrote down their mail addresses though it was an optional field, which indicates that their identities are authentic. This also shows that respondents are interested in the topic and pays attention to the results of our study.

3. Number of Respondents: For correlation studies it is suggested that number of respondents should be at least 30 to have reliable analysis. (Fraenkel et al., 2011) It is also suggested that number of respondents should be at least five times the number of constructs. We have 10 factors and 71 respondents, thus the number of participants is more than the required level.

For the reliability of our sample size we used The Kaise-Meyer-Olkin(KMO) measure of sampling adequacy test. KMO values indicate the adequacy of the sampling and explain the extent of the interrelation between variables (Suh, Hillegersberg, Choi, & Chung, 2012). A score above the 0.5 is accepted as reliable in academic

circles[3]. Our measure of KMO statistic was found to be 0.664 for our ten factors, which is above the accepted level.

4. Answers: To increase the reliability of responses and to ensure that the answers were given properly, we included two reverse questions in the factor ratings part. Before analysis of the responses, the ones who gave the same answer to the dual questions (those who has a reverse version) were excluded from the analysis. Also the fact that forty percent of participants leaved their email addresses to receive the result of the study is also supporting our claim that the responses were filled with proper attention.

One candidate problem were encountered while we analyze the number of IT personnel demographics. We asked the firms to indicate their number of IT personnel in the survey. We mean by this the employees that are responsible for the information system which the firm utilizes for organizational activities. However the problem arises when we asked this question to the information technology firms. We doubted that those managers may have misunderstood the IT personnel, instead of understanding the way we mentioned above, they may have mistakenly understood their general type of employees whose job is information technology development.

To overcome this problem we analyzed the responses given by information technology firms. Some of them were not problematic, because they reported a fraction of their employees as the IT personnel, which indicates that they did understand correctly. We mailed to remaining eight firms, to ensure whether they perceived the question correctly and ask them to indicate their actual number of IT personnel. Four of them returned and we made proper corrections in the data set. Only four firms left uncertain. Then we analyzed the effects of those four firms on the analysis, and noticed that there were no significant changes in the results. We checked especially the factors related with IT personnel –e.g. IT understands business, communication between business and IT- and did not realize any significant effect.

Another issue about the managers' ratings for their success in our ten factors is that these success figures are indeed perceived success by managers and they are not derived from objective sources. Thus we rely on managers' responses for these values.

[3] http://www.sagepub.com/field4e/study/smartalex/chapter17.pdf obtained in January 23, 2015

CHAPTER 4

MAIN ANALYSES

This chapter is organized into four parts: First part includes analysis about the IT's role in business strategies; second part includes measures of overall business-IT alignment score; third part includes organizational factor ratings of managers; and last part gives the figures of firms' success in those factors.

4.1 Role of IT in Business Strategies

These analyses are based on the questions that were asked from the managers about IT's role in eight business strategies. They indicate the support of IT to their respective business strategy through a scale ranging from strongly disagree to strongly agree. (enumerated as 1 to 5 in the analysis) The Table 4.1 illustrates mean scores of IT's support for business strategies and the standard deviation of these means.

Table 4.1 Support of IT for business strategies

Strategy items that are supported by IT	Mean	Std. Dev.
Reducing operational costs	4,46	0,81
Providing quality customer service	4,36	1,40
Improving the efficiency of production process	4,31	1,53
Distinguishing products from those of competitors	4,24	0,99
Improving the quality of products	3,91	1,51
Identifying new markets	3,73	1,34
Diversify our products	3,72	1,38
Introducing new products earlier than competitors	3,64	1,38

From Table 4.1 we observe that in general IT is used for cost reduction, increasing quality of customer service and improving the efficiency of production processes. From that we can say that IT is mainly used for operational efficiency and cost reduction -as the

primary motive-, rather than using for competitive purposes, like distinguishing products from those of competitor, introducing new products earlier than competitors. In other words we can deduce that in Turkey, IT is used for inner strategies rather than outer (market) strategies.

The Table 4.2 gives more detailed figures for IT usage in strategies through industries.

Table 4.2 Support of IT for strategies pertainin to respective industries

Strategy Item that are supported by IT	Transportation (2)*	Finance (15)	Healthcare (2)	Information Tech. (12)	Energy (5)	Construction (12)	Furniture (6)	Machinery (10)	Defense (3)	Other (4)
Reduce operational costs	5	4,2	5	4,85	5	4,17	4,17	4,57	4	4
Provide quality customer service	5	4	4,5	4,92	4,4	4,09	3,8	4,62	4	4,25
Improve the efficiency of production processes	5	4	4,5	5	4	4,17	4,33	4,5	3	3,5
Distinguish our products from those of competitors	3,5	3,8	4	4,75	4,6	4,08	4,33	4,21	3,33	3,5
Improve the quality of our products	5	3,89	4	4,58	3,4	3,5	4,2	3,92	3	3,75
Identify New Markets	5	3,67	3,5	4,25	3,4	3,75	3,67	3,83	2	4
Diversify our Products	5	3,78	3,5	4,5	3,75	3,25	3,67	3,46	2,33	3,75
Introduce New Products Earlier Than Our Competitors	4,5	3,67	3,5	4,5	3,8	3,08	4	3,5	2,33	3,5

* Count of firms in that industry

We can deduce from the table above that:

- Defense shows least usage of IT in their strategies whereas transportation shows the most, which is a reasonable result when we consider the IT usage of respective industries.
- Firms use IT mainly for cost reduction and customer service improvement purposes. However furniture industry, unlike other industries, uses IT mainly for competitive motives, like distinguishing the products, introducing products earlier than competitors. This point makes sense when we consider the furniture industry in which the competition mainly felt in the design of the products and the product variety.
- IT's support for improving the efficiency of production processes takes its greatest scores from information technology, furniture and construction industries. For these industries especially for information technology and construction, we can say that their production processes are complex and require careful planning and proper management of resources. That is where the IT plays a significant and also a strategic role.

4.2 Overall Business-IT Alignment Score Analysis

As described in the section 3.1.1 the overall IT and business strategies alignment score is calculated by taking the average of IT's supports for eight business strategies, after the strategies that are not among the firms' strategies are excluded. This calculation gives us a measure that gives an overall picture of IT's support in business strategies in total.

The overall alignment score was found to be 4.06 (std. dev: 0.72) on average for the sample firms. This figure is in line with what Yayla (2008) found (3.95 over 5) in Turkey, though he utilized a different instrument. Roughly speaking, since the score 4 corresponds to 'agree' in the questionnaire, we can deduce that managers 'agree' that their IT helps them in actualization of their business strategies.

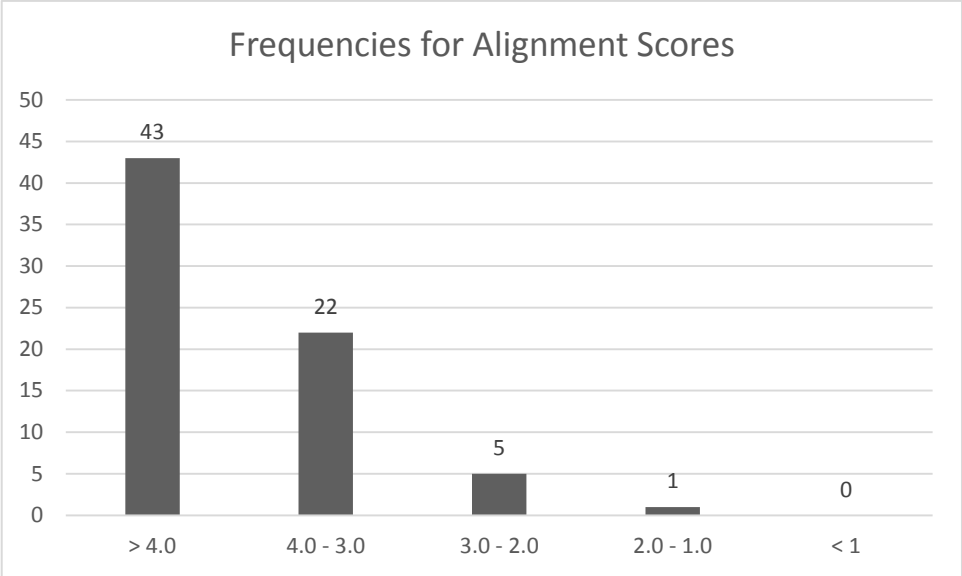

Figure 11 Frequencies for alignment scores

4.2.1 Alignment Scores for Sectors

The graph in the Figure 10 illustrates the mean alignment scores of sectors. Service sector comes first, then the trade, and lastly production sector comes with a score of 3.86. This ranking holds true when we compare the IT usage of these sectors. IT plays a more vital role for a finance company than it does for a manufacturing firm. The difference between the means are also statistically significant (p= .03)

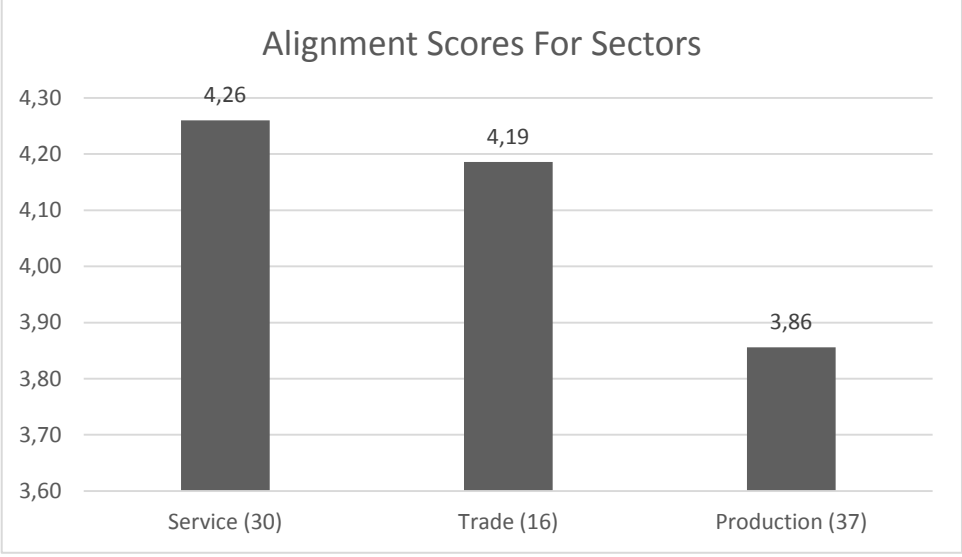

Figure 12 Alignment Scores for sectors

4.2.2 Alignment scores for Industries

The table 4.3 and the Figure 11 illustrates the alignment scores for industries. Differences between the means are statistically significant. (p=.007) Transportation scored the most with 4.75 over 5 and defense industry scored the least with 3.00.

Table 4.3 Alignment scores for industries

Industry	Count	Mean
Transportation	2	4,75
Information Technology	12	4,66
Finance	15	4,15
Healthcare	2	4,06
Energy	5	4,06
Furniture	6	4,03
Machinery	10	3,81
Construction	12	3,76
Defense	3	3,00
Other	4	3,78
Total	71	4,05

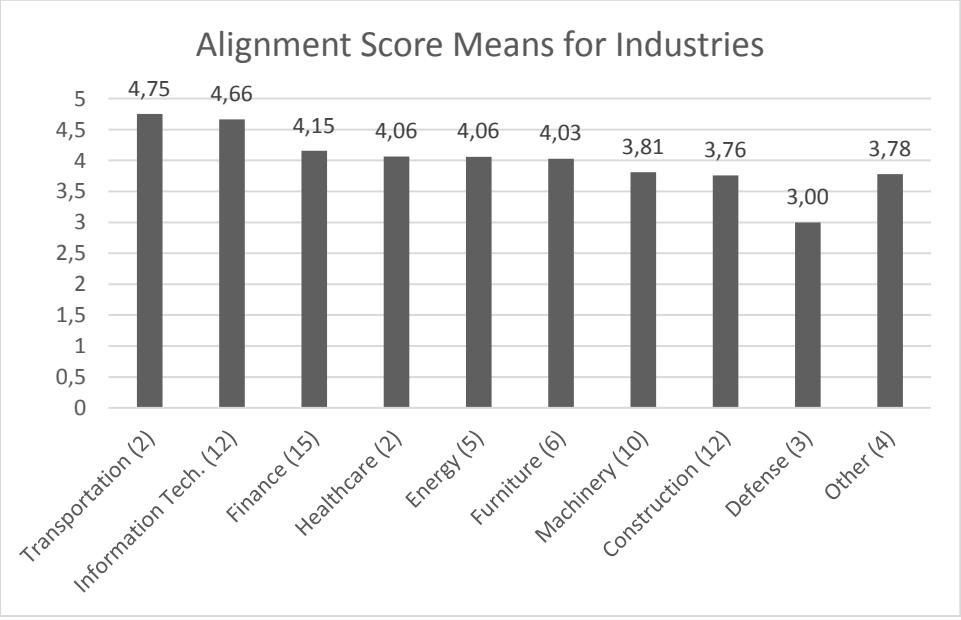

Figure 13 Alignment scores for industries

We observe that the industries that are in the services sectors – transportation, information technology, finance- have higher scores on alignment those that are in production sectors –furniture, machinery, defense-.

Having a separate IT department or group also affected alignment scores. The firms that reported them as having a separate IT department scored 4.14, while those do not have scored 3.73; and difference in the means are statistically significant with a p value of 0.04. This is an expected result, since those who treat IT at a departmental level obviously appreciate the strategic importance of IT than those do not, and eventually pay attention to integrate the IT with their business strategies as well.

4.3 Organizational Factors Ratings

In this part we asked the managers to indicate their opinion about the effects of ten factors on attaining Business-IT alignment.

The table 4.4 lists the factors' mean scores (over 5) of the extent to which the factor contributes to Business-IT Alignment from the manager's point of view. The second column indicates the standard deviation measures.

Table 4.4 Ratings for factors' contribution to alignment

Organizational Factors	Mean	Std.
The presence of effective and functional IS	4.46	.556
Executive support for IT	4.42	.577
Well defined business strategies, missions and objectives	4.35	.699
Commitment to strategic use of IT	4.31	.550
Business Understands IT	4.31	.623
IT Understands Business	4.31	.785
Business-IT planning integration	4.30	.744
Communication between Business and IT	4.15	.710
IT's involvement in strategy development	3.92	.922
Prior IT success	3.49	.954

There are three other studies (Aggarwal, 2010; Luftman et al., 1999; Teo & Ang, 1999) in the literature that use relatively similar method as we do, which is to ask the managers to rate the factors, instead of testing the effects of factors with actual measures. The findings of these three studies are given in the table 4.6.

When we compare our findings with other three studies, there are many similarities as well as important differences that need to consider upon.

Commitment to strategic use of IT is found to be first item in two of those studies; it is also found relatively high in our study with a score of 4.31. This shows that managers in Turkey give similar

importance to awareness of strategic value of information technology in attaining the IT-business alignment as managers in respective countries do.

Top management's support for IT is again appeared among the highest scored items, it is also the second one in our study with a score of 4.42.

We found out that our first factor is 'the presence of effective and functional IS'. This item is fourth and fifth and even eleventh item in other studies. This can be attributed to the fact that managers in Turkey firstly wants from the IT to function well before everything else. This can be understood from our managers' low ratings of their IT success also; prior IT success is found to be 46% and presence of effective and functional IS is 66%. More detailed description is given in the discussion part.

It is observed in these studies that including IT managers in strategy development phase is given higher priority in US than it is in Singapore and India. We can say that developed countries feel the need to include IT managers in strategy development much higher than that of developing countries. Literature supports that finding in the way that the level of IT alignment is regarded as a predictor of organizational success, so the success of firms in total contributes to industrial development of the country(Chen, 2010; Cragg et al., 2002). In addition to this we know from the literature that involving IT managers in strategy development is a strong contributor for IT alignment (Aggarwal, 2010; Lederer & Mendelow, 1989; Luftman et al., 1999; Reich & Benbasat, 2000), therefore we can reach the conclusion that level of involvement of IT managers in strategy development phase can give us a clue about the industrial development of the respective country. As a developing country Turkey also rate the importance of IT's involvement relatively low. (3.92)

Related with this issue we observe that in other three studies IT's role in business were given much more priority than managers in Turkey do. This can be attributed to lack of understanding and appreciation of IT's capabilities and strategic importance, especially by business managers. Two other measures also reinforce this conclusion. First, managers did not find themselves committed to strategic use of IT -57% rate of success-. Secondly business executives find themselves knowledgeable about IT -80% rate of

success-, thus they do not feel the need for IT executives' visions for strategic IT capabilities.

Table 4.5 List of antecedents in other three studies

#	**U.S. (Luftman et al., 1999)***	**Singapore (Teo & Ang, 1999) ***	**India (Aggarwal, 2010)***	**Our Study***
1.	Senior executive support for IT *(20%)*	Top management is committed to the strategic use of IT (4.26)	Strong Top management commitment *(1.48)*	The presence of effective and functional IS *(4.46)*
2.	IT involved in strategy development (16%)	Information systems management is knowledgeable about business (4.26)	Strong financial position of the firm *(1.44)*	Executive support for IT *(4.42)*
3.	IT understands the business *(13%)*	Top management has confidence in the IS department *(4.20)*	Senior executives' support for IT *(1.18)*	Well defined business strategies, missions and objectives *(4.35)*
4.	Business – IT relationship *(12%)*	The IS department provides efficient and reliable services to user departments *(4.12)*	Extensive computer facilities within the firm *(1.17)*	Commitment to strategic use of IT *(4.31)*
5.	Well-prioritized IT projects *(9%)*	There is frequent communication between user and IS departments *(4.07)*	IT involved in the strategy development *(1.10)*	Business Understands IT *(4.31)*
6.	IT demonstrates leadership *(9%)*	The IS staff are able to keep up with advances in IT *(4.10)*	Strong market position of the firm *(1.0)*	IT Understands Business *(4.31)*
7.		Business and IS management work together in partnership in prioritizing applications development *(4.06)*	Strong Organizational support *(0.97)*	Business-IT planning integration *(4.3)*

8.		Business goals and objectives are made known to IS management *(4.06)*	Strong planning capability of the firm *(0.90)*	Communication between Business and IT *(4.15)*
9.		The IS department is responsive to user needs *(4.03)*	Linking between IT plans and strategic plans *(0.83)*	IT's involvement in strategy development *(3.92)*
10.		Top management is knowledgeable about IT *(4.0)*	Sharing of IT resources *(0.50)*	Prior IT success *(3.49)*
11.		The IT department's efficiency and reliability *(4.0)*		
*	Percentage of respondents mentioned the respected factor	Scores are based on 1-5 points	Scores are based on 0-2 points	Score are based on 1-5 points

4.3.1 Different Perspectives of IT and Business Managers

When we compare the responses of business managers with those of IT managers –CIO's, we observed major differences that worth reflecting upon.

The Table 4.6 summarizes the differences between their ratings for factors and the last column indicates the p value in the differences in means. We list all factors though last four ones are not statistically significant.

Table 4.6 Differences between factor ratings of IT and Non-IT managers

Organizational Factors	**IT**	**Non IT**	**p value**
IT's involvement in strategy development	4,62	3,76	.00
Communication between Business and IT	4,62	4,05	.01
The presence of effective and functional IS	4,77	4,40	.03
Commitment to strategic use of IT	4,62	4,24	.03
IT Understands Business	4,69	4,22	.05
Business Understands IT	4,62	4,24	.05
Executive support for IT	4,69	4,36	.06
Business-IT planning integration	4,62	4,22	.09
Prior IT success	3,77	3,43	.25
Well defined business strategies, missions and objectives	4,54	4,31	.29

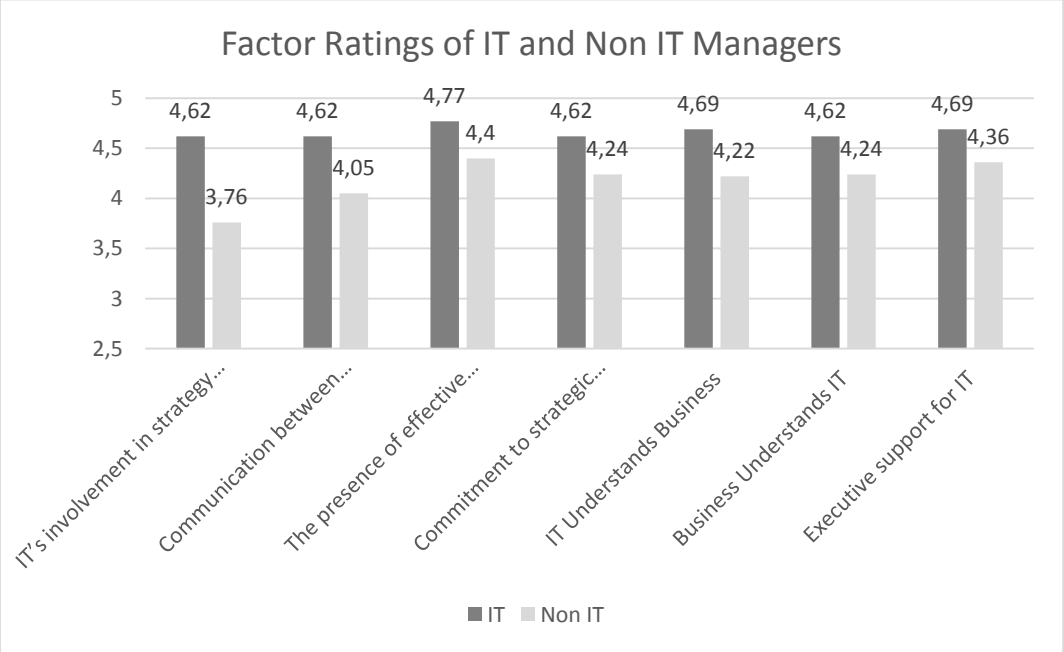

Figure 14 IT- Non IT Executives' factor ratings

Among many conclusions that can be driven from the table, the most significant one is the fact that business managers in Turkey do not appreciate the strategic value of IT as the IT managers do.

Three findings reinforce this conclusion. Firstly business managers rated 'IT's involvement in strategy development' significantly lower than IT managers, which shows that they do not give priority to this factor as IT managers. Secondly they do not appreciate the importance of IT managers' understanding of business, this reinforces the judgment we made above. Lastly if we add the finding that firms do not find themselves as 'committed to strategic use of IT' –57% rate of success- our conclusion becomes highly strong.

4.4 Self-Evaluation of Companies on Ten Organizational Factors

The table 4.7 illustrates the managers' evaluation of their companies in terms of our ten organizational factors. They do so by answering a binary question that asks them whether they find their company successful in terms of the respective factors or not.

We acquired those responses to correlate them with their IT-Business alignment and to find out whether they affect the alignment score.

Table 4.7 Perceived Success rates of firms in terms of Ten factors

Organizational Factor	**Perceived Success Rates**
Business Understands IT	80,3%
Well defined business strategies, missions and objectives	71,8%
Executive support for IT	71,8%
IT Understands Business	70,4%
The presence of effective and functional IS	66,2%
Communication between Business and IT	64,8%
Commitment to strategic use of IT	57,7%
Business-IT planning integration	47,9%
Prior IT success	46,5%
IT's involvement in strategy development	45,1%

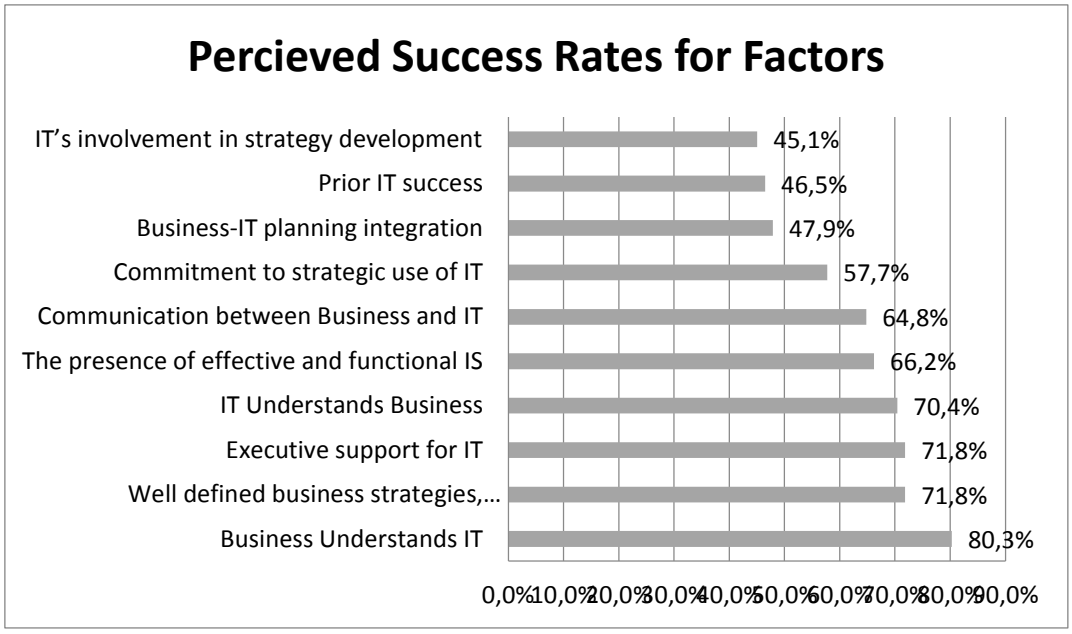

Figure 15 Perceived Success Rates for Factors

4.5 Factor Ratings versus Perceived Success on Those Factors

The Table 4.8 and the figure 14 below indicates the managers' ratings on the importance of factors for IT and business strategies alignment and their perceived success rates on those factors. From these analysis we can say that the managers should pay attention to business-IT planning integration and commitment to strategic use of IT and IT's involvement in strategy development.

Table 4.8 Factor Ratings versus Perceived Success Rates on Those Factors

Organizational Factors	**Mean**	**Perceived Success Rate**
The presence of effective and functional IS	4,46	66,2%
Executive support for IT	4,42	71,8%
Well defined business strategies, missions and objectives	4,35	71,8%
Commitment to strategic use of IT	4,31	57,7%
Business Understands IT	4,31	80,3%
IT Understands Business	4,31	70,4%
Business-IT planning integration	4,30	47,9%
Communication between Business and IT	4,15	64,8%
IT's involvement in strategy development	3,92	45,1%
Prior IT success	3,49	46,5%

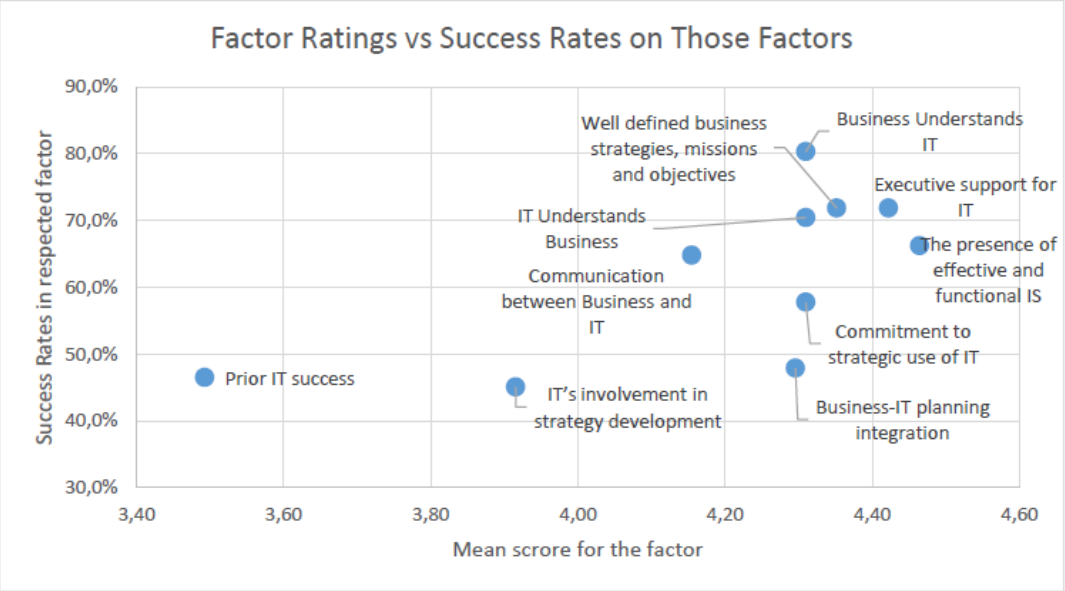

Figure 16 Factor Ratings vs Perceived Success Rates on Those Factors

4.6 Correlation Analysis

In this part we will present the correlation analysis between the firms' success in ten organizational factors and their Business-IT alignment scores. Then we will compare these correlation measures of factors with the managers' ratings for those factors. So we will double check the provisions of managers by analysis on real indicators.

Together with pairwise correlation of each factors, we also found the correlation of a derived variable: 'total score for factors' to analyze the total contribution of factors as a whole to the alignment score. Total score was calculated by summing up scores from individual factors.

A major purpose of correlational research is to clarify our understanding of important phenomena by identifying relationships among variables. (Fraenkel et al., 2011) Therefore in this part we will examine the relationships between our ten candidate factors and IT alignment. It is important to note that the presence of a correlation does not necessarily mean a causal connection, it should rather be read as a concurrency in measurement of two incidents.

We employed the Spearman correlation in our analysis. Spearman correlation provides pairwise relationship between two variables. The reason why we used Spearman instead of Pearson's

correlation is that Spearman correlation does not require the variables to be on an interval scale. So it is best method for ordinal scaled variables.(Hauke & Kossowski, 2011) Since our measures of success in factors is ordinal in their nature we use the Spearman correlation in analysis.

The table 4.9 lists the factors' Spearman correlation coefficients -r_s values- with alignment scores, as well as the p values of those correlations. Except for the last one, business understands IT, all correlations are statistically significant – shown with grey fill in the table.

Table 4.9 Spearman's correlations between factors and alignment score

Organizational Factors	**r_s (cor. coef.)**	**P values**
Total score for factors	0,723	,000
Business-IT planning integration	0,620	,000
Commitment to strategic use of IT	0,560	,000
Executive support for IT	0,429	,000
Prior IT success	0,421	,000
IT Understands Business	0,406	,000
Well defined business strategies, missions and objectives	0,382	,017
Communication between Business and IT	0,347	,003
IT's involvement in strategy development	0,334	,004
The presence of effective and functional IS	0,304	,010
Business Understands IT	0,123	,307

The above figures show that total score for factors has a very strong positive relationship with alignment score. Individual factors also have positive relationships with the alignment score. *Business-IT planning integration, commitment to strategic use of IT, executive support for IT, Prior IT success, IT understands business* have strong positive relationships; *communication between business and IT, IT's involvement in strategy development*, *presence of effective and functional IS* and *well-defined business strategies, missions and objectives* have moderate positive relationships with the alignment score.[4]

[4] The strength of correlation based on p values are taken from http://faculty.quinnipiac.edu/libarts/polsci/statistics.html in 26.08.2014

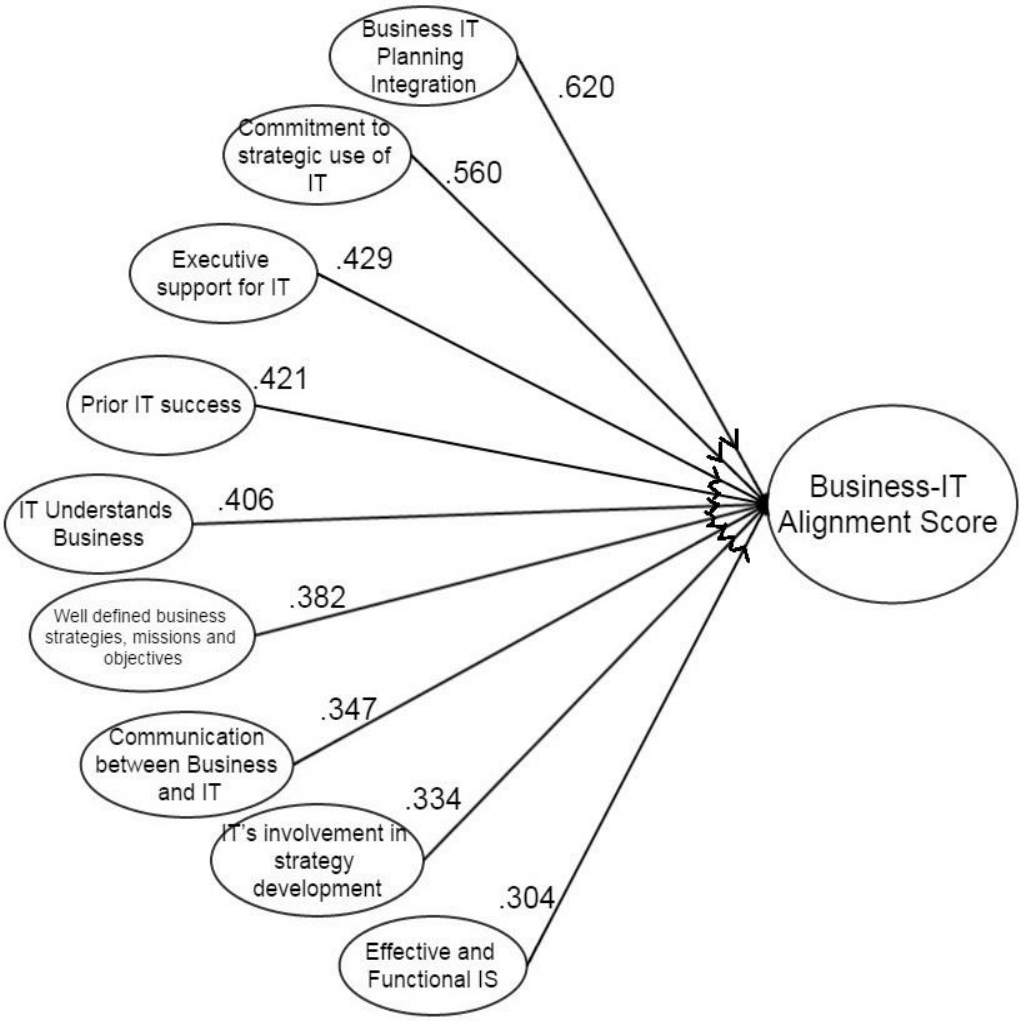

Figure 17 The Correlation Model

4.7 Combining Correlation Analysis with Factor Ratings

The Table 4.10 summarizes both managers' visions on factors and factors' correlation strength with alignment together. First column indicates the executives' ratings for factors, second column lists the correlation coefficients. Grey shaded ones are the ones that are statistically significant.

Table 4.10 Summary of both managers' ratings and correlation analysis

Organizational Factors	Mean Score	r_s (corr.)
The presence of effective and functional IS	4,46	0,304
Executive support for IT	4,42	0,429
Well defined business strategies, missions and objectives	4,35	0,382

Commitment to strategic use of IT	4,31	0,560
IT Understands Business	4,31	0,406
Business Understands IT	4,31	0,123
Business-IT planning integration	4,30	0,620
Communication between Business and IT	4,15	0,347
IT's involvement in strategy development	3,92	0,334
Prior IT success	3,49	0,421

The most striking point in the table above is that the factor 'presence of effective and functional IS' was rated as highest effective on alignment score (4.46), however it is found relatively less effective in the correlation analysis (0.304). We draw attention on this point in discussion part in more detail. Our analysis and responses in interview lead us to the statement that this difference in two data can be attributed to priorities of executives. As explained before, in organizational factor ratings part, Turkish managers firstly want from their IS to function properly before everything else. This can be the reason why they rate effective IS the most. However the competence of IS was not found to be that much effective in actual measures. See the discussion part for more explanations in this issue.

CHAPTER 5

DISCUSSION

Up to now, we have our analysis data about managers' perspectives about our ten factors, which we drive from previous studies, we know how managers think about the factors' contribution to IT and business strategies alignment. Together with this we also have the data about those factors' correlation strength with the alignment score of the firms.

In this section we try to have more insights about the results of our analysis. We will compare managers' ratings for factors with factors' correlation strength and try to understand both similarities in these figures and also the differences between the two sets of scores.

The total score for ten factors was found to be highly effective on the IT alignment and results show that the model explains the %72 of the variations in the alignment scores. Though this indicates measures are sufficient for deducing a strong correlation, we still need to consider the reasons for not having greater figures for the extent of the correlation. In terms of the factors we select for building our model, we can say that those factors encompass nearly all of the factors studied in the respected papers. The only concern we have, as mentioned in the limitations of the study part, the contextual factors (such as organizational culture, economic stability) are not included due to the focus and limitations of our study.

The collective effect of our ten factors on the alignment is much more than that of the individual factors, though they vary in their strength. This demonstrates that to attain the alignment, managers had better to pay attention for ensuring all of those factors for the company as preliminary steps for alignment.

These three factors are found to be strong both in managers' ratings and in correlations: Business-IT planning integration, commitment to strategic use of IT, executive support for IT. The total score for these tree factors have a high correlation strength -r_s: .73, p: .001. We will try to have more insights about these three factors.

Business-IT planning integration: IT planning can be defined as the process of "identifying IS projects that support the organizational goals, and to develop these projects on time and within budget. (Lederer & Mendelow, 1989)" It is obvious that in developing those projects, organizations have limited time and resources, thus they can only fund limited number of these projects. So business-IT planning integration would help the firm to identify the critical applications and ensure that the limited resources are allocated to those critical applications. (Teo & King, 1996) Thus planning integration was suggested to attain business and IT alignment both by prescriptive/conceptual studies (Henderson & Venkatraman, 1999) as well as numerous empirical studies.(Lederer & Mendelow, 1989; Luftman, Kempaiah, & Nash, 2006; Reich & Benbasat, 2000; Teo & Ang, 1999; Teo & King, 1996, 1997) For example Reich and Benbasat cite from Leaderer and Burky (1989) that the IT executives who participate in business planning have a better understanding of top management's objectives and they would come with more IT solutions for new business opportunities and problems.

*Executive support for IT and their commitment to strategic use of IT: I*t is widely suggested in the business circles that executive commitment and support are critical for any development and implementation process within the firm; and this is so for strategic use of IT as well. (Teo & Ang, 1999) If the business managers are aware of the IT's competencies and the strategic opportunities that IT offer and therefore if they have the commitment to exploit the IT as a strategic tool, they would be more interested in new ways of doing business that the IT facilitates.(Porter & Millar, 1985) Otherwise they would not consider the IT as a business solution when they are challenged with either an organizational or a competitive threat. Thus at the end those managers who have more commitment to strategic use of IT would be more enthusiastic to incorporate IT in their business operations. Executive support and commitment for IT is also favored by numerous empirical studies. (Aggarwal, 2010; Chan et al., 2006; Luftman et al., 1999; Teo & King, 1996)

The factor '*presence of effective and functional IS'* requires attention since it received the highest score from managers but its' correlation strength is found to be relatively weak in actual measures. We hypothesized that the reason why managers rate this high can be the result of the fact that those do rate high may have an IS with sub-optimal performance thus having an effective and functional IS has

gained priority in their eyes. Hence their expectation is not reflected in actual measures. Because the managers in our study reported that their IT competence and also prior IT success were relatively low. We also check this point by comparing the means of those who see their prior IT performance as successful and those who do not, and we observed that the latter rated this factor's importance significantly higher than the former. (4.55 to 4.15 with a p value of .055) Furthermore we asked this point in our interviews. All of the interviewees pointed out that since firms usually have problems with their IT, this led them to give high priority on the effectiveness of their IT.

Having an effective and functional IS is a precondition for user department's perception of IS department. If business departments and executives do not perceive the services given by IS as effective and reliable enough they would not be eager to share their strategic decisions and to include the IT in strategy formulation process.(Teo & Ang, 1999) Thus the strategic value of IT would be lowered in the eyes of business managers and this will also affect the future decisions regarding the project proposals of IS department, like budget allocation for those projects. This in the end would turn out to be a vicious circle that the IT would be kept out from the strategic position that it deserves.

Business understanding of IT was the second factor that required attention after our analysis. Majority of the firms -%80- found themselves successful in this factor. Firstly we asked this point in the interviews, whether it is an overconfidence or a misperception of IT or just the reality itself, both IT and business managers responded that business managers' understanding of IT is not at the level the IT deserves. They ascribe basic roles for IT like e-mailing and some reporting needs. Since they reported higher success for this item, the correlation between business managers understanding of IT and firms' alignment score was not found significant, because variation in the data set was not adequate for correlation.

However though it was not proven in correlation analysis, the factor was rated high in factor ratings part. Also our interviewees reported that 'business understanding of IT' is important and even critical for the IT and business alignment. One interviewee said that it is only the top management's commitment that ensures the implementation of an IT project. Thus their perception about the importance of the proposed IT project plays a vital role in its successful implementation.

There are also studies that found business managers' knowledge of IT as a requirement for IT alignment. As Teo and Ang (1999) cited from Armstrong and Sambamurthy (1996), since the resources of firms are limited and IT projects are costly, top management should be knowledgeable about IT to objectively evaluate new project proposals.

CHAPTER 6

CONCLUSION

This chapter organized under three parts; limitations of the study, suggestions for future work and implications of the study for practitioners and managers.

6.1 Limitations of the Study

We organize the limitations of the study under two categories: in terms of coverage of factors and sampling. We also included our suggestions for further studies in relation with the limitations in the respective part.

In terms of Coverage of Factors

The organizational factors examined in this study are driven from the previous studies which are conducted in different cultural settings. So what we measured a global phenomenon within the Turkish context. Indeed we asked the managers' suggestions for additional factors in the questionnaire however they did not propose any. Therefore we did not incorporate local contextual factors in determining our set of factors. Thus a qualitative study that searches for more local factors would be a significant contribution to the field.

In terms of sampling

Our sample size is adequate in total however some industries are underrepresented. Thus this would endanger the reliability of our industry based conclusions especially for some industries, like healthcare and transportation. Indeed this analysis are not central to our study. We drew an overall picture of the IT alignment level and antecedent factors for the alignment. Further studies can address more industry specific factors within the general frame we drew in this study.

6.2 Suggestion for Future Work

Firstly, studying the antecedents of alignment in Turkish industrial context is relatively at its infant phase. Although this quantitative study gave a picture of the phenomenon, a qualitative study that incorporates the contextual factors with deeper insights is required. That qualitative study can address the questions like: Can the IT and business strategies alignment be an appropriate paradigm under Turkish economic conditions, can the IT alignment be a driving force in the competitive environment of Turkey, what other external factors shape the approach of managers to alignment issue. Such a qualitative study would make our conclusions more country specific and if brought together with our study, a more accurate picture of the Turkish case would be depicted and more appropriate suggestions would be formulated for Turkish managers.

Secondly, we relied upon the literature for the financial outcomes of IT alignment. The fact that IT alignment has positive effect on firms' organizational and financial performance was our core assumption. This relationship has not been studied for Turkish context. A study addressing this relationship in Turkey would be a significant contribution for the field.

Thirdly this study examined the antecedents of IT alignment in private companies. A future study that examines these factors for the public institutions in Turkey is suggested.

6.3 Implications for Practitioners

As the role of IT for firms' strategic objectives and operations gained importance, the need for integrating IT with business strategies also increased. Aligning IT with business strategies is regarded as a key for a competitive position in the market(Chan et al., 1997; Luftman et al., 1999). Also attaining the alignment would lead to better utilization of company resources.(A. Yayla & Hu, 2009) Thus both IT and business managers should include attaining this alignment in their agenda with a higher priority. 94% percent of managers participated in the study also founded IT alignment important supporting the importance of attaining alignment.

However achieving the IT alignment can be an ambiguous aim. This study sheds lights on the means to achieve the alignment. The study attracts managers' attention to certain organizational factors and proposes those factors as preliminary steps to attain the alignment. In

other words these factors are suggested to be present within the firm to facilitate attaining the alignment.

Based on our analyses, the factors that managers are advised to take care of are: executive support for IT, commitment to strategic use of IT and business-IT planning integration. The first two, even the third to some extent, emphasize the need for business managers to be aware of the importance of IT as a strategic tool and be more enthusiastic for discovering new business opportunities that the IT offers. The third one also requires the managers to include IT managers in their strategy formulation processes and to treat them not as ordinary middle managers but as strategic partners instead.

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APPENDIX

Main Parts of the Questionnaire Used in the Study

BİLİŞİM TEKNOLOJİLERİ VE İŞ STRATEJİLERİ UYUMU ANKETİ

Bu ankette sizden, bilişim teknolojileri ve iş stratejileri uyumunu etkileyen faktörler hakkındaki görüşleriniz alınacaktır. Bilişim-İş Stratejileri Uyumu (BİSU): Şirket stratejileri, amaç ve faaliyetlerinin bilişim sistemi tarafından ne kadar desteklendiğini, bilişim ve şirket stratejilerinin ne kadar uyumlu olduğunu ifade eder.

İlk kısım bilişim teknolojilerinin stratejilerinizle ne kadar uyumlu olduğunu ölçmektedir. İkinci kısımda ise faktörler hakkında hem kanaatlerinizi hem de o faktör noktasından firmanızın başarısını belirteceksiniz.

	Kesinlikle KATILMIYORUM (1)	KATILMIYORUM (2)	Ne Katılıyorum Ne Katılmıyorum (3)	Katılıyorum (4)	Kesinlikle Katılıyorum (5)	Böyle bir stratejimiz bulunmamaktad ır (6)
1. Bilişim sistemimiz iş maliyetlerimizi düşürmemize yardımcı olur (10)	○	○	○	○	○	○
2. Bilişim sistemimiz ürün ve/veya hizmetlerimizi rakiplerimizden farklılaştırmamıza olanak verir. (12)	○	○	○	○	○	○
3. Bilişim sistemimiz ürünlerimizin	○	○	○	○	○	○

kalitesini arttırmamızı sağlar. (14)						
4. Bilişim sistemimiz yeni ürünleri rakiplerimizden önce piyasaya sürebilmemize olanak verir. (16)	❍	❍	❍	❍	❍	❍
5. Bilişim sistemimiz üretim süreçlerimizi verimlileştirmemize yardımcı olur. (17)	❍	❍	❍	❍	❍	❍
6. Bilişim sistemimiz ürünlerimizi çeşitlendirmemize yardımcı olur. (18)	❍	❍	❍	❍	❍	❍
7. Bilişim sistemimiz müşteri hizmetlerimizi kalitelileştirmemize olanak sağlar. (19)	❍	❍	❍	❍	❍	❍
8. Bilişim sistemimiz yeni piyasaları farketmemize olanak sağlar. (20)	❍	❍	❍	❍	❍	❍
	❍	❍	❍	❍	❍	❍

	Aşağıdaki ifadelere katılıyor musunuz?					İlgili faktörde firmanızı başarılı buluyor musunuz?	
	Kesinlikle KATILMIYORUM (1)	KATILMIYORUM (2)	Ne Katılıyorum Ne Katılmıyorum (3)	Katılıyorum (4)	Kesinlikle Katılıyorum (5)	HAYIR (1)	Evet (2)
1. BİSU için Bilişim yönetiminin iş dünyasını anlamaları şarttır. (1)	❍	❍	❍	❍	❍	❍	❍

2. BİSU için, Şirket yönetiminin bilişim teknolojilerini anlamaları şarttır. (2)	❍	❍	❍	❍	❍	❍	❍
3. BİSU için, Şirket ve bilişim planlamalarının beraber yapılması/entegrasyonu şarttır. (5)	❍	❍	❍	❍	❍	❍	❍
4. BİSU için, şirket stratejilerinin, misyon ve hedeflerinin iyi belirlenmiş olması şarttır. (6)	❍	❍	❍	❍	❍	❍	❍
5. BİSU için, Bilişim departmanının başarılı bir geçmişi olması şart değildir. (7)	❍	❍	❍	❍	❍	❍	❍
6. BİSU için, firma yönetiminin bilişim'e destekleri / arka çıkmaları şarttır. (8)	❍	❍	❍	❍	❍	❍	❍
7. BİSU için, Bilişim yönetiminin iş stratejilerini belirleme sürecine katılımları şarttır. (9)	❍	❍	❍	❍	❍	❍	❍
8. BİSU için, şirket	❍	❍	❍	❍	❍	❍	❍

yönetiminin bilişim teknolojilerinden anlamaları şart değildir. (10)							
9. BİSU için, bilişim sisteminin yetkin ve fonksiyonel olması şarttır. (11)	❍	❍	❍	❍	❍	❍	❍
10. BİSU için, bilişim departmanının başarılı bir geçmişi olması şarttır. (12)	❍	❍	❍	❍	❍	❍	❍
11. BİSU için, Bilişim ve şirket yöneticileri arasında yakın iletişim olması şarttır. (13)	❍	❍	❍	❍	❍	❍	❍
12.BİSU için, bilişim sisteminin stratejik kullanımına önem verilmesi şarttır. (14)	❍	❍	❍	❍	❍	❍	❍

The questionnaire template used in the interviews

1. Why firms found themselves highly successful in "Business managers understands IT"?	
2. Do you agree with this success?	
3. Do you find that factor effective in attaining the alignment?	
4. Why firms rated "The presence of effective and functional IT" high?	
5. Can this be a result of having problems with the efficiency of IT	